

Quality of Life Among Senior Citizens in Bhutan: Associations With Adverse Life Experiences, Chronic Diseases, Spirituality, and Social Connectedness

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Abstract

This study explored associations between quality of life (QOL), spirituality, social integration, chronic diseases, and lifetime adversity among people aged 60 years and older in Bhutan. Adults aged 60 to 101 years ($n = 337$) completed face-to-face interviews. The main measure included the World Health Organization QOL questionnaire and Adverse Childhood Experiences International Questionnaire. The social relationships domain of QOL had the highest mean. Frequent back pain, memory decline, depression, mobility impairment, insomnia, and lung diseases were commonly reported and negatively related to QOL. Compared with women, men reported fewer physical and mental health problems and better QOL. Multivariate analysis revealed that cumulative health problems, psychological distress, and social connectedness contributed significantly to overall QOL. The measure of spirituality was negatively associated with QOL, which is not conclusive and suggests the need for more research especially when the influence of spiritualism is highly visible in the everyday lives of Bhutanese people. The significance of these findings is discussed in relation to care for elderly people in Bhutan.

Keywords

quality of life, elderly people, adverse childhood experiences, stressful life events, Bhutan

Introduction

The increasing global burden of chronic health conditions is largely driven by population ageing.¹ The likelihood of elderly people suffering from disease and multiple health complaints is higher among women² and those with low educational attainment³ as well as in those with a

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history of being unemployed.⁴ High quality of life (QOL) is reported by older people who have few diseases, little pain, high general physical function, and the ability to perform activities of daily living independently.^{5,6} In addition, many studies have documented the deleterious negative influence of adverse life experiences on QOL.⁷⁻⁹ The impact of stressful events on health or well-being, however, varies depending on how an individual views such adversities—as threats or challenges.¹⁰ Evidence suggests that exposure to moderate levels of adversity may be associated with good mental health and well-being because the experience of some kinds of stress fosters personal toughness and mastery that are beneficial throughout life.¹¹

There has been considerable international research into social and family determinants of QOL of elderly people. Both localized studies and systematic reviews generally confirm that higher QOL is associated with social support and close family and peer relationships.¹²⁻¹⁵ In Bhutan, social connectedness and spiritual observance are interrelated for many elderly people, and there may be strong relationships between spiritual or religious beliefs with all domains of QOL, in particular with social relationships QOL.¹⁶ Spirituality is believed to play an important role in psychological well-being mainly because it induces a sense of meaningfulness and purposefulness in life.¹⁷ People who are intrinsically spiritual (spirituality is a daily way of life) tend to report better QOL than those who are extrinsically spiritual (spiritual observance is a means to an end).^{18,19}

Bhutanese elderly people traditionally have been held in high esteem because of their wide experiences in life and their wisdom.²⁰ With rapid social changes to families as a result of modernization and urbanization, the sustainability of veneration, support, and care for the elderly is likely to be affected.²¹ To date, associations between QOL, adverse life experiences, and health conditions among older adults in Bhutan have not been systematically researched. This study was carried out to investigate the influence of lifetime adversity, chronic health conditions, spirituality, and social connectedness on QOL among older adults in Bhutan.

Materials and Methods

Study Design

A cross-sectional survey was conducted with a sample of 337 Bhutanese elderly men and women, aged between 60 and 101 years. Data were collected between November 2014 and January 2015 by research assistants (RAs), and the first author. It was not feasible to recruit a true random sample of elderly people in Bhutan, especially given the topography of the country, dispersion of the rural villages and farms, and limited financial resources for this project. There has been no prior measurement of QOL among older people in Bhutan on which the calculation of the sample size could be based. Hence, the sample size was estimated based on the number of variables. The sampling sites were convenient locations in the communities of the 4 major commercial towns of Thimphu, Phuntsholing, Gelephu, and Samdrup Jongkhar. People aged 60 years and older, who could communicate in any of the 4 main languages (Dzongkha, English, Tshanglalo, and Lhotshamkha), had no obvious symptoms of cognitive or hearing impairment, and were not living in an institution were eligible for the study. Dzongkha is an official language of Bhutan mostly spoken by people in western areas of Bhutan. Tshanglalo is mainly spoken in the east and Lhotshamkha in the south. Participants were contacted by the research team mostly at stupas, temples, pagodas, and food markets within the study sites. The response rate for this study was 100%. No elderly person approached refused to participate.

Content of the Interview

We used the World Health Organization (WHO) QOL questionnaire to assess QOL, and a modified version of the WHO Adverse Childhood Experiences International Questionnaire and a

Stressful Life Events Checklist to assess adverse life experiences. A general health checklist was also applied to indicate physical and mental health conditions. A total of 20 different stressful life events (SLEs) were assessed in this study, and the cumulative SLE score was calculated based on the total number of adversities experienced by participants (range = 0-20). Psychological distress was measured with the Kessler 10 scale. The measurement of spirituality was derived from a survey instrument developed by the Centre for Bhutan studies.²² The 4 questions that assess spirituality are, "How spiritual do you consider yourself to be?" "How often do you recite prayers?" "How often do you practice meditation?" and "Do you consider Karma in the course of your daily life?" Each of the 4 spiritual items had response choices from 1 = *never* to 3 = *always*. The total score for the 4 items ranged from 4 (indicating low) to 12 (indicating a greater) degree of spirituality. Social connectedness was assessed with 4 items adopted from a scale developed by Lutterman et al²³ in the United States. Items included are, "I know people who will listen and understand me when I need to talk," "I am happy with the friendships I have," "I have people with whom I can do enjoyable things," and "I feel I belong in my community." All components of the interview had satisfactory internal consistency: chronic diseases (Cronbach's $\alpha = .72$), SLEs (Cronbach's $\alpha = .76$), and social connectedness (Cronbach's $\alpha = .80$); the exception was spirituality, where internal consistency was unsatisfactory (Cronbach's $\alpha = .50$). The Centre for Bhutan Studies measure was applied in this study because there was no alternative that has been developed in Bhutan.

Data Collection and Procedures

The principal investigator recruited and trained 6 final year nursing students (4 men and 2 women) from the Faculty of Nursing and Public Health, Khesar Gyalpo University of Medical Sciences of Bhutan. Data were collected between November 2014 and January 2015. All 6 RAs were well versed and fluent in English and the Dzongkha language. Two female data collectors were more fluent in Lhotshamkha, whereas the rest were more fluent in Tshanglalo. A 3-day workshop was conducted by the principal investigator to thoroughly train RAs on the aims and objectives of the study and use of the survey instruments. During data collection, every effort was made to ensure that respondents felt safe and comfortable. The data collection process for each interview included a brief session to explain the aims and objectives of the study, information to obtain consent, right to nonparticipation, maintenance of anonymity, and provision of a list of support services available in times of emotional distress caused as a result of participation in this study.

Ethical Review

The University Human Research Ethics Committee of the Queensland University of Technology (Approval Number 1300000561) and the Research Ethics Board of Health (Approval REBH/approval/2011/013) of the Ministry of Health, Bhutan, granted permission to conduct the study. Informed consent was obtained from all participants.

Data Analysis Strategies

Data were analyzed using SPSS (Statistical Package for Social Sciences) version 21 for windows. Bivariate analyses were conducted using correlation coefficients, the independent-sample *t*-test, and 1-way ANOVA, followed by multiple comparisons (Tukey's honest significant difference post hoc test). Multiple linear regression was performed to determine independent predictors for overall QOL. Variables with *P* values $\leq .1$ in the bivariate analysis were included in the model.

Results

A total of 337 elderly people consisting of 189 (56.1%) men and 148 (43.9%) women participated (see Table 1). The mean age was 71.5 years ranging between 60 to 101 years; 81.6% were between the ages of 60 and 79 years. Slightly more than half (53.1%) of the participants were married. Almost a quarter (24.6%) of them were married before 18 years of age, with early marriage more common among women than men (36.8% and 14.9%, respectively). About 10% of the participants became parents before they were 18 years old. Both age at first marriage and experience of first parenthood were significantly different between the genders ($P < .001$). Nearly one-third (31.2%) had ≥ 6 living children, and about three-quarters (76.4%) acknowledged having a good relationship with their children. Most of the participants were Buddhist (90.2%), and 88% had spent most of their childhood days in rural villages. The education level was very low overall, with 84.6% having no formal education. Nearly all the women (97%) had no formal education. Nearly half (46%) of the participants were currently employed. More than half (54.9%) of the elderly participants currently lived together in a household comprising 1 to 5 members (Table 1).

Bivariate Associations With WHO QOL Domains

Analysis of self-report data on overall QOL and its domains revealed that the social relationships domain of QOL had the highest mean score. The mean scores for the overall, psychological, and environmental-related QOL were significantly lower among women than men. Except for the environment-related domain, marital status had no significant correlation with overall QOL and the other domains. Among other demographic variables, lower mean scores for overall QOL and its domains were recorded among the respondents who perceived a poor relationship with their children. Except for the social relationships domain of QOL, elderly participants who spent most of their childhood days in rural villages, had no formal schooling, and spoke only 1 language reported significantly lower mean scores in the overall, physical, psychological, and environmental-related QOL domain. Within the elderly sample, current age was not found to be associated with QOL (Table 2).

Table 3 shows common self-reported health problems in descending order of prevalence. Health problems such as frequent back pain (67.1%), memory decline (61.4%), depression (46.4%), mobility impairment (45.7%), insomnia (42.4%), and pulmonary diseases (36.9%) were reported more often by women compared with men. As expected, a negative correlation was found between QOL and total number of health problems (see Table 3).

As indicated in Table 4, nearly half (46.9%, $n = 158$) of the participants self-rated their general health as either poor or fair, and their mean scores for overall QOL and its domains were lower than that of other respondents. Two-thirds (66%) of the participants had taken at least 1 medication over the preceding 4 weeks. Those on medication reported lower psychological, environmental-related, and overall QOL. Concerning adverse life experiences, a lower overall QOL score was associated with higher cumulative adversities during childhood and SLEs during adulthood. Psychological distress was negatively associated with overall QOL and the domains of QOL. The measure of spirituality was significantly but negatively correlated with physical, psychological, social relationships, and overall QOL. On the other hand, social connectedness was positively related with the overall QOL and all domains of QOL.

Multivariate analyses of predictors of overall QOL included total health problems, psychological distress, spirituality, and social connectedness, with the first 3 variables having negative associations. The regression analysis indicated that the final model as a whole accounted for 64% of variance in overall QOL. Total health problems (Table 5) had the highest β value ($\beta = -0.31$), followed by psychological distress ($\beta = -0.28$), and social connectedness ($\beta = 0.25$).

Table 1. Sociodemographic Characteristics of the Sample by Gender.

Sociodemographic Characteristics	Male, n (%)	Female, n (%)	Total, n (%)	P Value ^a
Age (mean $\pm$ SD = 71.5 $\pm$ 7.7)				.360
60-69 years	74 (39.2)	69 (46.6)	143 (42.4)	
70-79 years	77 (40.7)	55 (37.2)	132 (39.2)	
≥ 80 years	38 (20.1)	24 (16.2)	62 (18.4)	
Marital status				.006**
Married	114 (60.3)	65 (43.9)	179 (53.1)	
Not married	15 (7.9)	11 (7.4)	26 (7.8)	
Widowed	60 (31.7)	72 (48.6)	132 (39.2)	
Age at first marriage (n = 325)				.000***
<18 years	27 (14.9)	53 (36.8)	80 (24.6)	
18-20 years	55 (30.4)	42 (29.2)	97 (29.8)	
21-25 years	67 (37.0)	38 (26.4)	105 (32.3)	
>25 years	32 (17.7)	11 (7.6)	43 (13.2)	
Age when first child was born (n = 313)				.000***
<18 years	9 (5.3)	22 (15.4)	31 (9.9)	
18-20 years	34 (20.0)	47 (32.9)	81 (25.9)	
21-25 years	51 (30.0)	44 (30.8)	95 (30.4)	
>25 years	76 (44.7)	30 (21.0)	106 (33.9)	
Total children alive				.804
≤ 3	67 (35.4)	49 (33.1)	116 (34.4)	
4-5	64 (33.9)	52 (35.1)	116 (34.4)	
≥ 6	58 (30.7)	47 (31.8)	105 (31.2)	
Relationships with children (n = 331)				.207
Very good	147 (79.0)	106 (73.1)	253 (76.4)	
Not so good	39 (21.0)	39 (26.9)	78 (23.6)	
Religion				.581
Buddhism	169 (89.4)	135 (91.2)	304 (90.2)	
Not Buddhist	20 (10.6)	13 (8.8)	33 (9.8)	
Most of the childhood days spent				.000***
In a village	156 (82.5)	142 (95.9)	298 (88.4)	
Not in a village	33 (17.5)	6 (4.1)	39 (11.6)	
Education level				.000***
No formal schooling	142 (75.1)	143 (96.6)	285 (84.6)	
Some form of schooling	47 (24.9)	5 (3.4)	52 (15.4)	
Languages spoken				.000***
Speak 1 of 4 languages	83 (43.9)	105 (70.9)	188 (55.8)	
Speak 2 of 4 languages	59 (31.2)	28 (18.9)	87 (25.8)	
Speak 3 to all the 4 languages	47 (24.9)	15 (10.1)	62 (18.4)	
Work status in the past 12 months				.129
Employed	91 (48.1)	64 (43.2)	155 (46.0)	
Home maker	22 (11.6)	29 (19.6)	51 (15.1)	
Unemployed	76 (40.2)	55 (37.2)	131 (38.9)	
Total household members				.349
1-5 Family members living together	108 (57.1)	77 (52.0)	185 (54.9)	
≥ 6 Family members living together	81 (42.9)	71 (48.0)	152 (45.1)	

^a***P value <.01; **P value <.001.

Table 2. Bivariate Associations Between Sociodemographic Characteristics and QOL.^a

Demographic Characteristics	n (%)	Physical, Mean (SD)	Psychological, Mean (SD)	Social Relationship, Mean (SD)	Environmental, Mean (SD)	Overall QOL, Mean (SD)
Age of the participants						
60-69 years	143 (42.4)	51.80 (11.15)	61.82 (14.66)	71.10 (15.22)	66.22 (11.20)	89.12 (10.91)
70-79 years	132 (39.2)	51.44 (12.88)	61.13 (15.84)	71.61 (15.47)	67.59 (13.19)	89.11 (13.14)
≥80 years	62 (18.4)	50.24 (11.40)	60.44 (14.02)	70.11 (17.86)	65.37 (11.97)	88.03 (11.49)
Gender						
Male	189 (56.1)	52.44 (12.01)	63.08 (14.36)	71.38 (16.29)	68.66 (11.87)	90.53 (11.55)
Female	148 (43.9)	50.01 (11.61)	59.01 (15.52)*	70.79 (15.17)	63.97 (12.04)**	86.85 (12.07)*
Marital status						
Married ^a	179 (53.1)	51.61 (11.70)	62.60 (13.99)	72.59 (13.98)	68.31 (11.37)	90.15 (10.81)
Widowed	132 (39.2)	51.01 (11.89)	60.50 (16.18)	70.51 (16.94)	64.92 (12.82)	87.97 (13.00)
Never married	26 (7.8)	51.58 (13.42)	56.35 (14.66)	64.15 (19.73)	63.35 (12.47) ^{a,*}	85.27 (12.50)
Relationships with children						
Very good	253 (76.4)	52.18 (11.87)	63.65 (14.25)	73.36 (14.93)	68.87 (11.49)	90.97 (11.38)
Not so good	78 (23.6)	48.79 (11.72)*	53.78 (15.05)**	64.29 (15.75) ^{b,*}	59.56 (11.01)**	82.37 (11.02) ^{b,*}
Religion						
Buddhist	304 (90.2)	50.87 (11.96)	61.04 (14.77)	70.25 (15.97)	66.76 (12.07)	88.59 (11.96)
Non-Buddhist	33 (9.8)	56.06 (10.18)*	63.64 (16.92)	79.12 (11.44) ^{b,*}	65.15 (12.94)	91.94 (11.04)
Place most of the childhood days spent						
In a village	298 (88.4)	50.74 (11.82)	60.28 (14.74)	71.20 (15.66)	65.65 (11.89)	88.04 (11.79)
Not in a village	39 (11.6)	56.18 (11.39)*	69.08 (14.79)*	70.51 (16.93)	73.82 (11.86) ^{b,*}	95.59 (10.72) ^{b,*}
Level of education						
No formal schooling	285 (84.6)	50.40 (11.55)	60.20 (14.45)	70.84 (15.34)	65.50 (11.94)	87.88 (11.62)
Some form of schooling	52 (15.4)	56.71 (12.37) ^{b,*}	67.29 (16.58)*	72.69 (18.16)	72.62 (11.65) ^{b,*}	94.60 (11.95) ^{b,*}
Language spoken						
Speak 1 of 4 languages ^a	188 (55.8)	50.88 (11.50)	60.46 (14.82)	71.46 (15.23)	65.12 (11.88)	87.96 (11.43)
Speak 2 of 4 languages ^b	87 (25.8)	49.70 (12.38)	59.77 (15.47)	69.06 (16.67)	66.01 (12.35)	87.67 (12.96)
Speak 3 to all 4 languages	62 (18.4)	55.21 (11.68) ^{a,b,*}	65.97 (14.13) ^{a,b,*}	72.98 (16.13)	71.92 (11.36) ^{a,b,*}	93.56 (10.59) ^{a,b,*}
Employment status						
Employed ^a	155 (46.0)	56.74 (10.91)	67.05 (14.57)	76.10 (14.80)	70.30 (12.40) ^a	94.41 (10.60)
Home maker ^b	51 (15.1)	54.04 (10.63)	61.69 (15.16) ^a	75.57 (13.87)	65.16 (12.36) ^a	90.20 (11.03) ^a
Unemployed	131 (38.9)	43.99 (9.41) ^{a,b,*}	54.33 (12.35) ^{a,b,*}	63.50 (14.67) ^{a,b,*}	62.78 (10.43) ^{a,b,*}	81.92 (10.02) ^{a,b,*}
Total	337	51.37 (11.88)	61.29 (14.99)	71.12 (15.79)	66.60 (12.15)	88.92 (11.91)

Abbreviation: QOL, quality of life.

^{a,b}Reference category for the post hoc tests with Tukey's honest significant difference.**p* value <0.05; ***p* value <0.01.

The footnote cues 'b' and 'c' originally 'a' and 'b' are the reference group in which 'c' not indicated in the original is compared to.

Table 3. Prevalence of Self-reported Common Health Conditions by Gender.

Health Morbidities	Male, n (%)	Female, n (%)	Total, n (%)	P Value
Frequent back pain	114 (60.6)	112 (76.2)	226 (67.5)	.003 ^a
Memory decline	103 (55.4)	101 (69.2)	204 (61.4)	.010 ^a
Joint disease	108 (57.4)	93 (63.7)	201 (60.2)	.247
Arthritis	104 (56.2)	93 (65.0)	197 (60.1)	.106
Visual impairment	103 (55.4)	88 (59.9)	191 (57.4)	.411
High blood pressure	69 (49.3)	66 (56.9)	135 (52.7)	.225
Fatigue	87 (46.8)	83 (56.5)	170 (51.1)	.079
Depression	77 (41.2)	78 (53.1)	155 (46.4)	.031 ^a
Mobility impairment	74 (39.4)	79 (53.7)	153 (45.7)	.009 ^a
Insomnia	69 (36.7)	73 (49.7)	142 (42.4)	.017 ^a
Pulmonary disease	60 (32.3)	63 (42.9)	123 (36.9)	.047 ^a
Hearing problem	47 (25.3)	38 (25.9)	85 (25.5)	.904
Stomach ulcers	33 (19.5)	38 (27.1)	71 (23.0)	.113
Gout	26 (14.2)	28 (19.2)	54 (16.4)	.227
Musculoskeletal disorders	25 (13.4)	21 (14.4)	46 (13.8)	.790
Diabetes	21 (13.9)	13 (11.4)	34 (12.8)	.546
Skin problems	18 (9.6)	8 (5.4)	26 (7.8)	.161
Heart disease	11 (8.3)	5 (4.8)	16 (6.8)	.276
Liver problem	6 (4.8)	6 (5.9)	12 (5.3)	.717
Stroke	1 (0.6)	5 (4.0)	6 (2.2)	.093 ^b
Kidney disease	4 (2.8)	2 (1.8)	6 (2.4)	.702 ^b
Any type of cancer	1 (0.7)	3 (2.5)	4 (1.5)	.336 ^b

^aP value <.05.^bP value by Fisher's exact test.

Discussion

This study is the first of its kind in Bhutan to investigate the prevalence of common adverse life experiences, physical and mental health problems, and their influence on QOL and well-being among older adults. A number of demographic characteristics of elderly Bhutanese people were associated with QOL. Consistent with findings elsewhere, better QOL was linked with male gender, higher education, and employment.²⁴⁻²⁶ Although there is no directly comparable QOL study, research into happiness in Bhutan has indicated that men are happier than women.²⁷ In addition, the higher prevalence of disabilities and chronic conditions reported by women is consistent with the general finding of poorer self-reported health and subjective QOL.²⁸ The effect of education may arise because educated elderly people may have better knowledge of disease prevention and possibly adopt healthier lifestyles, leading to better QOL. Significantly, higher environmental-related QOL was reported by married older adults in this study, which may indicate that the environments in which married participants live are more stable and financially secure.

The influence of multilingual skills on QOL has been least documented internationally. In this study, a positive correlation was found between proficiency in multiple languages and QOL score. Speaking multiple languages can improve communication with health professionals and other civil servants and may foster employability and more extensive social relationships, which may improve QOL. Elderly participants who had spent most of their childhood days in rural villages also reported significantly lower QOL.

Table 4. Associations Between Health, Adverse Life Experiences, and QOL.

Health, ACEs, and SLEs	Prevalence, n (%)	Physical, Mean (SD)	Psychological, Mean (SD)	Social Relationship, Mean (SD)	Environmental, Mean (SD)	Overall QOL, Mean (SD)
Self-report general health condition						
Poor/Fair ^a	158 (46.9)	45.79 (10.94)	53.92 (14.04)	65.80 (15.67)	63.32 (11.79)	82.63 (10.99)
Good ^b	106 (31.5)	54.37 (10.07)	65.05 (12.97)	73.20 (15.68)	67.74 (11.39)	92.04 (9.76) ^a
Very good/Excellent	73 (21.7)	59.11 (10.39)^{ab}	71.79 (11.02)^{ab}	79.63 (11.30)^{ab}	72.05 (11.87)^{ab}	98.00 (8.61)^{ab}
Medication						
No	116 (34.4)	52.53 (12.37)	65.78 (13.64)	72.79 (15.39)	68.51 (11.24)	91.96 (11.15)
Yes	221 (65.6)	50.77 (11.60)	58.94 (15.15)	70.24 (15.96)	65.60 (12.51) [*]	87.32 (11.99) [*]
Total health problems						
0-2 ^a	63 (18.7)	58.48 (10.37)	74.06 (10.06)	78.86 (12.11)	75.27 (10.37)	99.08 (7.51)
3-5 ^b	92 (27.3)	55.96 (9.33)	66.26 (12.46) ^a	74.30 (16.13)	70.01 (11.62) ^a	93.18 (9.84) ^a
6-8 ^c	79 (23.4)	53.03 (11.20) ^a	61.51 (13.70) ^a	71.48 (13.40) ^a	66.28 (11.85) ^a	89.80 (10.52) ^a
9-11 ^c	76 (22.6)	41.96 (9.58)^{abc}	49.76 (11.24)^{abc}	63.59 (15.28)^{abc}	59.67 (8.39)^{abc}	79.20 (8.19)^{abc}
12-15	27 (8.0)	40.85 (6.55)^{abc}	46.41 (9.52)^{abc}	62.37 (12.29)^{abd}	55.19 (7.45)^{abc}	75.44 (7.07)^{abc}
Cumulative ACEs						
0-2 ^a	60 (17.8)	51.35 (10.67)	64.65 (14.79)	73.53 (16.10)	69.92 (13.46)	91.58 (12.08)
3 ^b	57 (16.9)	54.91 (13.46)	62.49 (16.61)	72.26 (17.93)	70.00 (11.93)	91.35 (12.97)
4	63 (18.7)	49.10 (10.37)	60.44 (13.70)	71.40 (14.50)	66.56 (11.57)	88.14 (11.22)
5-6	86 (25.5)	51.91 (10.55)	61.63 (13.98)	68.62 (14.40)	65.19 (10.52)	88.57 (10.50)
7-11	71 (21.1)	49.93 (13.74)	57.85 (15.70)	70.96 (15.60)	62.82 (12.38) ^{ab*}	85.82 (12.48) ^{a*}
Cumulative SLEs						
1-5 ^a	88 (26.1)	53.08 (11.53)	64.50 (14.05)	73.75 (16.27)	69.30 (12.90)	91.78 (11.49)
6-7 ^b	90 (26.7)	55.46 (12.14)	66.47 (13.70)	74.10 (15.82)	69.19 (12.64)	92.89 (11.47)
8-9 ^c	97 (28.9)	49.56 (11.16)^b	59.07 (15.60)	70.13 (14.71)	64.30 (11.54)^{ab}	86.80 (11.74)^{ab}
10-14	62 (18.4)	45.87 (10.58)^{ab}	52.71 (12.74)^{abc}	64.61 (14.91)^{ab*}	62.61 (9.40)^{ab}	82.39 (9.88)^{ab}

Abbreviations: QOL, quality of life; ACE-IQ, Adverse Childhood Experiences International Questionnaire; SLE, stressful life event.

^{ab,c}Reference category for post hoc tests with Tukey's honest significant difference.

^{*}P value < .05. Bold indicates significance at P value < .001.

^e 'e' originally 'd' indicate reference group as 'abc'.

The stand alone footnote cues refer to ^{*} whose p-value is considered less than 0.05.

Table 5. Multiple Regression Analysis Predicting Overall QOL (n = 337).^a

Variables	B	SE _B	β	t Value	P Value	VIF
Controlled factors						
Age	-0.002	0.054	-0.001	-0.040	.968	1.196
Gender	-0.393	0.853	-0.016	-0.460	.645	1.196
Marital status	1.558	0.450	0.125	3.458	.001**	1.223
Relationship with children	-0.021	0.550	-0.001	-0.039	.969	1.222
Place of childhood days	1.965	1.235	0.059	1.591	.112	1.291
Education level	0.722	0.368	0.072	1.964	.050*	1.257
Languages	1.452	0.576	0.095	2.519	.012*	1.335
Employment status	-3.508	0.500	-0.271	-7.012	.000***	1.409
Predictors						
Total health problems	-1.008	0.143	-0.311	-7.063	.000***	1.824
Psychological distress	-0.576	0.086	-0.276	-6.672	.000***	1.610
Spirituality	-1.386	0.351	-0.144	-3.952	.000***	1.253
Social connectedness	0.978	0.149	0.253	6.564	.000***	1.399
Constant	102.029	7.085		14.401	.000***	
Model	Model 1	Model 2	Model 4	Model 4	Final model 5	
R ² Change	0.31	0.53	0.60	0.64	0.66	
Adjusted R ²	0.30	0.52	0.59	0.63	0.64	
F change	F(8, 328) = 18.59	F(9, 327) = 41.48	F(10, 326) = 48.92	F(11, 325) = 52.46	F(12, 324) = 51.55	
P value	.000***	.000***	.000***	.000***	.000***	

Abbreviations: QOL, quality of life; B, unstandardized regression coefficient; SE_B, standard error of the coefficient; β, standard coefficient; VIF, variance inflation factor.
^a*P value < .05; **P value < .01; ***P value < .001.

The positive influence of social relationships on QOL and well-being has been well researched internationally.^{5,12,29} Participants with a higher level of social connectedness and a perceived good relationship with children reported better QOL. In Asian society, family support still plays a vital role in maintaining higher QOL for older adults.³⁰

As expected, a significant negative correlation was found between QOL and multiple health problems.^{5,31} This study also indicated negative relationships between adversity experienced during childhood and adult years and overall QOL.⁷⁻⁹ The influence of adverse childhood experiences may persist throughout life.³²

Unexpectedly, spirituality was negatively related with QOL in this study. The items used here were derived from the Gross National Happiness questionnaire used in Bhutan. Generally, the literature suggests a positive link between spirituality or religiosity and QOL.^{33,34} One possible explanation for the current finding is that the specific items in the measure may be more oriented toward extrinsic spirituality, where religious activities are perceived as a means to an end.¹⁹ Individuals who are intrinsically religious tend not to lead their religious lives to please others or gain status. Evidence suggests that they have better QOL.¹⁸ In contrast, individuals who are extrinsically motivated toward religion may practice religious rituals because of social pressures or perhaps for personal gain such as social esteem.³⁵ Bhutan is a spiritual country, and the influence of religiosity is highly visible in the everyday lives of its population, especially among older people. The finding is not conclusive but suggests the need for more research. Qualitative inquiry into the influence of spirituality-religion on QOL and well-being should be conducted. Further research should also revisit the spirituality items of the questionnaire and include both extrinsic and intrinsic components of spirituality.

Taken together, the findings of this study underline the need for health care providers to be mindful about the biopsychosocial and spiritual dimensions of health and QOL while assessing elderly people in clinical and community-based practices.

Conclusion and Implications

The present study has shown that QOL among elderly people was influenced by a complex variety of demographic characteristics, life experiences, physical and mental health conditions, spirituality, and social connectedness. As in many populations, social support and family relationship were very important for QOL among elderly people in Bhutan.

This study has several limitations. Assessment of stressful life experiences and adverse childhood experiences, in particular, heavily relied on retrospective recall, with many items referring to events that occurred 50 or more years earlier. The veracity of recall cannot be established in research of this nature. Furthermore, selection bias may have occurred because only elderly people who were available at the data collection sites were recruited. Elderly people who could not walk to the study sites may have offered important information that has not been captured in this study.

More research is needed to extend understanding of determinants of QOL of elderly people in Bhutan, especially as the society changes in the coming decades. Better QOL reported by men in this study also deserves further exploration. Qualitative inquiry with in-depth interviews may help uncover causes of gender disparity in health and well-being.

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