Chapter 8

ASSESSMENT OF QUALITY OF LIFE OF THE ELDERLY USING WHOQOL-BREF

8.1. Introduction

In this chapter an attempt has been made to assess the quality of life of the elderly based on the WHOQOL-BREF questionnaire. Quality of life is a multi-dimensional concept as it not only encompasses the individual's health, psycho-social wellbeing but also reflects on social relations, personal belief, living environment, independence and financial resources. An important area of concern for the elderly is health because of increasing life expectancy brought by medical sciences, the need of the hour is to provide the elderly with better health care and hygiene, healthier lifestyle, sufficient food. To gain an insight into health conditions of this vulnerable population, WHO has taken an initiative to measure the quality of life (QOL). WHO has developed the WHOQOL-BREF which is an international measure of quality of life assessment with a broadening focus on health, disability/impairment, activities of daily living (ADL), life satisfaction, mental state, social and environmental factors. World Health Organization (WHO) defines quality of life (QOL) "*as individual's perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectation, standards and concerns*" (World Health Organization, 1996; pp.5). It is a broad ranging concept 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 (World Health Organization 1997, pp.1).

There are many tools/ instruments or techniques to study and measure the quality of life but the best known technique has been developed by WHO which is the WHOQOL-100

(original version) and its shorter version is WHOQOL-BREF. The tool original version WHOQOL-100 was developed by 15 centers around the world in their own languages. The WHOQOL-100 consisted of 100 items or questions of different domains which have been restricted to 26 items where the respondent's burden is minimized and important detail is only taken into consideration and has been termed as WHOQOL-BREF. The WHOQOL-BREF is the modified and shorter version of WHOQOL-100. The WHOQOL-BREF focusses on elderly's own views about their wellbeing comprising of health and overall quality of life.

8.2. Material and Method

8.2.1. Setting and Study Design

This is a questionnaire based cross-sectional study conducted in the Darjeeling hills comprising of Darjeeling Sadar and Kurseong subdivisions in Darjeeling district and the newly carved Kalimpong district (erstwhile subdivision of Darjeeling district). The universe/sample population of the study includes the persons aged 60 years and above. Stratified random sampling and purposive sampling methods have been used for the selection of 300 elderly respondents (150 males and 150 females). The respondents' consents (n=300) were obtained beforehand and the survey was administered through WHOQOL-BREF questionnaire after briefing the purpose of the study. The respondents were assured well before the survey that their identities should be kept confidential.

8.2.2. Structure of the WHOQOL-BREF

The WHOQOL-BREF questionnaire is used in the present study. The WHOQOL-BREF questionnaire is a self-report tool based on Likert type scale which contains 2 items from the overall QOL and General health and 24 items that measure the following 4 broad domains: Physical health, Psychological health, Social relationships and Environment. Each domain is comprised of multiple questions that are centered on their life or how they perceive them - satisfactory or unsatisfactory.

The physical health domain (DOM 1) consists of 7 items which includes questions pertaining to ability to perform activities of daily living (ADL), sleep, energy, extent to

which physical pain prevents from doing any work, amount of medical treatment needed, mobility and satisfaction with capacity for work. The psychological domain (DOM 2) consists of 6 items which includes questions on the extent to which they enjoy life, find life to be meaningful, ability to concentrate, accepting the transformation of bodily image, satisfaction with oneself and the frequency of negative feelings. Social relationship domain (DOM 3) includes 3 items which are questions related to satisfaction of personal relationships, sex life and social support. The fourth domain (DOM 4) is of environment which includes 8 items pertaining to safety and security, satisfaction or healthiness of physical environment, availability of enough financial resources i.e. money, availability of day-to-day information, opportunity of leisure activities, satisfaction to conditions of living place, transport and health services. All the above questions of the four domains of the WHOQOL-BREF contain 5-point Likert scale response scales from *'very poor to very good'*, *'very dissatisfied to very satisfied'*, *'not at all to an extreme amount'* and *'never to always'*.

8.2.3. WHOQOL-BREF Scoring

Each item of the WHOQOL-BREF is rated on a 1-5 response Likert Scale which makes it possible to derive the 4 domain score. Apart from the four domains there are two items which are asked separately: i.e. an individual's overall quality of life and the second question about their overall health. The responses on the Likert scale of each of the domains are added to derive the raw score. The raw scores are converted to a transformed score (on a 0-100 scale) where 100 is the highest and 0 is the lowest. The four domain scores are scaled in a positive direction with higher scores indicating a higher quality of life (WHOQOL-BREF, 1997; pp.33). For example, if someone who scores 62 on the physical health has a higher perceived quality of life in relation to physical health than someone who scores 20. This indicates that higher transformed scores on each of the domain indicates higher quality of life in that particular area or domain.

8.2.4. Data Analysis

The data collected have been entered and analyzed with the SPSS software, version 19. The data are represented using descriptive statistics like frequencies, percentages,

means and standard deviations (SD). Cronbach's alpha is used to examine the internal consistency. It is a method to test the reliability of the WHOQOL-BREF and the value of over 0.70 were deemed acceptable. Pearson correlation coefficient was used to determine the relationship between the variables of the 4 domains of the WHOQOL-BREF. To compare difference between the mean scores of different domains of WHOQOL-BREF paired t-test was used.

8.3. Result and Discussion

For cross-cultural comparison of quality of life, the best known tool for measuring it is the WHOQOL-BREF. Old age is a mixture of emotions which takes place in all spheres of physical, behavioural, relationships and environmental domains. Therefore, quality of life assessment judges the overall quality of life as a whole of the elderly favourably. It measures a person's life satisfaction and wellbeing which stems from various needs and expectation. It senses the satisfaction and dissatisfaction in various domains of the life of the elderly.

The data collected on age, sex, education level, marital status, dependency status, suffering from ailments are considered as independent variables whereas the four domains of WHOQOL-BREF questionnaire are considered as dependent variables. Sex is divided into two categories: male and female; age is categorized into three categories: 60-69, 70-79 and 80 and above. Marital status is divided for the said questionnaire into two categories: single/divorced and married. Education level consist of literate and illiterate categories. Likewise, dependency status includes dependent and independent. Lastly suffering from ailment is categorized into two categories, yes and no.

In total 300 elderly respondents have actively taken part in the study and filled out the WHOQOL-BREF questionnaire. The characteristics of the study population are shown in Table 8.1. The mean age of the male elderly (N=150) is 69.31 and the mean age of the female elderly (N=150) is 68.84. More than half (57.3%) of the respondents are in the age-group of 60-69 years. Less than two-fifth (30.7%) respondents belong to age-group of 70-79 years and 12 percent of the respondents are above 80 years and are 'old-old'.

According to gender, a little more than half of the total male respondents (53.3 %) are in the 60-69 years of age-group whereas the proportion of female respondents is much higher (61.3%) in the same age-group. In the 70-79 years of age-group the proportion of male respondents is more (34.7%) than the female respondents (26.7%). The proportion of the 'old-old' (80 and above) for both male and female respondents is same (Table 3.1. Chapter-3). Marital status of the respondents' shows that 53.3 percent are married (Table 8.1). About 60.7 percent of the elderly respondents are literate in the study area. With respect to dependency status 50.7 percent of the elderly are independent and 49.3 percent are dependent. 92.7 percent of the elderly are suffering from ailments and only 7.3 percent have reported no ailments (Table 8.1).

Table 8.1. Characteristics of Sampled Population (n=300)

Characteristics		*N*	*%*
Sex	Male	150	50
	Female	150	50
Age-group	60-69	172	57.3
	70-79	92	30.7
	80 and above	36	12
Education level	Literate	182	60.7
	Illiterate	118	39.3
Marital Status	Married	160	53.3
	Single/Divorced	140	46.7
Dependency Status	Independent	152	50.7
	Dependent	148	49.3
Suffering from ailments	Yes	278	92.7
	No	22	7.3

Computed from fieldwork, 2016-17

In this study Cronbach's alpha or coefficient alpha was applied which is a measure of internal consistency that is related to a set of items. In the WHOQOL-BREF Cronbach's Alpha is used to measure the scale of reliability. To examine the internal consistency of the WHOQOL-BREF questionnaire (26 items) Cronbach's Alpha has been used and the Cronbach's Alpha is good (0.785) for all the 26 questions. In case of Cronbach's Alpha, the general rule of thumb is that a value of >0.70 is considered good and adequate.

The Cronbach's Alpha value for the other 4 domains are: Physical health domain (0.737), Psychological (0.654), Social Relationship (0.710), and Environment (0.781).

Table 8.2 presents the summary statistics and Cronbach's Alpha for the WHOQOL-BREF domain and as is observed from the table that except for psychological (Cronbach's Alpha= 65%) all the other domains have recorded the value of above the recommended level of 70 percent. The Cronbach's Alpha is used commonly in questionnaire made up of Likert type scales to assess the internal consistency of the questionnaire.

Table 8.2. Summary of the WHOQOL-BREF domains

Domain	*Mean (SD)*	*Cronbach's Alpha*
Physical health	55.15(23.33)	0.737
Psychological	57.71(21.04)	0.654
Social Relationship	54.27(21.59)	0.71
Environment	47.97(14.984)	0.781

Computed from fieldwork, 2016-17

For measuring the internal consistency of the WHOQOL-BREF Scale Cronbach's Alpha was used. The reliability analysis indicates that a lower value is scored by the psychological domain (0.654) and this value is not unexpected. As the psychological domain consists of items based on cognitive judgments of life satisfaction involving positive and negative emotions, this result of reliability analysis is accepted. However other than this domain the other three domains have an acceptable internal consistency.

As seen in Table 8.2. among the different domains, the highest and the lowest mean are found for psychological (DOM 1=57.71) and environment (DOM 4= 47.97). Mean score for environment domain (DOM 4) is comparatively lower than physical, psychological and environmental domains. In this study, among the four domains of WHOQOL-BREF, the highest mean satisfaction rating has been found for DOM 2 (psychological mean=57.71) implying high satisfaction with life being meaningful, high self-esteem, less negative feelings. Moreover, the lowest mean score is seen in DOM 4 (environment, mean=47.97), indicating not very good financial resources, availability of information, and most importantly access to health services and transport facilities in the hill area. The mean scores of physical health domain, psychological and social relationship domain have been found to be comparable.

The comparison of the WHOQOL-BREF mean scores in four domains according to sex, marital status, education level, dependency status and prevalence of any ailment are presented separately in Table 8.3. Mean scores is higher in males than females in DOM 1, DOM 3, DOM 4 except DOM 2. The elderly males in the study area have higher mean scores in physical domain (DOM 1) whereas the female elderly have higher mean scores in psychological domain (DOM 2). There is a significant difference in the mean score of physical domain (t=3.020, p=0.003) with respect to sex.

Table 8.3. Socio-demographic variables compared to domains

Variables	*Physical Health*	*Psychological*	*Social Relationship*	*Environment*
Sex				
Male	59.16±22.686	57.61±21.989	55.11±21.68	50.71±14.104
Female	51.13±23.349	57.8±20.135	53.43±21.551	45.23±15.380
t value	3.02	-0.077	0.673	3.212
p value	0.003	0.939	0.501	0.001
Marital status				
Married	58.66±22.435	62.49±19.51	61.84±20.306	50.73±14.758
Single/ Divorced	51.11±23.755	52.24±21.473	45.62±19.753	44.82±14.667
t value	2.838	4.329	6.991	3.467
p value	0.005	0.001	0.001	0.001
Literacy level				
Literate	59.67±22.475	61.56±21.843	58.97±20.927	51.49±14.57
Illiterate	48.17±22.992	51.76±18.311	47.03±20.664	42.54±14.014
t value	4.291	4.038	4.854	5.273
p value	0.001	0.001	0.001	0.001
Dependency Status				
Independent	61.55±22.363	60.99±22.22	56.49±22.942	51.71±14.371
Dependent	48.57±22.529	54.34±19.27	51.99±19.941	44.13±14.67
t value	5.005	2.766	1.811	4.522
p value	0.001	0.006	0.071	0.001
Suffering from ailment				
No	82.23±10.226	66.86±21.665	56.18±19.975	52.77±16.263
Yes	53.00±22.732	56.98±20.867	54.12±21.745.430	47.59±14.843
t value	5.975	2.132	0.43	1.566
p value	0.001	0.034	0.667	0.119

Computed from fieldwork, 2016-17

The mean scores of marital status of the elderly are significantly different in the social domain (t= 6.991, p=0.001). The married elderly respondents have higher mean score than the unmarried/divorced in all the 4 domains (Table 8.3.)

The result also shows that there is a significant difference in mean scores of physical and social domain between literate and illiterate elderly (t=4.2091, p=0.001 and t=4.854 and p=0.001). The literate elderly respondents have higher mean scores compared to the illiterate elderly.

It was found in the study area that the financially independent elderly respondents have higher mean score in all the domains compared to the dependent elderly. The result shows significant difference in the mean scores of physical domain between the independent and dependent elderly (t=5.975, p=0.001) (Table 8.3.).

A high significant difference has been found in the mean score in physical domain between literate and illiterate elderly (t= 4.291, p=0.001). The mean scores for literate elderly is high in all the domains compared to the illiterate elderly in the study area (Table 8.3.).

As seen in Table 8.3 the mean score of satisfaction rating in all the 4 domains is higher in males than females but this difference was only statistically significant in DOM 1(Physical health) and DOM 4 (Environmental). Some may be associated with lower physical health factors in women like decrease in energy, sleep, pain, discomfort and reduced working capacity. Similarly, for environmental factors it may be for the lack of financial resources.

In this study a paired sample t-test has been done in order to compare the significant difference between mean scores of different domain ratings. It is used to detect a difference between the means of two dependent variables. As seen in table 8.4, significant differences have been found between all four different domains of WHOQOL-BREF except pair 2 (DOM 1- DOM 3). As table 8.4 shows the most difference in the mean scores is observed between DOM 2- DOM 4.

Table 8.4. Paired t-test for the four domains of WHOQOL-BREF

	Paired differences				*t-test*	*df*	*Sig. (2-tailed)*
			95% Confidence Interval of the Difference				
	Mean	Standard Deviation	Lower	Upper			
Pair 1 DOM1-DOM2	-2.56	21.31	-4.981	-0.139	-2.081	299	0.038
Pair 2 DOM1-DOM3	0.873	23.491	-1.796	3.542	0.644	299	0.52
Pair 3 DOM1-DOM4	7.177	22.284	4.645	9.709	5.578	299	0.001
Pair 4 DOM2-DOM3	3.433	17.916	1.398	5.469	3.319	299	0.001
Pair 5 DOM2-DOM4	9.737	19.599	7.51	11.963	8.605	299	0.001
Pair 6 DOM3-DOM4	6.303	21.593	3.85	8.757	5.056	299	0.001

Computed from fieldwork, 2016-17

Table 8.5 is presented to indicate the relationship between scores obtained from different domains of WHOQOL-BREF. As observed, there is a strong correlation between all domains. All correlations are statistically significant.

Table 8.5. Correlation Coefficient in four domains of WHOQOL-BREF

	DOM 1	*DOM 2*	*DOM 3*	*DOM 4*
DOM1				
Correlation Coefficient	1	0.543	0.455	0.389
Sig. (2 tailed)		<.001	<.001	<.001
DOM 2				
Correlation Coefficient		1	0.647	0.449
Sig. (2 tailed)			<.001	<.001
DOM 3				
Correlation Coefficient			1	0.347
Sig. (2 tailed)				<.001
DOM 4				
Correlation Coefficient				1
Sig. (2 tailed)				

Computed from fieldwork, 2016-17

The mean values of the facets of QOL of the elderly has been presented in Table 8.6. The scores of the facet are 0-1(very poor), 1-2 (poor), 2-3 (neither poor nor good), 3-4

(good) and 4-5 (very good). Most of the mean values of the facet fall in the range of 3-4 i.e. good. Maximum mean score is observed for accepting bodily appearance and minimum score is observed for health service: accessibility.

Table 8.6. Mean value of the facets of QOL in the Elderly Respondents

Facets	*Mean ± SD*
General QOL	3.16 ± 1.127
General Health	3.01 ± 1.324
Physical pain and discomfort	2.79 ± 1.362
Need medical treatment	3.35 ± 1.151
Enjoy life	2.64 ± 1.087
Life meaningful	3.75 ± 1.366
Able to concentrate	2.92 ± 1.310
Physical safety in daily life	3.39 ± 1.365
Healthy physical environment	3.11 ± 1.346
Have enough money	3.01 ± 1.174
Accept bodily appearance	4.07 ± 1.094
Financial resources	2.57 ± 1.226
Availability of information	2.59 ± 1.116
Opportunity for leisure	3.27 ± 1.325
Able to get around	3.25 ± 1.209
Satisfied with sleep	3.48 ± 1.389
Satisfied with ADL	3.79 ± 1.197
Working capacity	3.03 ± 1.406
Satisfied with yourself/ self esteem	3.31 ± 1.109
Satisfied with personal relationship	3.49 ± 1.212
Satisfied with sex life	2.88 ± 1.021
Support from friends/ social support	3.14 ± 1.284
Conditions of living place or home environment	3.61 ± 1.221
Access to health services	2.04 ± 1.092
Transport facilities	2.27 ± 1.360
Negative feelings	2.84 ± 1.183

Computed from fieldwork, 2016-17

The frequency responses for the 26 items/facets of WHOQOL-BREF have been rated on a 5-point Likert scale (Table 8.7). Items inquire from *'very poor'*, *'poor'*, *'neither poor nor good'*, *'good'* and *'very good'* across the domains and facets. The overall general QOL for the 300 elderly respondents shows that 35 percent responded experiencing 'neither poor nor good' QOL followed by 29 percent experiencing *'good'*

QOL. In response to general health, majority (30%) of the respondents experience '*poor'* QOL. The responses of the items of the WHOQOL-BREF are shown in table 8.7.

Table 8.7. Frequency responses (%) for items of the WHOQOL-BREF (n=300)

Domains and Facets	*1 Very Poor QOL*	*2*	*3*	*4*	*5 Very Good QOL*
General QOL	10.3	14.7	35	29	11
General Health	13.3	30	15.3	24.7	16.7
PHYSICAL HEALTH					
Physical pain and discomfort	14.7	16.7	24.7	20.7	23.3
Need medical treatment	20.7	23	31	21	4.3
Have enough money	14.3	16.3	32.7	27.7	9
Able to get around	12.7	9.7	33	29	15.7
Satisfied with sleep	12	17	12.7	27.7	30.7
Satisfied with ADL	7	10	12.3	38.7	32
Working capacity	16.7	26.7	14	22.3	20.3
PSYCHOLOGICAL					
Enjoy life	16	31.3	33	15.3	5.3
Life meaningful	12.3	6.3	15.3	25.7	40.3
Able to concentrate	17.3	22.7	26.3	18.3	15.3
Accept bodily appearance	4.3	5.3	14.3	31	45
Satisfied with yourself/ self esteem	9.3	10.3	33	35	12.3
Negative feelings	10.7	16.3	34	24.3	14.7
SOCIAL RELATIONSHIPS					
Satisfied with personal relationship	8.3	13	23	33	22.7
Satisfied with sex life	14.7	9.7	53.7	17	5
Support from friends/ social support	15.3	13.7	28.7	26	16.3
ENVIRONMENT					
Physical safety in daily life	15.3	10.3	19.3	30.3	24.7
Healthy physical environment	15.3	19.3	24.3	21	20
Financial resources	21	32	26.7	9.7	10.7
Availability of information	17.3	33	28.3	15.7	5.7
Opportunity for leisure	14.3	12.3	27.7	23.3	22.3
Conditions of living place or home environment	8	12	17.7	36	26.3
Access to health services	39.3	33	13.7	12	2
Transport facilities	44	17	13.3	19.3	6.3

Computed from fieldwork, 2016-17

With respect to overall QOL (Table 8.8), around 29 percent of the elderly have felt their QOL is '*good'*, around 11 percent have felt their QOL is '*very good'*. 14.7 percent of the elderly have reported '*poor'* QOL.

Table 8.8. Distribution of the Elderly Respondents according to their perception of QOL

QOL	*Number of Elderly (%)*
Very poor	31(10.3)
Poor	44(14.7)
Neither poor nor good	105(35)
Good	87(29)
Very good	33(11)

Computed from fieldwork, 2016-17

With respect to health 30 percent of the elderly respondents are '*dissatisfied'* with their health, around 24.7 percent are '*satisfied'* with their health, while 13.3 percent of the elderly are '*very dissatisfied'* and 16.7 percent are '*very satisfied'* with their health (Table 8.9).

Table 8.9. Distribution of the Elderly Respondents according to their Satisfaction with Health

Satisfaction with Health	*Number of Elderly (%)*
Very dissatisfied	40(13.3)
Dissatisfied	90(30)
Neither satisfied nor dissatisfied	46(15.3)
Satisfied	74(24.7)
Very satisfied	50(16.7)

Computed from fieldwork, 2016-17

Table 8.10 presents the high and low QOL of the elderly in Darjeeling based on the 4 domains. The raw scores after being converted to transform scores on a (0-100 scale) have been divided into 2 groups of 0-50 score representing low QOL and 51-100 score representing high QOL. As a whole the figures reflect that 60 percent of the elderly respondents have reported high QOL (>50 scores) according to WHOQOL-BREF of 24

facets and 40 percent of the elderly have reported low QOL (<50 scores) (Table 8.10). This shows that out of 300 respondents in the study area majority are experiencing high QOL.

Table 8.10. 24 facets of WHOQOL-BREF

QOL	*Number of Elderly (%)*
High QOL (>50 score)	180 (60)
Low QOL(<50 score)	120 (40)

Computed from fieldwork, 2016-17

Within the domain of physical health majority (57.7%) (Table 8.11) of the respondents have high QOL (>50). Within the psychological and social relationship domain majority of the respondents fall on either side of the scale (>50; high QOL). But with environment majority (65.3%) of the elderly people are on low QOL (<50).

Table 8.11. High and Low QOL of the four domains

Domains	*Low QOL (<50)*		*High QOL(>50)*	
	Frequency	*%*	*Frequency*	*%*
Physical health	127	42.3	173	57.7
Psychological	109	36.3	191	63.7
Social Relationship	135	45	165	55
Environment	196	65.3	104	34.7

Computed from fieldwork, 2016-17

8.4. Physical Health Related Quality of Life

The bivariate analysis of physical health related quality of life with selected background characteristics has been presented in Table 8.12. It can be said that good and healthy ageing with better health is what everyone strives for. If an elderly experiences good health with advancing age, satisfaction will be added to his/her life enhancing the quality of life. Life seems to appear better.

It is clearly evident that with increasing age the health related quality of life declines. It can be seen in the table given below (Table 8.12) that 33.1 percent of the elderly of 60-69 age- group report low QOL, but with increase in age 45.7 percent of the elderly in the 70-79 age- group report low QOL, further 77.8 percent of the elderly in the 80 plus

age-group report the same. It is obvious that increase in age has an impact on the health as well as quality of life. Chi-square testifies the result as significant.

Table 8.12. Bivariate Distribution of Proportion of the Elderly Respondents with Physical Health Related QOL and Selected Background Characteristics of the Respondents

Background Characteristics	*Categories*	*Low QOL (%)*	*High QOL (%)*	*P-value*
Age-group	60-69	33.1	66.9	*0.001
	70-79	45.7	54.3	
	80 and above	77.8	22.2	
Sex	Male	34	66	*0.003
	Female	50.7	49.3	
Marital status	Married	32.5	67.5	*0.001
	Unmarried/Divorcee	53.6	46.4	
Educational level	Literate	33.5	66.5	*0.001
	Illiterate	55.9	44.1	
Dependency status	Independent	30.3	69.7	*0.001
	Dependent	54.7	45.3	
Suffering from ailment	Yes	45.7	54.3	*0.001
	No	0	100	

**p value less than 0.05 is considered as significant*
Computed from fieldwork, 2016-17

Majority (66.6%) of the male elderly have revealed high QOL compared to the female elderly. The female elderly have expressed their dissatisfaction with health. This is due to the fact that women suffer more from chronic disease like thyroid, hearing problem, diabetes, Alzheimer's disease, asthma, cold and cough, arthritis, gastric, poor sight, and blood pressure in comparison to male elderly. The result here is significant. In marital status, the unmarried/divorced have low QOL in comparison to the married. Almost 53.6 percent of the unmarried/single have low QOL. Married elderly have high QOL with health as the data show that 67.5 percent of married elderly experience satisfaction in terms of health. The result is significant (Table 8.12).

It is understood that the higher the educational level, the better gets their health related QOL. Education has some impact on the physical health and as can be observed from table 8.12 that 66.5 percent of the literate elderly have high QOL related to physical health. The result here is significant. Economic independence has a major role on

physical health of the elderly. It is observed from the data that majority (69.7%) of the independent elderly have higher QOL as they maintain their health expenses out of their own available resources without being dependent on others, and chi-square testifies the result as significant. Those elderly who are dependent have lower QOL (54.7 %) (Table 8.12). In respect of physical health related QOL of those who are suffering from ailment, 45.7 percent report low QOL and the result is significant.

8.5. Psychological Related Quality of Life

Behaviour, activities and attitudes of the elderly are associated with the psychological process. As maintaining good physical health is necessary so is good mental functioning. Elderly are confronted with challenges and one who can pass through it positively follows the path to successful ageing. The bivariate analysis of psychological related QOL with selected background characteristics has been presented in Table 8.13. From the table it is seen that in the age-group of 60-69 majority (66.9 %) have expressed good quality of life and this figure is higher than those who are experiencing low QOL of the same group. With increase in age majority of the older people experience low QOL as is seen for 80 plus age- group of people where 52.8 percent experience low QOL and 47.2 percent experience high QOL (Table 8.13). Chi-square testifies the result as insignificant. This may be due to the fact that as one gains age it becomes difficult to comprehend the inner feelings of life such as satisfaction, happiness, depression, and autonomy. Several unfavourable changes like reduced health status, reduced social status, loss of important role or poor social interaction bring an imbalance in the life of the elderly leading to poor or low QOL. With respect to sex, majority of the male and female elderly have expressed high QOL in relation to the psychological related QOL. The result is however insignificant. Marital status of the elderly creates an impact on the life of the elderly. Married elderly have high QOL as the data reflects that 73.1 percent of them experience high QOL on psychological domain and only 26.9 percent of the married elderly have low QOL. With respect to the unmarried/ divorced it is also seen that more than half (52.9%) of the elderly have high QOL (Table 8.13). The married elderly couples enjoy the divine period of being with each other as they age. But they have to face the most difficult situation when they go through the death of their

life partner which creates a psychological distress. This is the most stressful event in the life of the elderly and hence reduces their positive emotions and in turn affects the QOL. The unmarried/ divorced elderly experience low QOL because there is no loved ones to take care of him/ her. The result of the bivariate analysis is significant.

Education level affects the psychological well-being of the elderly and is related to the QOL. The higher the level of education, the greater is their ability to cope with adversity or any changes in life. Table 8.13 shows that more than half (52.5%) of the illiterate elderly have high QOL. Here the result is statistically significant. On the other side 70.9 percent of the literate elderly have high QOL (Table 8.13). Closely related to education level is the economic independence. An educated person has to be less dependent on others, be it for availing any information or for financial resources.

Table 8.13. Bivariate Distribution of Proportion of the Elderly Respondents with Psychological Related QOL and Selected Background Characteristics of the Respondents

Background Characteristics	*Categories*	*Low QOL (%)*	*High QOL (%)*	*P-value*
Age-group	60-69	33.1	66.9	0.083
	70-79	35.9	64.1	
	80 and above	52.8	47.2	
Sex	Male	37.3	62.7	0.719
	Female	35..3	64.7	
Marital status	Married	26.9	73.1	*0.001
	Unmarried/Divorcee	47.1	52.9	
Educational level	Literate	29.1	70.9	*0.001
	Illiterate	47.5	52.5	
Dependency status	Independent	30.9	69.1	*0.048
	Dependent	41.9	58.1	
Suffering from ailment	Yes	37.8	62.2	0.066
	No	18.2	81.8	

**p value less than 0.05 is considered as significant*
Computed from fieldwork, 2016-17

41.9 percent of the dependent elderly have low QOL because of economic instability and as a result dissatisfaction arises which reduces their life satisfaction and lowers their QOL (Table 8.13). 69.1 percent of the independent elderly have expressed no worries regarding financial income and are contended with their financial resources which leads them to enjoy their life without any worry, stress, and tension which often makes them

satisfied with whatever little or more they have. The result of the bivariate analysis is significant. With reference to suffering from ailment, 37.8 percent have reported to have suffered from one disease or another and are found to have low QOL. 62.2 percent of the elderly believe to have high QOL irrespective of any ailment they are suffering from (Table 8.13). The result of the bivariate analysis is however insignificant. This suggests strong mental health and good psychological functioning irrespective of any changes in physical health. The elderly therefore, are able to cope with any physical health adversity with a positive outlook.

8.6. Social relationship Related Quality of Life

Social relationship is an important determinant in understanding the QOL. As the society is changing rapidly with the evolution of rational thinking and hegemony of globalized culture it is impertinent to comprehend the relationship that exists between individuals of different cohorts or generations. Also the selected background characteristics such as age group, sex, marital status and more have a profound impact on the social relationship of an elderly and contributes to the QOL. The bivariate analysis has been presented in Table 8.14. The elderly in the age-group of 60-69 years have been found to have better social relationship in terms of personal or support from friends or relatives and majority (58.1%) have reported to have high QOL. The reason for this can be due to the active life of the elderly either as the head of the household or satisfaction from personal relation. With advancing age, the ‘old-old’ group or the 80 plus group suggests that because of frailty or ill health the active life is retarded and hence majority (63.9%) of them have reported low QOL (Table 8.14). Their quality of life in terms of family relationship or friend support decreases and hence have lower satisfaction and wellbeing. The result of the bivariate analysis is insignificant. The male and female elderly have reported to have high QOL in terms of social relationship.

As far as the marital status of the elderly is concerned, the married elderly have a high QOL (68.8%) in terms of social environment and 60.7 percent of the unmarried/divorced elderly have poor QOL in the study area (Table 8.14). Married elderly have the support of their spouse and therefore the members in the family are

reinforced to stay together and the elders live harmoniously gaining care and respect from the younger generation. The couples continue to play productive roles in any event of the family and are revered and respected. With divorced, unmarried or widowed elderly, the death of spouse or staying away from their spouse due to marital conflict makes them vulnerable culminating into poor emotional adjustment with the family members. Family members often fail to realize the stress or pain the elderly undergoes and a period of emptiness within them brings intense disinterest in household activities, reduces their active life, and summing up with occasional anger contributes to low QOL. The result of the bivariate analysis is however significant.

Education is also significantly related with the social relationship related QOL. High level of the social relationship related QOL is associated with literate or educated elderly whereas illiteracy has been associated with low QOL of social relationship. The result of the bivariate analysis is statistically significant. Table 8.14 shows that 66.5 percent of the literate elderly have high QOL whereas only 33.5 percent of the literate elderly experience low QOL. Same goes for the illiterate elderly where 62.7 percent of them experience low QOL.

Elderly who are independent on economic terms gain high QOL. Here in the study area 62.5 percent of the elderly have high QOL and satisfaction as they are financially independent. Financial independence of the elderly increases life satisfaction and self-esteem. Their personal relationship also seems to be better than the dependent ones and are revered and approached for any family decision. Only 37.5 percent of the independent elderly experience low QOL which may be attributed to factors like retirement, reduced health status or other environmental factors. The result is also statistically significant. Suffering from ailment prevents elderly from attaining high QOL as is observed from Table 8.14 that the result is statistically insignificant.

Table 8.14. Bivariate Distribution of Proportion of the Elderly Respondents with Social Relationship Related QOL and Selected Background Characteristics of the Respondents

Background Characteristics	*Categories*	*Low QOL (%)*	*High QOL (%)*	*P-value*
Age-group	60-69	41.9	58.1	0.051
	70-79	43.5	56.5	
	80 and above	63.9	36.1	
Sex	Male	40	60	0.082
	Female	50	50	
Marital status	Married	31.3	68.8	*0.001
	Unmarried/Divorcee	60.7	39.3	
Educational level	Literate	33.5	66.5	*0.001
	Illiterate	62.7	37.3	
Dependency status	Independent	37.5	62.5	*0.008
	Dependent	52.7	47.3	
Suffering from ailment	Yes	46.4	53.6	0.083
	No	27.3	72.7	

**p value less than 0.05 is considered as significant*
Computed from fieldwork, 2016-17

8.7. Environment Related Quality of Life

This section seeks to explain the environmental facets of the aged and their quality of life with the selected background characteristics. It consists of the home environment, safety and security in daily life, availability of information, opportunity for leisure, accessibility of health service and more. The bivariate analysis of environment related QOL with that of selected background characteristics has been presented in Table 8.15. Within environment domain correlated with age-group it is observed that majority of the elderly have opined or mentioned low QOL and the number of elderly respondents goes on increasing as one's age advances. Very minimal amount of response of attaining high QOL in all the three age-groups has been observed. The chi-square result is statistically insignificant. Also majority of the male (57.3 %) and female (73.3%) have low QOL with regards to environment domain and the bivariate analysis proves the result as significant. This reflects their dissatisfaction with the environment domain like deteriorating environmental conditions such as unsafe living place or polluted areas which inflict their fitness by increasing expenditure on health care. Less accessibility to

health services in the hill areas also reduces their QOL. A major problem in the hill area is availability of transport service which is very limited in the rural areas and the elderly here resort to walking.

Marital status of the elderly with reference to the environmental domain reflects that a large proportion of elderly whether married or unmarried/ divorcee/ widowed report low QOL. Chi-square testifies the result as significant. Similarly, majority of the literate and illiterate elderly have stated low QOL. The independent elderly have reported low QOL (53.3 %) as unsafe environment reduces their independence, self-esteem and more importantly their quality of life (Table 8.15). Irrespective of suffering from any ailments or not, majority of them have low QOL in terms of environment.

Table 8.15. Bivariate Distribution of Proportion of the Elderly Respondents with Environment Related QOL and Selected Background Characteristics of the Respondents

Background Characteristics	*Categories*	*Low QOL (%)*	*High QOL (%)*	*P-value*
Age-group	60-69	61.6	38.4	0.231
	70-79	68.5	31.5	
	80 and above	75	25	
Sex	Male	57.3	42.7	*0.004
	Female	73.3	26.7	
Marital status	Married	59.4	40.6	*0.02
	Unmarried/Divorcee	72.1	27.9	
Educational level	Literate	56	44	*0.001
	Illiterate	79.7	20.3	
Dependency status	Independent	53.3	46.7	*0.001
	Dependent	77.7	22.3	
Suffering from ailment	Yes	66.5	33.5	0.116
	No	50	50	

**p value less than 0.05 is considered as significant*
Computed from fieldwork, 2016-17

8.8. Conclusion

The findings from this study confirm that the WHOQOL-BREF questionnaire is a reliable instrument for measuring the quality of life of the elderly in the Darjeeling hills. Quality of life score is high among the majority of elderly (60%), while environment

domain of QOL score has been found to be low. For improvement in environmental domain it very much entails to control and modify environmental factors to increase the elderly's autonomy, well-being and societal participation. Increasing recreational activities like spending quality time as leisure period will help building self-image, satisfaction level and QOL. Spreading awareness with regard to physical environmental changes in the hill areas like deforestation, pollution, etc. can help improving the QOL. Accessibility of better health services for the elderly can also improve the QOL.

As far as the age-groups are concerned, the younger age-group has shown high QOL in all domains except for the environmental domain in comparison to the older age-group, and the increasing age has adverse impact on the QOL. Married elderly have high level of QOL in all domains except environmental domain. Similarly, elderly with higher level of schooling have better perceptions of their QOL in physical health, psychological and social relationship domain. This justifies that among the domains, psychological and environmental domains have higher and lower mean scores respectively. Additionally, other significant factors having an effect on quality of life, as revealed through this analysis are: less financial resources, non-availability of information, less access to health service and poor transport facilities.

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