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राजेन्द्र गिरी



# Quality of Life Among Elderly People in Chitwan District, Nepal

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## Abstract

*As the world's elderly population grows, the Quality of Life (QoL) of the elderly becomes an emerging issue and plays a vital role in social development. The aim of this study was to assess the QoL of elderly people in the Chitwan district, Nepal. An analytical cross-sectional study design was employed to evaluate the Quality of Life (QoL) among the elderly residing in the 17 wards encompassing all municipalities and the metropolitan area. The sampling method employed was Probability Proportionate to Size (PPS), which facilitated the selection of 26 respondents from each of the chosen wards. In total, 442 elderly individuals were recruited from the community and surveyed using the WHOQoL-brief questionnaire. Descriptive and inferential statistics were used to analyze data in SPSS 20. Most of the elderly mentioned neutral status in both overall QoL (71%) and satisfied with their health status (48.4%). Elderly aged 60-69 years had higher QoL scores in the physical ( $p < 0.007$ ) and psychological ( $p < 0.014$ ) domains compared to other age groups. There was statistically significant association of physical domain with age group, marital status, religion, and presence of chronic illness. The psychological domain was associated with age group, education, religion, and presence of chronic illness. The social domain was associated with marital status, type of family, education, ethnicity, and presence of chronic illness. The environmental health domain was associated with sources of family income, marital status, education, different living arrangements, religion, ethnicity, and presence of chronic illness. All QoL domains showed a positive correlation ( $p < 0.01$ ) with each other as well as with the overall health and quality of life of elderly people. The overall health status and QoL of elderly people was neutral. As increasing the age of the elderly, almost domains of quality of life were declining. Living arrangement with family was associated with the environmental health domain. The absence of chronic illness was associated with all domains of the quality of life of the elderly.*

**Keywords:** Chitwan, Elderly, Quality of Life, Health Status, WHOQoL-brief

## 1. Introduction

Quality of life (QoL) is the multidimensional concept consisting of social, cognitive, affective and physical domains (Carabellese et al., 1993). The QoL of elderly people has become relevant with the demographic shift that has resulted in greying of population. There are indications that concepts and concerns related to QoL in older ages are different from the general population (Netuveli & Blane, 2008). QoL has been used as an indicator of how well a society meets the needs of its elderly or how a society or social institutions

support the needs of the elderly (Barca & Selbæk, 2011). It is the individual's perception of their life in the context of the culture and value system in which they live and in relation to their goals, expectations, standards and concerns (Vahedi, 2010). Every aspects of health status ie; physical activities, life style, satisfaction, mental state, balance diet, regular health checkup and caring by family together reflect the multidimensional nature of QoL in an individual (Mudey et al., 2017; Lim et al., 2005). QoL encompasses the broad term that includes the sense of wellbeing, satisfaction, happiness regardless of illness and dysfunctions and it has multidimensional characteristics which can be addressed as generalQoL and health related quality of life (Lima et al., 2009). QoL is used in a wide range of contexts, including the fields of international development, healthcare, and politics and it includes not only wealth and employment but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging and QoL factors are abstract, intangible, and subjective (Pinto-Neto & Conde, 2008). QoL is the measuring the best energy or force in an individual that used for successful compatibility of an individual with the existing challenges (Tajvar et al., 2008). In general, aging can probably increase the affinity to some diseases and also lead to occurrence of disability during the final years of life. In addition, the negative effects of aging on the ability to protect their independence will increase the need for assistance. The various problems and difficulties which occur physiologically during old age have some effect in decreasing the QoL in that period (Alipour F, Sajadi H, Foruzan A, Biglarian A, 2011).

Senior citizens (elderly population) in Nepal are defined by the Senior Citizens Acts 2063 (2006 AD) as "people who are 60 years and above" (Made et al., 1972). The Nepalese parliament enacted the Senior Citizens Act 2063 (2006) to make immediate provisions for the protection and social security of senior citizens, as well as to increase trust, respect, and good faith toward them by utilizing knowledge, skills, capability, and experiences inherent in them (Made et al., 1972). The population of senior citizens in Nepal is rapidly growing, with one of the main reasons being an increase in life expectancy. Nepal has earned the level of "aging country," with 6.5% of the total population being over 60 years old, a figure that has steadily increased over the years. It is estimated that elderly population is still more likely to increase rapidly in future. Most of the senior citizen QoL is not maintain properly. Some dimensions of QoL of urban and rural elderly are enjoying good QoL and some are very poor (Khanal, 2016). Many studies found that the several diseases especially non-communicable diseases (NCDs) are prevalent in elderly people, which are significantly affects the QoL of female elderly as compared to males. Since several socio-demographic and other determinants are responsible for the QoL of elderly (Shah et al., 2017). The Lancet warns that unless health systems find effective strategies to address the problems faced by an elderly, the growing burden of NCDs will greatly affect the QoL of elderly as people across the world live longer, soaring levels of chronic illness and diminished

wellbeing are poised to become a major global public health challenge (WHO, 2014). Rapid increase in the number of the aging population is a global phenomenon and there were 727 million elderly in 2020 and projected 1.5 billion in 2050 globally (United Nations Department Of Economic and Social Affairs, 2002). While aging is much faster and projected that more than 80% of them will be low and middle income countries (Litomericky, 1990). Since, main challenge of general health in the 20<sup>th</sup> century was enhancing life expectancy and in 21<sup>st</sup> century is 'better quality of life (Seraji et al., 2018). Evidence has been found that there were higher prevalence of depression (Mellor et al., 2008), psychological morbidity especially female elderly, low literacy level and economical dependency (Datta et al., 2013) were found among older who are receiving care in residential facilities or in their own homes and is associated with reduced QoL. While most of the elderly has poor QoL and almost female elderly were sufferer (Chalise, 2018). In context of Nepal, still there was more than fifty percent of elderly had poor QoL (Sharma et al., 2021). This study aims to assess the quality of life among elderly people and exploring the QoL domain wise relationship with other various variables.

## 2. Methodology

### 2.1 Study design and study area

A community based analytical cross-sectional study was done among 60 years and above elderly people in Chitwan district of Nepal. Chitwan District is one of Nepal's 77 districts and is located in the southwestern part of Bagmati Province, Bharatpur is the headquarter of this district and forth largest and fastest urbanizing city of Nepal. It has a total area of 2,238.39 km<sup>2</sup> (864.25 sq.mi.) and a population of 7,19,859 people (3,51,789 males and 3,68,070 females) according to the 2021 census. The data was gathered from five municipalities and one metropolitan area, with the exception of a rural municipality in Chitwan.

### 2.2 Study population, sample size and sampling

The study population comprised elderly individuals aged 60 years and above residing in the Chitwan district of Nepal.

The sample size was calculated by 
$$n' = \frac{(z_{\alpha/2} + z_{\beta})^2}{\left( \delta - \frac{|p - p_o|}{\sqrt{p(1-p)}} \right)^2} \quad \dots (1)$$

where,  $Z_{\alpha/2}$  is value of z-statistics from standard normal distribution at 5% significance level which is 1.96 at  $\alpha/2=0.025$ .  $Z_{\beta}$  is value of z-statistics from standard normal distribution at 80% power of test which is 0.84, the rest all component are effect size, which is consider as 0.20 for small sample size (Ryan, 2013). The adjustment process involved two factors: a multiplier to address a 10% non-response rate and another factor to account for the design effect, which was assumed to be 2 in this case.

Therefore, 
$$n = n' \times 2 \times \frac{1}{(1-0.10)} \quad \dots (2)$$

As a result of applying equations (1) and (2), the total calculated sample size amounts to 436.

However, because of the implementation of cluster sampling, the ultimate sample size was 442. The Probability Proportional to Size (PPS) sampling technique was employed for this study. The researcher organized clusters of each ward within five municipalities and one metropolitan area. Within these clusters, a total of 17 wards were chosen using the PPS method. From each of these selected wards, 26 elderly individuals were then chosen as the sample respondents.

### **2.3 Research instrument**

A self-constructed structured questionnaire was used for sociodemographic related characteristics, and a validated standard (WHOQOL-BREF) questionnaire (Nepali version) was used to assess the quality of life of elderly people. The WHOQOL-BREF questionnaire has 26 items in WHOQOL-100 version. The WHOQOL-BREF contains 2 items from the overall QOL and general health and 24 items of satisfaction that are divided into 4 domains (Physical health, Psychological, Social relationship and Environment). Each item rated on a 5-point Likert scale questionnaire (Nepali version) was used

### **2.4 Validity and reliability of instrument**

To assure the reliability, respondent anonymity was carefully maintained, and data were personally collected by the researcher during individual visits by face to face interview method. For validity, the validated standard (WHOQOL-BREF) questionnaire (Nepali version) was used to assess the quality of life of elderly people.

### **2.5 Data collection, processing and analysis**

In each cluster, a total of 26 samples were gathered utilizing a systematic approach. The procedure involved designating the center of the ward and selecting the nearest household as the starting point. Subsequently, the researcher proceeded in a clockwise direction, systematically selecting households until the desired 26 samples were obtained. This uniform procedure was consistently applied across all selected wards. Collected data was organized and checked for completeness and accuracy. Manual coding and organizing was done before data entry. Data was entered into IBM SPSS 20 version. The data was analyzed by using descriptive and inferential statistics. In the descriptive statistics, the researcher calculated frequency, mean and SD in univariate analysis. In bivariate analysis, the researcher used t- test, ANOVA test, and correlation.

### **2.6 Ethical consideration**

Ethical permission was taken from Shree Medical and Technical College Institutional Review Committee (SMTC-IRC-20210117-74), permission was taken from respective municipalities and verbal informed consent was taken from respondents before collecting data.

## **3. Operational definition**

**3.1 Quality of life:** Quality of life is the degree to which an elderly is healthy, comfortable, and able to enjoy their life events which are determined based on the status of physical health, psychological health, social relationships, and environmental health domains of QoL.



**3.2 Elderly people:** In this study, the elderly was defined as people aged 60 years and above. It has been divided into three age groups:

Group 1: 60-69 years

Group 2: 70-79 years and

Group 3: 80 years and above

**3.3 Education:** In this study, the educational status was measured based on no education (those elderly who did not enrolled in school either formal or informally but may be able to read or write), primary (elderly who had enrolled school up to grade 5), secondary (elderly who had completed primary level but not completed to grade of 10) and higher secondary (those elderly who had completed secondary level but may or may not completed the proficiency or higher level of education).

**3.4 Family type:** It was categorized as:

*Nuclear family:* elderly who were living with their spouse only

*Joint family:* elderly who were living with their one son and daughter in-law and their children.

*Extended family:* elderly who were living with their more than one son/daughter in-law and their children

## 4. Results

In this study more than fifty percent of respondents were between the ages of 60 and 69, and more than half (51.98%) were female while, mean age was  $70.6 \pm 7.7$  years. More than eighty three percent of male and about sixty percent of female were married and they also had spouse and more than forty percent of female widowed respondents compared to male respondents (15.8%). Likewise, about seventy percent of male and seventy two percent of female belongs to joint family. Whereas most of the male (76.3%) and female (79.3%) were living with their son and daughter-in-law.

Similarly, about ninety percent of female and more than half of male had no any educational qualification (not enrolled school formally or informally but can read and write). Whereas, 46% of male and 34.4% of females were currently involve in agriculture. Hence, about half (49.8%) of male and forty percent of female respondent's major household income was agriculture and only 6.5% males and 4.8% females were getting old age allowance provided by Nepal government. Likewise, 31.6% of male elderly monthly household income was NPR. 10,000-20,000 and 27.8% female elderly had up to the NPR 20,000.

More than seventy percent of male and female respondents practiced Hinduism followed by more than forty five percent of both male and females were from Brahmin/Chhetri ethnic group. Likewise, most (68.8%) of male and 57.7% of female respondents were migrated in current place from previous home places. Whereas 26% of male and 38.8% of female respondent's family members migrated to different countries except India for different purposes.

Similarly, about half of both male and female respondents were suffering from any type

of chronic disease. Hence, respondents were suffering from multiple chronic diseases. Most of male (65.7%) and female (50.9%) respondents were suffering from high blood pressure [Table 1].

**Table 1: Socio-demographic and chronic illness related results (n=442)**

Age group in years	Male		Female		Total	
	n	%	n	%	n	%
60-69	106	49.3	118	51.98	224	50.67
70-79	71	33	71	31.27	142	32.12
80+	38	17.67	38	16.74	76	17.19
<b>Mean age</b>	<b>70.76±7.8</b>		<b>70.48±7.6</b>		<b>70.6±7.7</b>	
<b>Marital status</b>						
Never married	2	0.9	-	-	2	0.45
Married	179	83.3	134	59	313	70.8
Widowed	34	15.8	93	41	127	28.7
<b>Family type</b>						
Nuclear	60	27.9	56	24.7	116	26.2
Joint	149	69.3	165	72.7	314	71
Extended	6	2.8	6	2.6	12	2.7
<b>Living arrangement</b>						
Alone	-	-	12	5.3	12	2.7
Spouse only	47	21.9	24	10.6	71	16.1
Son/daughter-in-law	164	76.3	180	79.3	344	77.8
Daughter/son-in-law	2	0.9	9	4	11	2.5
Other relatives	2	0.9	2	0.9	4	0.9
<b>Education</b>						
No education	116	53.9	203	89.4	319	72.1
Primary level	53	24.6	19	8.4	72	16.2
Secondary level	34	15.8	5	2.2	39	8.8
Higher secondary	12	5.5	-	-	12	2.7
<b>Current occupation</b>						
Agriculture	99	46	78	34.4	177	40
Service/salaried	18	8.4	7	3.1	25	5.7
Wage labour	7	3.3	6	2.6	13	2.9
Business	14	6.5	7	3.1	21	4.8
Household work	14	6.5	57	25.1	71	16.1
Not able to work	51	23.7	71	31.3	122	27.6
Pension	12	5.6	1	0.4	13	2.9
<b>Major source of household income</b>						
Agriculture	107	49.8	98	41.9	202	45.7
Service/salaried	28	13	35	15.4	63	14.3
Wage labour	9	4.2	8	3.5	17	3.8
Business	26	12.1	36	15.9	62	14
Foreign employment	25	11.6	34	15	59	13.3
Pension	14	6.5	8	3.5	22	5

Old age allowance	6	2.8	11	4.8	17	3.8
<b>Monthly household income (in NPR)</b>						
< 10,000	56	26	63	27.8	119	26.9
10,000-20,000	68	31.6	62	27.3	130	29.4
20,001-30,000	45	20.9	39	17.2	84	19.0
30,001-40,000	17	7.9	28	12.3	45	10.2
40,001-50,000	19	8.8	21	9.3	40	9.0
50,001+	10	4.7	14	6.2	24	5.4
<b>Religion</b>						
Hindu	157	73	163	71.8	320	72.3
Buddhists	54	25.1	53	23.3	107	24.2
Others (Muslim & Christian)	4	1.9	11	4.8	15	3.3
<b>Caste/ethnicity</b>						
Brahman/Chhetri	97	45.1	105	46.3	202	45.7
Janajati	88	40.9	88	38.8	176	39.8
Others (Dalit, Muslim and Madhesi)	30	14	34	15	64	14.4
<b>Oneself migration status</b>						
Migrant	148	68.8	131	57.7	279	63.1
Non-migrant	67	31.2	96	42.3	163	36.9
<b>Family member migration status</b>						
No migration	123	57.2	116	51.1	239	54.1
Within same district	23	10.7	21	9.3	44	10
Another district	9	4.2	11	4.8	20	4.5
Migrated to India	4	1.9	9	4	13	2.9
Other country	56	26	70	30.8	126	28.5
<b>Presence of any chronic illness</b>						
Yes	108	50.2	117	51.5	225	50.9
No	107	49.8	110	48.5	217	49.1
<b>Type of chronic illness*</b>						
Musculoskeletal problem	15	13.9	25	21.9	40	18
Respiratory problems	13	12	21	18.4	34	15.3
High blood pressure	71	65.7	58	50.9	129	58.1
Heart diseases	6	5.6	2	1.8	8	3.6
GI problems	9	8.3	9	7.9	18	8.1
High blood sugar	25	21.3	26	22.8	51	23
Thyroid problems	3	2.8	7	6.1	10	4.5
Neurological problems	5	4.6	2	1.8	7	3.2
Others (Eye, ear, skin problems and BEP)	4	3.7	4	3.5	8	3.6

\*Note: Percentages of chronic illness are calculated as multiple responses.

In this study, age group 60-69 years had significantly higher QoL scores in the physical ( $p < 0.007$ ) and psychological ( $p < 0.014$ ) domains than the other age groups and these two domains score of gender related QoL were remain equal. Though QoL of female

elderly had lower scores in the social and environmental health domains, there was no statistically significant between entire domains and gender. Likewise, married elderly reported statistically significantly higher score ( $p < 0.001$ ) with only social domain of QoL. Similarly, higher the education had higher quality of life where the elderly with higher secondary and above educational level had higher score in the entire domains of QoL. Hence, there were statistically significant association of educational level with all of domains except physical health domain. There was no significant relationship between the sex of respondents and all domains of QoL but there was a significant relationship of age group with physical ( $p < 0.007$ ) and psychological ( $p < 0.014$ ) domains. Except psychological domain, all domains of QoL were statistically associated with marital status of elderly.

Likewise, family type was significant association with only social relationship ( $p < 0.006$ ) domain and all domains except physical were statistically significant association with the educational status of respondents. In terms of sources of family income, only environmental health domain of QoL was significant association. However social relationship ( $p < 0.002$ ) and environmental health ( $p < 0.019$ ) domains of QoL were found that the statistically significant with ethnicity/caste of elderly. Whereas, all domains of QoL were statistically associated with co-morbidity status of elderly [Table 2].

**Table 2: Average transformed score of WHOQOL-BREF according to some selected variables by its four domains**

Selected variables	Transformed score of WHOQOL-BREF				Total (n)
	Physical	Psychological	Social	Environmental	
<b>Sex</b>					
Male	52.65	47.63	57.51	59.47	215
Female	52.48	47.89	55.77	57.59	227
<i>P-value</i>	<i>0.852</i>	<i>0.776</i>	<i>0.110</i>	<i>0.072</i>	
<b>Age group</b>					
60-69	53.83	48.75	57.51	59.10	224
70-79	51.90	47.61	55.54	58.25	142
80+	50.03	45.11	56.00	57.24	76
<i>P-value</i>	<i>0.007**</i>	<i>0.014**</i>	<i>0.237</i>	<i>0.418</i>	
<b>Marital status</b>					
Married	53.17	48.04	58.34	59.18	313
Widowed/Never married	51.07	47.08	52.44	56.88	129
<i>P-value</i>	<i>0.036*</i>	<i>0.332</i>	<i>0.001*</i>	<i>0.045*</i>	
<b>Type of family</b>					
Nuclear	53.18	47.03	54.13	58.95	116
Joint/extended	52.60	48.02	57.51	58.35	326
<i>P-value</i>	<i>0.579</i>	<i>0.342</i>	<i>0.006*</i>	<i>0.634</i>	

<b>Education</b>					
No education	51.94	46.96	55.36	57.30	319
Primary level	53.28	49.51	59.36	60.11	72
Secondary level	55.38	50.05	60.03	63.54	39
Higher level	55.50	51.17	62.58	64.75	12
<i>P-value</i>	<i>0.101</i>	<i>0.035**</i>	<i>0.002**</i>	<i>0.001**</i>	
<b>Major source of household income</b>					
Agriculture	52.48	47.77	57.28	57.20	202
Service	53.21	48.57	54.92	61.98	63
Business	53.10	46.56	56.60	58.98	62
Foreign employment	53.54	48.98	58.08	61.68	49
Other	50.50	46.86	54.61	55.45	56
<i>P-value</i>	<i>0.453</i>	<i>0.570</i>	<i>0.309</i>	<i>0.001**</i>	
<b>Religion</b>					
Hindu	53.25	47.91	56.20	59.28	320
Bouddha	50.25	46.57	57.95	55.57	107
Other (Islam, Christian)	54.33	53.00	55.93	63.07	226
<i>P-value</i>	<i>0.015**</i>	<i>0.041**</i>	<i>0.379</i>	<i>0.032**</i>	
<b>Caste/ethnicity</b>					
Brahman/Chhetri	53.67	48.58	57.27	60.11	202
Janajati	51.73	47.52	57.54	57.20	176
Other (Muslim, Madhesi)	51.33	45.83	52.02	57.03	64
<i>P-value</i>	<i>0.080</i>	<i>0.117</i>	<i>0.002**</i>	<i>0.019**</i>	
<b>Presence of chronic illness</b>					
Yes	51.48	46.10	54.94	57.35	225
No	53.68	49.48	58.35	59.71	217
<i>P-value</i>	<i>0.016*</i>	<i>0.001*</i>	<i>0.002*</i>	<i>0.023*</i>	
<b>Living arrangement</b>					
Alone	52.25	51.08	53.08	52.75	12
Spouse only	52.13	48.54	56.97	59.11	71
Son/daughter in-law	52.44	47.33	56.74	58.58	344
Daughter/son-in-law	56.36	57.73	58.55	62.73	11
Other relatives	61.25	50.00	45.25	47.00	4
<i>P-value</i>	<i>0.268</i>	<i>0.309</i>	<i>0.236</i>	<i>0.048**</i>	

*p-value significant at  $\leq 0.05$  level, \* Independent t-test, \*\* ANOVA test*

Present study found that the highest score was for the environmental domain, which had a mean of 58.5 and a standard deviation of 10.99, and the lowest was for the

psychological domain, which had a mean of 47.7 and a standard deviation of 9.48 [Table 3].

**Table 3: Average transformed score of WHOQOL-BREF of quality of life**

Four domains of QoL	Average transformed score of WHOQOL-BREF	Standard deviation
Physical domain	52.56	9.61
Psychological domain	47.76	9.48
Social relationship domain	56.62	11.40
Environmental domain	58.51	10.99

This study revealed that there was a positive correlation of all QoL domains with overall QoL and overall health of elderly people, they have the statistically significant association ( $p < 0.01$ ). [Table 4]

**Table 4: Relationship between transformed scores of WHOQOL-BREF among overall and four domains of quality of life**

Overall QoL, health QoL domains	Overall QoL	Overall health	Physical domain	Psychological domain	Social relation domain	Environment domain
Overall QoL	1					
Overall health	0.446**	1				
Physical domain	0.293**	0.440**	1			
Psychological domain	0.376**	0.446**	0.490**	1		
Social relation domain	0.210**	0.223**	0.399**	0.406**	1	
Environment domain	0.297**	0.416**	0.523**	0.499**	0.458**	1

*\*\*Correlation is significant at the 0.01 level (2-tailed).*

### 5. Discussion

In this study 49.3% of male and 51.9% of female respondents falls under the age group of 60-69 years and the mean age was  $70.6 \pm 7.7$  years. While, all domains of QoL were statistically associated with age group. This result supported by the study conducted in Ambala District, India (Mittal et al., 2019), south central Nepal (Sharma et al., 2021), remote area of Nepal (Acharya Samadarshi et al., 2022) and West Bengal, India (Dasgupta et al., 2018). In terms of marital status, 83.3% of male and 59% of female respondents were married and they had spouse. There was also 41% of female widowed compared to male respondents (15.8%) which results supported by a study conducted in south-central part of Nepal reported as 58% of married male elderly (Sharma et al., 2021) and 58.9% were female married elderly (Raj Joshi et al., 2018). Another similar type of study conducted in Thailand supported that the 62.9% of respondents were married, 37.1% were widowed (Yodmai et al., 2018). Regarding family types of elderly, 69.3% of male and 72.7% of female elderly belongs to joint family and 76.3% of male

and 79.3% of female elderly were living with their son and daughter in-law. This finding supports the study conducted in west Bengal, India that 95% of elderly lived in joint family (Dasgupta et al., 2018), and another study conducted in Ambala district, India found that 61% of participants were belongs to joint families and 75% of participants lived with their spouses (Mittal et al., 2019). More over this result showed that, 89.4% of female and 53.9% of male respondents were illiterate (cannot read and write). In this context, a cross-sectional study in rural Nepal yielded that 75.9% of elderly were illiterate (Raj Joshi et al., 2018), while, another study concluded that 66.6% were illiterate and majority were female (Sowmiya& Nagarani, 2017), a study of India also found majority (63.9%) respondents were illiterate (Qadri et al., 2013) and an another study found 38.8% were illiterate with half of them were female (Ghimire et al., 2018). This study found that 46% of male and 34.4% of female elderly were currently involve in agriculture and this was the major household income for male (49.8%) and female (41.9%). This finding contradicts the study results conducted in rural Kerala, India as 90% of elderly did not do anything (Thadathil et al., 2015a) and another of Ambala district of Haryana, India found 44% of elderly were unemployed and 22.5% were involved in daily wages (Mittal et al., 2019). Similarly, business was the primary source of household income (Mittal et al., 2019) and another study concluded that nearly 18% of elderly had no source of income and 40% were dependent on family members (Sowmiya& Nagarani, 2017). In terms of monthly household income, majority (31.6%) of male elderly monthly household income was NPR. 10,000-20,000 and 27.8% female elderly had up to the NPR 20,000. This finding also supported by the study conducted in urban and peri-urban areas, Yangon Region, Myanmar (Zin et al., 2020) and the community-based cross-sectional study conducted in Thailand found 80.4% of respondents' monthly income was less than \$30 USD (Yodmai et al., 2018) and 33.1% of respondents had sufficient income for 1 year (Acharya Samadarshi et al., 2022). In terms of religion, 73% of male and 71.8% of female elderly followed Hinduism followed by 45.1% of male and 46.3% of female elderly from Brahmin/Chhetri ethnic group. Moreover, this study finding was supported by studies conducted in Morang, Nepal (Shrestha et al., 2018) and Northern India (Sapkota et al., 2021) found that, 90% of respondents followed Hinduism. While, 55% of respondents were from Brahmin/Chhetri ethnic group (Shrestha et al., 2018) as well as a study held in central Nepal (Sapkota et al., 2021).

This study also found that more than fifty percent of both male and female elderly were suffering from any type of chronic disease especially high blood pressure among both male (65.7%) and female (50.9%) elderly. The finding is consistent with some previous studies of rural and urban India (Mittal et al., 2019), rural Nepal (Raj Joshi et al., 2018), and West Bengal, India (Dasgupta et al., 2018). Present study results showed that physical and psychological domains of QoL were statistically associated with 60-69 years age group of elderly which is supported by the study findings of Kerala, India

(Thadathil et al., 2015a), Kavre, Nepal (Risal et al., 2020), and study of remote Nepal (Acharya Samadarshi et al., 2022). Likewise, except psychological domain of QoL with marital status and except physical domain all domains with educational level were statistically associated and which are relevant with the study findings of Kerala, India (Risal et al., 2020). Likewise, sources of family income was statistically associated with environmental health domain but it contradicted the study of India (Thadathil et al., 2015b). In this study family type was significant association with only social relationship ( $p=0.006$ ) domain which was relevant with the study conducted in India (Thadathil et al., 2015b). However social relationship ( $p=0.002$ ) and environmental health ( $p=0.019$ ) domains of QoL were statistically significant with ethnicity/caste of elderly. Whereas, all domains of QoL were statistically associated with co-morbidity status of elderly which was supported by a study of Kerala, India (Thadathil et al., 2015a) and Kavre district, Nepal (Risal et al., 2020). This study also found that the highest score for the environmental ( $58.5\pm 10.99$ ) and lowest for the psychological domain ( $47.7\pm 9.48$ ) which was supported by studies of Kerala (Thadathil et al., 2015b) and West Bengal of India (Mudey et al., 2011). Present study also found that there was a positive correlation of all QoL domains with overall QoL and overall health of elderly people, they have the statistically significant association ( $p<0.01$ ). A similar type of study was conducted in rural Nepal found that there was positive correlation of elderly perception on QoL with educational status and land/property ownership but there was negatively correlated with age group, gender, marital status, household size, living arrangement and physical health status (Raj Joshi et al., 2018).

## 6. Conclusion

The study determined that individuals aged 60-69 exhibited notably higher Quality of Life (QoL) scores in both the physical and psychological domains. Moreover, married elderly individuals demonstrated significantly higher scores in the social dimension of QoL. Elderly with higher secondary and above educational levels have higher QoL. As a result, there was a significant association between educational level with all domains of QoL except for physical health. Marital status exhibited a significant association with all QoL domains. Notably, the social relationship domain of QoL was exclusively accompanying to family type.

The investigation also revealed that solely the environmental health domain exhibited a statistically significant association with various sources of family income. Nevertheless, both the social relationship and environmental health domains of QoL demonstrated statistically significant connections with the ethnicity/caste characteristics of the elderly population. The QoL displayed statistical significance regarding the presence of any form of co-morbid chronic diseases. Furthermore, a positive correlation among all QoL, and the general health status of the elderly individuals which was statistically significant.

## Conflict of Interest

The authors declare that they have no conflicts of interest.



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