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Development and Validation of a Measure of Quality of Life for the Young Elderly in Sri Lanka

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Abstract

Sri Lanka has one of the fastest aging populations in the world. Measurement of quality of life (QoL) in the elderly needs instruments developed that encompass the sociocultural settings. An instrument was developed to measure QoL in the young elderly in Sri Lanka (QLI-YES), using accepted methods to generate and reduce items. The measure was validated using a community sample. Construct, criterion and predictive validity and reliability were tested. A first-order model of 24 items with 6 domains was found to have good fit indices (CMIN/df = 1.567, RMR = 0.05, CFI = 0.95, and RMSEA = 0.053). Both criterion and predictive validity were demonstrated. Good internal consistency reliability (Cronbach's $\alpha = 0.93$) was shown. The development of the QLI-YES using a societal perspective relevant to the social and cultural beliefs has resulted in a robust and valid instrument to measure QoL for the young elderly in Sri Lanka.

Keywords

instrument development; quality of life; structured equation modeling (SEM); tool validation and young elderly; Sri Lanka

Introduction

Quality of life (QoL) is a multidimensional concept, which has also been defined in societal terms and is grounded in the “life in context of the culture and value system” of the respondents.^{1,2} The promotion of QoL in older age and its valid assessment is a priority for governments.^{2,3} These concerns are not limited to the high-income countries. For instance,

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Authors' Note

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Sri Lanka, a low-middle income country, has one of the fastest aging populations in the world.⁴ The total number of elderly population was 2.5 million (12.2%) in 2011 and is expected to rise to around 6.1 million (28.8%) by 2051. The government has given attention to the needs of its older citizens; however, there are yet no accurate indicators to measure progress of policies.⁵

The concept of health-related quality of life (HRQoL) has been used to encompass those aspects of overall quality of life that can be clearly shown to affect health. In the case of measurement of QoL in the elderly, it has most often been carried out using generic HRQoL instruments such as the Medical Outcomes Study “Short Form 36.”⁶ Some researchers have developed QoL instruments specific for elderly. Guyatt et al⁶ developed a measure for frail elderly, Paschoal et al⁷ developed the Elderly Quality of Life Index (EQOLI), and Bowling² developed the Older People’s Quality of Life (OPQOL) instrument. Bowling’s approach is noteworthy, as she built the dimensions from the perspective of older persons.

All these developments, however, have been in Western cultural settings. It has been argued that people in individualistic societies in the West, are more likely to focus on their own life conditions, while those in collectivistic societies in Asia are more likely to consider the well-being of their family when they assess their own well-being.⁸ Thanakwang et al⁹ point to substantial cultural differences between East and West. Nilsson et al¹⁰ concluded that none of the available QoL instruments were suitable or capable of measuring quality of life of the elderly population in Asian communities when they embarked on developing a new QoL instrument for elderly population in Bangladesh.

The elderly may be functionally classified into 2 age groups: the “young elderly” (60–74 years) and the “old elderly” (75 years and older).¹¹ The age-related differences in cognition, intelligence, memory, and physical capacity between the 2 age groups are well documented.^{12,13} The manner in which an individual passes through this “young elderly” period will contribute to illness and other problems in older age. In Sri Lanka, 60 years is the age used to identify elderly for services and benefits.¹⁴ In response to the needs of the elderly in Sri Lanka and the importance of grounding the HRQoL in sociocultural perspectives, a QoL instrument for the young elderly: the “Quality of Life Instrument for the Young Elderly in Sri Lanka (QLI-YES)” was developed. Its development and validation are reported in this article.

Methods

The methods for the development and validation of the QLI-YES are reported in Table 1. This section provides additional details of methods.

Development of the QLI-YES instrument

In stages 1 and 2, accepted procedures to develop new measurement instruments were followed²⁰ and were informed by the work of Nilsson et al¹⁰ and Ingersoll-Dayton et al,⁸ who developed culturally relevant measures in Thailand. A panel of Sri Lankan experts all of whom had experience working in the elderly care field in Sri Lanka guided the development at each step.

Item selection was based on a review of literature (1990–2009), where suitable items and domains were identified from 24 relevant QoL instruments. Focus group discussions (FGDs) and key informants interviews were then conducted to test content validity of the items from a list and to generate additional items. In addition, the FGDs served to elicit respondents' preferences for mode of administration, length of the questionnaire, wording and the response scale for the instrument. The item selection resulted in a list of 93 items categorized into 6 domains: physical (13%), mental (31%), social (20%), functional (14%), environmental (13%), and spiritual (9%).

At the next stage (stage 3), item reduction followed methods described by Juniper et al.²¹ An impact score was calculated for each item (see Table 1). Endorsement by more than 50% of the participants and an impact score of 2 and higher was used to select items for retention in the scale. Following this step, a principal components analysis (PCA) with varimax rotation was conducted for items in each domain and items with eigen value of greater than 1 were retained.²²

The survey population and sampling method are described in Table 1. Sample size was calculated to fulfill the requirement of the number of respondents to be 5 times the number of items from the longest scale (mental health domain, which contained 30 items) to obtain reliable results.²³

The construction of the QLI-YES (stage 4) involved review of all of the results by the expert committee and selection of the mode of presentation.

Validation of the QLI-YES

Three aspects of validation are generally accepted: (a) content validity, (b) criterion validity, and (c) construct validity. The last is considered the most important aspect, where dimensionality, homogeneity, and overlap are tested using psychometric tests.²³ In addition, an instrument needs to be reproducible (test-retest reliability) as well as have all of its items measuring the same construct (ie, internal consistency).²⁴

In stage 5, the construct validity of each domain and the overall QLI-YES was assessed by performing confirmatory factor analysis (CFA). Initially, congeneric models for each domain were tested followed by test of a multifactor models using maximum likelihood estimation. A form of construct validity “known-groups validity” was assessed among participants who had experienced significant life events during the past year and who were diagnosed as having chronic medical conditions (previous illness) using one-way analysis of variance (ANOVA) tests.²⁵ Criterion validity was assessed by comparing the relevant domain scores of the QLI-YES with 3 independent measures, each measuring an important aspect of HRQoL: the ADL/IADL (activities of daily living/instrumental activities of daily living) scale as a measure of functional status,²⁶ the WHOQoL BREF as a measure of quality of life,²⁴ and the Abbreviated Mental Test Score (AMTS) as a measure of the mental status and cognitive function.²⁷ Since each of these instruments measures a different aspect of QoL, a moderate correlation $r = 0.40$ to 0.70 was considered to be adequate.

Reliability was established using tests of internal consistency and test-retest reliability. Cronbach's α statistic was used in the assessment of internal consistency of the domains and the entire instrument. An α coefficient score >0.7 was considered to be satisfactory.²⁸ In addition, intraclass correlation coefficients (ICCs) were assessed.¹⁸

For the purposes of validating the QLI-YES, the second field survey was conducted (details in Table 1). The sample size was determined to enable structural equation model (SEM) testing for construct validation. A sample of 200 was decided on to fulfil the requirement for SEM of having more than 5 times the number of free variables in the instrument.¹⁷ To evaluate the test-retest reliability of the instrument, it was readministered to a subsample of 50 participants within a 2-week interval by the same interviewer.

Data management and analysis were performed using the IBM SPSS Statistical Package version 21 and AMOS version 21. Ethics approval was obtained from the Ethics Review Committee of the Medical Faculty of University of Colombo and informed verbal consent was obtained from each participant.

Results

Scale Development

A total of 147 older people (age 60–74 years) completed the item reduction questionnaire of 93 items. Participants comprised both sexes, all ethnic and religious groups. The percentage endorsement, mean importance, and impact score (percentage endorsement into mean importance) were calculated.²¹ Twenty-five items with endorsement rates less than 50% and 5 items with impact score less than 1 were removed reducing the list of items to 63. The panel of experts replaced 4 items to the list.

The results of survey 1 with a list of 67 items were then subject to PCA (Table 2), resulted in reducing the list to 28 items. Two additional questions on satisfaction pertaining to the general health and perceived quality of life of the individual were included in the QLI-YES on the recommendation of the expert group. A 5-point Likert-type scale with descriptive terms was used as the response scale. Thus, a 6-domain, 30-item QLI-YES was developed with 28 specific items and 2 general questions to measure quality of life among the elderly population in Sri Lanka.

Scale Validation

There were 200 participants in survey 2, with mean age 66 years ($SD = 3.8$ years), females (73%), currently married (56%), unemployed or never employed (55%), with 68% having an education level exceeding grade 10. The majority (56%) of the group had no permanent income and 36% were widowed.

A satisfactory level of goodness of fit for the congeneric models of each of the 6 domains (subscales) was obtained. The CMIN/df values ranged from 0.019 to 1.836, and the RMSEA (root mean square error of approximation) values were lower than 0.06. All the CFI (comparative fit index) and GFI (goodness-of-fit index) values were greater than the

minimum required 0.95 level, indicating that the subscales for each domain had a good factor structure.

Three models were tested (Table 3) using CFA. From the first-order model (model 1) 4 items were removed (1 each from physical and mental domain and 2 from the social domain) to derive model 2 (see Table 2). As the next step, a second-order model was tested to represent the “overall QoL” (model 3). The fit indices for model 2 were CMIN/df = 1.567, RMR (root mean square residual) = 0.05, GFI = 0.863, CFI = 0.95, and RMSEA = 0.053 with a PCLOSE of 0.219. The χ^2 difference test was used to assess whether there was a statistically significant difference between models 2 and 3.¹⁷ A χ^2 difference of 37.9 (with 9 df) was found, which was significant. However, both models 2 and 3 demonstrated acceptable fit indices.

The results of the “known group” analysis are given in Table 4 for each of the domains of the QLI-YES for having a previous disease and experiencing a significant life event during the past year. As hypothesized, the values in all domains except one of QoL decreased with experiencing “significant life events during the past year.” The decrease in QoL for “previous disease” was significant for only 2 domains (physical and social).

Criterion validity was assessed with other related measures of QoL (Table 5). The physical domain of the WHOQoL-BREF correlated with the physical (0.685) and functional (0.714) domains of the QLI-YES. The social and environmental domains correlated highest with the respective domains of the QLI-YES. However, the psychological domain of the WHOQoL-BREF correlated highest (0.676) with the spiritual domain and less (0.576) with the mental domain of the QLI-YES. The AMTS demonstrated good correlations with the mental (0.724) and spiritual (0.605) domains of the QLI-YES. The ADL/IADL scales showed modest correlations with the physical (0.419) and functional (0.497) domains of the QLI-YES.

The mean domain scores, standard deviations, Cronbach’s α coefficients and ICC coefficients are presented in Table 6. The measure of internal consistency ranged from a minimum of 0.78 for the spiritual domain (with 3 items) to a maximum of 0.92 for the mental domain (with 6 items). The internal consistency reliability of the entire instrument as measured using Cronbach’s α was 0.93. The ICC results demonstrated moderate agreement for the physical (0.54), social (0.46), functional (0.49), and spiritual (0.54) domains. Strong agreement was shown with the mental (0.69) and environmental domains (0.71). Both flooring and ceiling effects were minimal. In addition, the QLI-YES demonstrated satisfactory test-retest reliability and repeatability with kappa coefficient values of 0.94 and 0.92, respectively.

Discussion

There has been a call for instruments suitable to capture the QoL of elderly people in Asian populations as the social and cultural contexts are significantly different to the West.¹⁰ Such instruments must be built “from the ground up” to include the sociocultural nuances.² To our knowledge, there has only been 1 other measure of QoL for older persons in Asia that has

been developed, the Health-Related Quality of Life of Older Persons in Bangladesh (HRQOL-OPIB).¹⁰ Other instruments that were developed for older people in Asia had a different focus, such as “active aging” in Thailand (AAS-Thai)⁹ and subjective well-being (Chinese Aging Well Profile–CAWP) in Taiwan.²⁹

Developers of HRQoL instruments have used the impact method by asking respondents to identify the impairments that affected their daily lives.^{20,30} Juniper et al²¹ concluded that “items of greatest importance to patients . . . would have been excluded . . . if we had used the psychometric method.” The development of the QLI-YES used both the impact method and psychometric method during the item reduction phase.

The QLI-YES was tested for construct & criterion validity in a second field study. The results of the CFA showed that both the first order and second order models have acceptable fit indices, meaning that the measure as a whole (for QoL of the elderly) and the subscales are valid measures. The QLI-YES identifies 2 domains, “physical” and “functional,” while the instrument from Bangladesh has similar items under 1 domain named “physical.” In addition, items under the “financial” domain in the HRQOL-OPIB were within the “social” domain in the QLI-YES. This concurs with the findings of Nilsson et al,¹⁰ who tested the HRQOL-OPIB developed in Bangladesh in Vietnam and found that HRQoL cannot be generalized from one country to another. This demonstrates that sociocultural nuances of a setting, needs to be considered in developing QoL measures.

Known group comparisons are useful for psychometric validation of instruments.^{24,31} The study findings clearly show the QLI-YES was able to predict the impact of adverse life events in most of the domain scores. On the other hand, previous chronic conditions impacted only on the physical and social domains. One possible explanation for the low effect on the mental domain could be the influence of Buddhist teachings, which are practiced by a majority where aging, disease, and decay are phenomena accepted as part of aging unlike in the West.

In the absence of a gold standard to test criterion validity, this was tested with other tools that had been validated in Sri Lanka.³² The QLI-YES contained 6 domains and there was no direct match with the 4 domains measured by the WHOQoL-BREF. However, results indicate that the QLI-YES has good concurrent validity properties, adding to the construct validity of the instrument. Concurrent validity has not been reported for the HRQOL-OPIB and CAWP. The Thai instrument (AAS-Thai) tested concurrent validity with the Healthy Aging Scale.⁹

Reliability of the QLI-YES was measured using Cronbach’s α and ICCs. Acceptable internal (consistency) reliability requires Cronbach’s α values of 0.8.³³ The full measure attained an α value of 0.93 and α values greater than 0.8 were seen in all the domains. These reliabilities were higher than those reported for comparable multidimensional measures Australian Quality of Life (AQoL) (0.52–0.86),³⁰ WHOQoL-OLD (0.72–0.88),²⁴ and CAWP (0.77–0.93).²⁹

All the above findings taken together indicate that the QLI-YES is a valid and reliable measure of QoL among young elderly in Sri Lanka. However, there are some limitations.

This study was conducted with community-dwelling elderly participants in a mixed urban/rural setting in the southwest part of the country as such the findings cannot be generalized to the country. Excluding participants who were bedridden may have created bias.¹⁵ Elderly persons with such limitations may be in community settings and not in institutions, as majority of the elderly in Sri Lanka live in community settings and receive their care from family members; elderly care institutions are few.⁴

Conclusions

A 30-item multidimensional scale (QLI-YES), consisting of 28 items representing 6 domains (physical, mental, social, functional, environmental, and spiritual) and 2 items on the individual's overall perception of QoL and health was developed to measure QoL in young elderly in Sri Lanka. A community-based sample of young elderly were administered this instrument for psychometric testing. CFA confirmed the structure of a first-order (24-item, 6-factor) and second-order models of the QLI-YES. The relevant domains of the WHOQoL-BREF correlated with the domains of the QLI-YES. The instrument was found to have good internal consistency reliability. Further studies with diverse population groups in different settings are required to generalize these findings to the country. The development of the QLI-YES has shown that QoL measures that use a societal perspective to include content that is relevant to the social and cultural beliefs of participants in low-middle income country setting result in robust instruments.

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Table 1

Procedures Undertaken in the Development and Validation of the Quality of Life (QoL) Instrument for the Young Elderly in Sri Lanka (QLI-YES).

Stage	Aims	Procedures	Data Collection	Data Analysis
<i>Part 1: Development of the QLI-YES</i>				
One	Domain and item selection	QoL instrument review	Review of 24 QoL instruments: Identified from literature from 1990 to 2009. Instruments were obtained from primary sources and secondary sources: patient reported outcomes and quality of life instruments database (PROQOLID) ⁵ and collection of QoL instruments in the commonly used text "Measuring Health" ¹⁶	Identify the items considered as important for one's quality of life and the broader domain the item represented
Two	Content validation	Focus group discussions (FGDs)	Two FGDs with (60–74 years old) participants (22), one with care providers (9) and one with health professionals (8). All participants were selected purposively The group also reviewed QoL-BREF, SF-36, AQoL, and EQ5D	Include additional items to the list Decide on the mode of administration, length of the questionnaire, wording and the response scale for the instrument
Three	Item reduction	Key informant interviews	Nine interviews: hospital administrator, a Buddhist monk, 2 medical experts, 2 elderly care workers, social worker, and 2 elderly persons	Include additional items to the list
Four	Construction of QLI-YES	Panel of experts	Comprising a sociologist, a community worker, a psychiatrist, an elderly retired teacher, and a physician assessed the content validity	The panel of experts assessed the compiled list of items and their domains for their content validity
Five	Validation	Field study 1 Impact method	Field study 1: 147 elderly participants (60- to 74-year age group) were selected. Multistage stratified sampling was used with Grama-Niladari (GN)—the lowest level of administration as the primary sampling unit (PSU). A random sample of GN areas was selected. Fifteen clusters of 10 individuals each, with each cluster having the ratio 4:4:2 for the number of participants in the age groups, 60–65, 65–70, and >70 years, respectively, were selected using the EPI method where the starting point was randomly selected from a list of junctions. Those bedridden and who were unable to understand the questions based on impairment of cognition were excluded. Two trained medical officers administered the questionnaires. The participants were requested to rate the items based on its importance on a 5-point scale (1 = <i>not important</i> to 5 = <i>extremely important</i>)	The frequency of endorsement, the importance and the impact (the product of "frequency" multiplied by its mean importance) were calculated.
Four	Construction of QLI-YES	Factor analysis		Principal components analysis—PCA (with varimax rotation) was conducted for items in each domain. Items with eigen value of greater than 1 were identified.
Five	Validation	Item presentation	The questions were formulated to enquire about the level of subjective satisfaction or contentment the respondent had for the items or events selected as important	Perceived satisfaction was assessed based on a 1–5 response scale
<i>Part 2: Validation of the QLI-YES</i>				
Five	Validation	A field validation study was conducted	Field study: An area having both urban and rural settings and all ethnic and religious groups in one Divisional Secretariat (DS) area (Kotte area with a population of 107 508) was selected. A multistage stratified systematic sampling technique was used to select sample of 200 elderly participants (60- to 74 year age group) based on 20 clusters of 10 individuals each, with each cluster having the ratio 4: 4: 2 for the number of participants in the age groups, 60–65, 65–70, and >70 years, respectively. The QLI-YES was administered to all people who had been	

Stage	Aims	Procedures	Data Collection	Data Analysis
			resident for more than 6 months and who were older than 60 years but had not completed 74 years. Households where individuals were bedridden or were physically or mentally incapable of understanding verbal instructions were skipped in selecting the sample	
		1. Construct validity—CFA	The construct validity of each domain and the overall QLI-YES was assessed by performing confirmatory factor analysis (CFA)	A 2-step process was followed. First, each domain (single factor) was tested using CFA for a congeneric model to obtain fitting models. In the next step a multifactor model (whole instrument) was used to test the hypothesized 6-factor structure of the QLI-YES using maximum likelihood estimation Absolute fit measures, relative fit measures and comparative fit index (CFI) and fit measures based on the noncentral chi-square distribution was used in assessing model fit. ¹⁷
		2. Predictive (known group) validity	QoL among who had experienced a significant life event during the past year and those having chronic medical conditions	One-way analysis of variance (ANOVA) test used to assess the statistical significance
		3. Criterion validity	Relevant domain scores of the QLI-YES was compared with 3 independent measures: WHOQoL-BREF;ADL/IADL, and AMTS	Pearson's correlation
		4. Reliability assessment	Internal consistency was assessed on separate domains as well as the entire instrument Test-retest reliability	Cronbach's α statistic. In addition, intraclass correlation coefficients (ICC) were assessed. ¹⁸ ICC scores <0.4 are indicative of poor agreement; scores from 0.41 to 0.60 signify moderate agreement; scores from 0.61 to 0.80 signify strong agreement; and scores in excess of 0.81 indicate excellent agreement ¹⁹ Kappa coefficient

Table 2
Developed QLI-YES: Principal Components Analysis (Factor Loadings) and Reliability.

Item	Wording	Domain	Mean	SD	Internal Consistency Within Domain	Item to Total Correlation	Factor Loading
1.	Satisfaction with level of vision and hearing ^a	Physical	3.25	0.74	0.822	0.638	0.752
2.	Work interfered by pain and discomfort	Physical	3.47	0.81		0.654	0.812
3.	Need of medication for normal functioning	Physical	3.54	0.81		0.682	0.744
14.	Quality and quantity of food received	Physical	3.46	0.65		0.623	0.625
4.	How happy are you	Mental	3.81	1.06	0.923	0.814	0.798
5.	How worried are you of the future	Mental	3.91	1.13		0.821	0.837
7.	Time spent in loneliness and isolation	Mental	3.97	1.04		0.768	0.797
11.	Self-esteem ^a	Mental	3.64	0.89		0.736	0.693
12.	Help to family	Mental	3.68	0.90		0.771	0.728
27.	Stress and mental frustration	Mental	3.82	1.05		0.782	0.817
6.	Dependency on others ^a	Social	3.76	1.10	0.845	0.462	0.514
8.	Financial adequacy	Social	2.81	0.80		0.476	0.513
13.	Social and family responsibility	Social	3.47	1.01		0.682	0.696
16.	Opportunities for rest ^a	Social	3.44	0.93		0.517	0.423
18.	Time spent with children/grandchildren	Social	3.70	0.91		0.618	0.595
19.	Recognition from family and society	Social	3.68	1.01		0.713	0.692
25.	Interpersonal relationships	Social	3.58	0.93		0.695	0.707
28.	Separation from a loved one	Social	3.69	0.97		0.501	0.652
9.	Peace of mind	Spiritual	3.84	1.09	0.778	0.665	0.583
10.	Contentment with life	Spiritual	3.66	0.90		0.621	0.567
24.	Opportunities for religious activities	Spiritual	3.79	0.91		0.577	0.708
15.	Time for enjoyment	Environment	3.24	0.83	0.880	0.683	0.638
22.	Access, quality of health care	Environment	3.44	0.82		0.829	0.893
23.	Satisfaction with comforts at home	Environment	3.48	0.78		0.797	0.808
17.	Quality and quantity of sleep	Functional	3.52	0.91	0.786	0.482	0.507
20.	Normal household activities	Functional	3.60	0.86		0.704	0.744
21.	Independence in ADL	Functional	4.64	0.76		0.574	0.804
26.	Decision—time and place	Functional	3.55	0.88		0.631	0.651

Abbreviations: ADL, activities of daily living; QLI-YES, Quality of Life Instrument for the Young Elderly in Sri Lanka.

^aItems removed during confirmatory factor analysis.

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Table 3

Confirmatory Factor Analysis for Models With Goodness-of-Fit Indices.

Model No.	Model Description	CMIN/df	RMR	GFI	CFI	RMSEA	PCLOSE
Model 1	First-order model—6 factors (28 items)	1.952	0.063	0.797	0.899	0.069	0.000
Model 2	First-order model—best fit: 6 factors (24 items)	1.567	0.050	0.863	0.950	0.053	0.219
Model 3	Second-order model—6 first-order factors and 1 second-order factor	1.664	0.056	0.848	0.939	0.058	0.100

Abbreviations: CFI, comparative fit index; CMIN, chi-square; df, degrees of freedom; GFI, goodness-of-fit index; PCLOSE, *P* value for testing the null hypothesis that the population RMSEA is no greater than .05; RMR, root mean square residual; RMSEA, root mean square error of approximation.

Table 4

Summary of QLI-YES Domains by Previous Medical Conditions and Having Experienced an Adverse Life Event During the Past Year.

Scale	Significant Life Event (SLE) During Past Year			Previous Diagnosed Medical Conditions				
	No SLE (n = 129)	SLE (n = 71)	Difference	P	No Previous Disease (n = 61)	Previous Disease (n = 139)	Difference	P
Physical domain	64.5	58.1	6.4	0.01	68.8	59.3	9.5	0.00
Mental domain	76.4	61.1	15.3	0.00	74.9	69.2	5.7	0.09
Social domain	65.6	56.0	9.6	0.00	66.7	60.3	6.4	0.01
Functional domain	72.0	68.3	3.7	0.13	73.9	69.2	4.7	0.06
Environmental domain	61.7	55.9	5.8	0.03	61.7	58.7	3.0	0.27
Spiritual domain	73.3	61.6	11.7	0.00	71.7	68.0	3.7	0.23

Abbreviations: QLI-YES, Quality of Life Instrument for the Young Elderly in Sri Lanka; SLE, significant life event.

Table 5

Summarized Correlations of WHOQoL-BREF, AMTS, and ADL/IADL Scales With the QLI-YES.

	WHOQoL-BREF					AMTS	ADL/IADL
	Physical	Psychological	Social	Environmental			
Physical domain	0.685	0.466	0.342	0.487	0.378	0.419	
Mental domain	0.408	0.579	0.352	0.533	0.724	0.174	
Social domain	0.440	0.555	0.525	0.617	0.438	0.148	
Functional domain	0.714	0.505	0.420	0.585	0.431	0.497	
Environmental domain	0.491	0.491	0.383	0.624	0.467	0.105	
Spiritual domain	0.499	0.676	0.490	0.610	0.605	0.194	

Abbreviations: ADL/IADL, activities of daily living/instrumental activities of daily living; AMTS, Abbreviated Mental Test Score; QLI-YES, Quality of Life Instrument for the Young Elderly in Sri Lanka; WHOQoL-BREF, brief version of WHOQoL-100. Highlighted values correspond to the highest correlated domains.

Scale Mean Score by Domain, Percentage With Floor and Ceiling Effects, Cronbach's α Coefficient and the Intraclass Correlation Coefficient (ICC).

Table 6

Domain Description	Items	Mean	SD	Floor %	Ceiling %	Cronbach's α	ICC
Physical domain	3	62.2	16	0.0	2.0	0.8	0.5
Mental domain	5	70.9	23	0.5	8.0	0.9	0.7
Social domain	6	62.2	18	0.0	0.5	0.8	0.5
Functional domain	4	70.7	17	0.0	1.5	0.8	0.5
Environmental domain	3	59.6	18	1.0	0.5	0.9	0.7
Spiritual domain	3	69.2	20	0.0	6.0	0.8	0.5