

CHAPTER VIII

QUALITY OF LIFE AND HIV INFECTION

8. 1. INTRODUCTION

This chapter examines the impact of HIV infection on the quality of life among people living with HIV. Quality of life is the term which is popularly used to convey an overall sense of wellbeing and includes aspects such as happiness and satisfaction with life as a whole. The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. It follows that measurement of health must not only include estimates of the frequency and severity of diseases, but also well-being and quality of life. This is particularly true for people living with HIV/AIDS because of the chronic and debilitating nature of the illness, stigma, and a high rise of premature death. Impact of HIV infection on the quality of life among PLHIV is devastating and needs to be examined with due care to estimate the burden of the disease. HIV infection, as being a multifaceted issue, affects different dimensions of life of an individual, which leads to economic deprivation, moral hazard, social isolation and psychological distress.

8. 2. QUALITY OF LIFE

Quality of life is a multi-dimensional concept the definition and assessment of which remains contentious. To a layman, quality of life is defined as the availability of food, clothing, shelter, education facilities, health care, legal aid, security, good environment conditions, good quality of air and safe drinking water. The items listed lead to better health conditions, welfare, and freedom of choice and basic liberties, which enriches the concept of ‘Standard of Living’. However, there was no consensus on the definition of quality of life among researchers.

Several researchers described quality of life as a “fighting spirit” associated with longer survival time for individuals (Friedland J, Renwick R, McColl M, Lesserman J, Perkins DO, and Evans DL). Quality of life relates both to adequacy of material circumstances and to personal feelings about these circumstances. It includes “overall subjective feelings of well being that are closely related to morale, happiness and satisfaction” (Mc Dowell M, Newell). Further as health is generally cited as one of the

most important determinants of overall quality of life, it has been suggested that quality of life may be uniquely affected by a specific disease process such as HIV infection. There is lack of clarity in defining quality of life and concomitant operational difficulties in it. But there is urgency in evaluating the quality of life in an HIV infected individual.

WHO defines quality of life *“as an individual’s perceptions of their position in life in the context of their culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”*. This definition of quality of life encapsulates the different dimensions of life of an individual, which are integral parts of life tenure of an individual.

This chapter attempts to reflect the impact of HIV infection on different facets of life with the help of WHOQoL HIV BREF as an instrument to quantify the normative concept of quality of life. WHO has developed WHOQoL HIV instrument which comprises 120 questions, pertaining to different facets of life. WHOQoL HIV BREF is the shorten version of WHOQoL-100. WHOQoL HIV BREF contains five extra items specific to people living with HIV. It contains thirty one items, which are categorized into six domains depicting different dimensions of life.

8. 3. SIX DOMAINS OF WHOQOL HIV BREF

1. Physical Domain measures pain and discomfort, energy and fatigue and sleep and rest.
2. Psychological Domain measures positive feelings, thinking, learning, memory and concentration, bodily image and appearance, self esteem and negative feelings.
3. Level of Independence Domain measures mobility, daily life activities, dependence on medication and treatments and work capacity.
4. Social Relationship Domain includes personal relationships, social support and sexual activities.
5. Environment Domain measures physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities, and physical environment (pollution, noise, traffic, climate, and transport).

6. Spiritual, Religious and Personal Beliefs Domain measures forgiveness and blame, concerns about the future and death and dying.

WHOQoL HIV BREF is a well versed instrument to capture the various dimensions with respect to life satisfaction of an individual; here satisfaction connotes material, social, psychological, spiritual, personal and economic well being. Individual items are rated on a LIKERT SCALE, where one indicates low negative self perception and five indicates high, positive self perception. Higher score of a domain or facet denotes higher QoL. Some facets (pain and discomfort, negative feelings, dependence on medication and treatments and death and dying) are not scaled in positive direction, meaning that higher score of these facets do not denote higher QoL. They were re-coded. Items are organized by response scale (capacity, frequency, intensity or satisfaction). Missing values were dealt as per the recommendation given by WHO expert group, while using WHOQoL instrument as a measure of QoL among individuals.

For each domain score of WHOQoL HIV BREF, low score indicates poor self perceived QoL. Domain scores are scaled in positive direction where higher scores denote higher quality of life. The mean score of items (facets) within each domain is used to estimate domain score. Mean scores are then multiplied by four in order to make domain score a comparable score used in WHOQOL, so that scores range between 4 to 20.

Rating was given to the individual Domain score (Teja Oblak, Anja Pasaric, 2008). Low self perceived QoL was assigned to domain score ranges from 4-10, moderate (medium) self perceived QoL to domain score ranges from 11-15 and high self perceived QoL was assigned to domain score ranges from 16-20.

Out of 401 PLHIV respondents, responses of 396 PLHIV individuals were selected for the final analysis of quality of life and HIV infection. Summary statistics of WHOQoL HIV BREF domain and facets score is shown in table 8.1.

Table 8.1: Summary Statistics for Computation of WHOQOL HIV BREF Domain and Facets Score by Gender of PLHIV Respondent

Sr. No	Domain And Dimensions Of Life	Gender Of Respondent		Total
		Male	Female	
1	Physical Domain	10.65	10.76	10.71
1.1	Pain and Discomfort	2.53	2.55	2.54
1.2	Energy and Fatigue	2.75	2.77	2.76
1.3	Sleep and Rest	2.78	2.87	2.84
1.4	Symptoms of PLHIV	2.59	2.57	2.58
2	Psychological Domain	10.46	10.06	10.22
2.1	Positive Feelings	2.29	2.12*	2.19
2.2	Thinking Learning and Memory	2.51	2.43	2.46
2.3	Self Esteem	2.75	2.80	2.78
2.4	Bodily Image	2.53	2.50	2.51
2.5	Negative Feelings	3.01	2.72**	2.83
3	Level of Independence Domain	11.67	11.69	11.68
3.1	Mobility	2.99	2.95	2.97
3.2	Activities of Daily Living	2.90	2.94	2.93
3.3	Dependence on Medication and Treatments	2.87	2.83	2.85
3.4	Work Capacity	2.91	2.96	2.94
4	Social Relationship Domain	13.01	10.76***	11.64
4.1	Personal Relationships	3.34	2.73***	2.97
4.2	Social Support	3.15	2.74***	2.90
4.3	Sexual Activities	3.23	2.61***	2.85
4.4	Social Inclusion	3.29	2.69***	2.92
5	Environment Domain	11.32	10.39***	10.75
5.1	Physical Safety and Security	2.46	2.30**	2.36
5.2	Home Environment	3.06	2.64***	2.80
5.3	Financial Resources	1.95	1.59***	1.73
5.4	Health and Social Care	3.67	3.57	3.61
5.5	New Information and Skills	3.67	3.50**	3.56
5.6	Recreation	2.71	2.52**	2.59
5.7	Physical Environment	2.49	2.18***	2.30
5.8	Transport	2.63	2.48*	2.54
6	Spiritual/Religious/Personal belief Domain	12.22	11.22	11.61
6.1	SRPB	2.37	2.40*	2.39
6.2	Forgiveness and Blame	3.40	2.99	3.15
6.3	Concern about Future	2.89	2.57	2.69
6.4	Death and Dying	3.56	3.26**	3.38
i	Overall Quality Of Life	2.72	2.64	2.67
ii	Overall Health Status	2.89	2.83	2.85
	Number Of Respondent PLHIV	154	242	396

*10%, ** 5%, ***1% level of significance

Source: Author's Own estimates, based on primary data

The overall QoL score for the whole sample was (2.67). Among the 29 facets, the highest scores were for the health and social care (3.61), new information and skills (3.56) and death and dying (3.38). Lowest score were for physical environment (2.3), positive feelings (2.19) and financial resources (1.71). Mean score by gender of PLHIV respondents are presented in the table. Most of the facets have mean score below the mid-scale point of 3 excepting health and social care facet, new information

and skill, death and dying and forgiveness and blame facet. For facets, mobility, personal relationships, work capacities, activities of daily living, social inclusion and social support mean scores are marginally below the mid scale point 3.

8.4 FACTORS ASSOCIATED WITH QUALITY OF LIFE OF PEOPLE LIVING WITH HIV

A large body of previous research has provided important information with respect to correlates of QoL in PLHIV. Various Socio-economic, demographic and clinical characteristics of PLHIV individuals have been shown to be significant predictors of different dimensions of QoL among PLHIV. Gender is considered to be an important predictor and in general female has been associated with significantly diminished QoL (Campsmith *et al.*, 2003, Kohli *et al.*, 2005). All the same, information on gender differential in QoL is controversial. Age is another important demographic predictor of QoL among PLHIV. Better educational status defines an enhanced QoL. Several studies have reported that higher educational status leads to better psychological and physical wellbeing (Vidrine *et.al.* 2003). Among socio-economic predictor, occupational status or employability of PLHIV individual, emerge as an important aspect of QoL. It is observed that employed PLHIV report significantly higher self perceived QoL than those who are unemployed. Migration status of PLHIV individuals is also expected to predict the overall QoL. Migrants are expected to be at a more compromised situation than natives. In the Indian society setup, caste is also expected to influence QoL. Among socio-economic predictors, wealth possession is an important predictor of QoL. It is expected that higher wealth possession is significantly positively associated with enhanced QoL. Locality of residence influences the external environment and QoL among PLHIV. Slum dwellers live in a compromised, shabby environment, hence at a disadvantageous status to their health status and lead to deteriorate QoL further. Family status is expected to influence the level of independences. It is expected that nuclear families are more independent than that of joint or extended families.

Functioning and well-being of PLHIV is inextricably linked to both, the symptoms they experience and clinical findings. QoL is significantly influenced by the change in the clinical symptoms (Lorenz *et.al.* 2006).

Several studies have shown that PLHIV with higher CD4 cell counts report better QoL, physical, social and mental (call *et.al*, 2000, Campsmith *et.al*, 2003, Chandra,

et al., 2006). It is experienced that PLHIV whose CD4 count decreased also had accompanying significant decline in general health, social functioning, psychological well-being (Lubeck *et al.*, 1997). QoL typically decrease with disease progression and inversely correlated to frequency of hospitalization and increasing symptoms (Lubeck *et al.*, 1997). However, in recent years, after the successful intervention strategies and accessibility to affordable ART treatment to PLHIV, duration of HIV diagnosed is not observed to be significantly influencing deterioration in QoL. QoL has been shown to improve with ART treatment, though the effect may differ depending on individual's baseline QoL. PLHIV individuals with advanced HIV illness and low QoL score have demonstrated significant improvement in QoL with ART treatment (Cohen *et al.*, 1998) while those with asymptomatic HIV and higher QoL scores have shown short-term impairment of QoL mainly due to known adverse effects of drugs (Zinkernagle *et al.*, 1999).

8.5 QUALITY OF LIFE AMONG PLHIV- AN ORDERED PROBIT ANALYSIS

Econometric Specification: To determine the impact of demographic, socio-economic and clinical characteristics on the self perceived notion of quality of life among people living with HIV, the regression tool is most widely used econometric tool for estimating the contribution of each characteristic.

The dependent variable measuring self perceived quality of life among PLHIV is inherently ordered (with option 0 (low self perceived), 1 (medium self perceived) and 2 (high self perceived)). In such a situation an appropriate econometric technique is the “**ORDERED PROBIT REGRESSION**”. The ordered probit regression estimates the underlying score as a linear function of the exogenous variables and a set of cut points. The probability of observing outcome, i corresponds to the probability that the estimated linear function, plus random error, is within the range of cut points estimated for the outcome.

Using the ordered probit model to estimate the impact of different explanatory variables on the self perceived notion of quality of life among PLHIV, the following variables were included as independent variables in the model:

Independent variables included in the ordered probit regression model were classified into three categories: (1) Demographic variables, (2) Socio-Economic variables and (3) Clinical factors.

Table 8.2 Explanatory Variables Used In the Ordered Probit Regression Model

Variables	Description
Demographic Variables	
Gender	1 male 0 female
Age	In complete years
Socio-Economic Variables	
Education (Illiterate)	
Primary	1 yes 0 no
Secondary	1 yes 0 no
Senior Secondary	1 yes 0 no
Senior Secondary Plus	1 yes 0 no
Migration Status	1 migrants 0 native
Family Status	1 nuclear 0 joint/extended
Occupation Status (Unemployed)	
Main Worker	1 yes 0 no
Casual Worker	1 yes 0 no
Own Account	1 yes 0 no
Locality of Residence (Slum)	
Low Area Residents	1 yes 0 no
Middle / Upper middle Area Residents	1 yes 0 no
Wealth Index Score	Socio-Economic Status (PCA Based)
Caste (others)	
SC	1 yes 0 no
ST	1 yes 0 no
OBC	1 yes 0 no
Clinical Variables	
CD4 count	CD4 count status in last six months
ART status	1 on ART 0 not on ART
Time since HIV diagnosed	1 recently diagnosed 0 diagnosed in far past

These explanatory variables were used to predict the probabilities of having different scores of self perceived notion of quality of life. Model specification is given as below:

$$y_i^* = x_i \beta + e_i^{39} \quad \dots(1)$$

Where, y_i^* is unobserved response variable (latent variable), relating to i 'th individual. Here it is interpreted as individual's "self perceived actual Qol" and x_i his/ her characteristics. We only observe y_i within the range characterized in this case, by (0) self perceived low Qol, (1) self perceived medium Qol and (2) self perceived high Qol. But implicit in 1) is that the estimated coefficients can be used to get a predicted value of, in this case, self perceived Qol.

The latent variable y^* is a linear function of the x 's, and adding a normally distributed error term. This means that the probability of an individual reporting a particular value of $y=j$ is given by the difference between the probability of the respondent

³⁹ Ordered Probit model see appendix

having a value of y^* less than μ_j and the probability of having a value of y^* less than μ_{j-1} . Using these probabilities it is possible to use maximum likelihood estimation to estimate the parameters of the model. These include the β 's (the coefficients on the X variables) and the unknown cut-off values (the μ 's).

In this case, μ_1 and μ_2 imply that a value of the latent variable than μ_1 corresponds to low self perceived Qol and above μ_2 corresponds to high self perceived Qol, between μ_1 and μ_2 correspond to medium Qol. Predicted value of y^* for the reference individual, where all explanatory variables equal to zero, is zero. This value lies between μ_1 and μ_2 , hence reference individual would be predicated to report medium self perceived Qol.

μ 's are threshold values in the OPR model, unknown and determined by maximum likelihood estimate method. y_i is the final score of self perceived notion of quality of life among people living with HIV. Note that 2 (three categories minus one) threshold values are to be estimated jointly with regression coefficients. From the two values (μ_i) we can readily estimate the probability of a PLHIV individual categorizing itself for a particular category of self perceived notion of quality of life (low, medium and high). Greene outlined this methodology. The threshold values are estimated jointly within the model.

Coefficients of explanatory variables have a qualitative interpretation. A positive coefficient means that the PLHIV respondent has a higher value of latent Qol and is more likely to report a higher category of self perceived Qol. A negative value corresponds that they have a lower Qol of the latent variable and are likely to report a lower category of self perceived Qol. Threshold levels are unknown; hence the latent variable and coefficient are not measured in natural units.

Quantitative predication is made on the basis of marginal effects for continuous explanatory variables and average effects for being discreet explanatory variables. Test of the specification of model is also carried out before putting too much weight on the results. RESET test suggests whether the model is correctly specified or mis-specified. A significant p value of chi square suggests that a model is mis-specified, hence there is need to improve the specification of model. This exercise was carried out for all six models, in the analysis of quality of life and HIV infection. Results of OPR are presented in table 8.3:

Table 8.3: Ordered Probit Regression Analysis, Results for PLHIV's Self Perceived Notion of Quality Of Life

Selective characteristics	Physical domain	Psychological domain	Level of independence domain	Social relationship domain	Environment domain	SRPB domain
Demographic Variables						
Gender	-0.150	-0.144	-0.219	0.450**	0.724***	-0.043
Age	-0.015	0.009	-0.017*	-0.017*	-0.007	0.022**
Socio-Economic Variables						
Education (Illiterate)						
Primary	0.146	0.079	0.078	-0.154	0.288	0.361**
Secondary	-0.287	-0.033	-0.089	-0.225	0.101	0.210
Senior Secondary	-0.035	0.347	0.079	-0.402	-0.013	0.638**
Senior Secondary Plus	0.352	0.412	0.254	-0.407	0.580	0.035
Migration Status	-0.337*	-0.285	-0.375**	-0.429**	0.065	-0.402**
Family Status	0.050	0.024	0.302**	-0.067	-0.074	-0.095
Occupation Status (Unemployed)						
Main Worker	0.500***	0.556**	0.731***	0.188	0.159	0.183
Casual Worker	0.250	0.394**	0.510***	-0.012	0.123	0.125
Own Account	0.417	0.577**	0.640**	0.086	-0.123	0.236
Locality of Residence (Slum)						
Low Area Residents	0.150	0.053	0.109	0.178	0.821***	0.042
Middle / Upper middle Area Residents	0.235	0.261	0.375**	-0.554**	0.516**	-0.102
Wealth Index Score	0.168**	0.355***	0.42***	0.406***	0.656***	0.269***
Caste (others)						
SC	-0.072	-0.245	0.103	0.000	-0.074	-0.112
ST	0.292	-0.051	0.701**	0.217	0.367	0.192
OBC	0.011	0.108	0.394	-0.342*	-0.209	0.034
Clinical Variables						
CD4 count	0.002***	0.002***	0.002***	0.000	0.000	0.001***
ART status	-0.288*	-0.092	-0.221	0.188	0.084	0.014
Time since HIV diagnosed	-0.250	-0.231	-0.056	0.068	-0.122	-0.204
μ_1	-0.304	1.080	-0.216	-1.255	0.626	0.475
μ_2	1.883	3.197	2.036	0.268	4.409	2.202
Number of Observations	396	396	396	396	396	396
LR Chi ² (20)	97.840	102.140	137.670	105.560	149.820	61.840
Prob> Chi ²	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R ²	0.146	0.168	0.192	0.129	0.262	0.082
Log Likelihood	-285.673	-252.559	-290.341	-356.393	-211.271	-346.894

*10%, ** 5%, ***1% level of significance

Source: Author's Own estimates, based on primary data

μ_1 and μ_2 are the threshold levels and OPR model follow maximum likelihood estimates. On the basis of OPR, factors significantly contributing to the quality of life among PLHIV respondents are shown in the table 8.4:

Table 8.4: Factors Associated With Quality Of Life among PLHIV Respondents

Sr.No	Domain	Significant Explanatory Variables
1	Physical Domain	Migration Status ↓ Main Workers ↑ Wealth Index Score ↑ CD4 count ↑ ART status ↓
2	Psychological Domain	Main Worker ↑ Casual Worker ↑ Own Account ↑ Wealth Index Score ↑ CD4 count ↑
3	Level of Independence Domain	Migration Status ↓ Family Status ↑ Main Worker ↑ Casual Worker ↑ Own Account ↑ Middle/ Upper Middle Area Residents ↑ Wealth Index Score ↑ ST ↑ CD4 count ↑
4	Social Relationship Domain	Gender ↑ Age ↓ Migration Status ↓ Middle/ Upper Middle Area Residents ↓ Wealth Index Score ↑ OBC ↓
5	Environment Domain	Gender ↑ Low Area Residents ↑ Middle/Upper Middle Area Residents ↑ Wealth Index Score ↑
6	SRPB Domain	Age ↑ Primary Education ↑ Senior Secondary Education ↑ Migration Status ↓ Wealth Index Score ↑ CD4 count ↑

Source: Author's Own estimates, based on primary data

Table 8.4 shows the significant explanatory variables associated with the quality of life among PLHIV respondents. Most important among these variables are wealth index score and CD4 count among PLHIV respondents. Wealth index score is taken as the proxy for the socio-economic status, which is significant in all domains of QoL and significantly increase the QoL among PLHIV respondents. This shows that a PLHIV respondent from higher socio-economic strata of economy apprehends higher QoL. Gender is significant associated variable with respect to social relationships and environment. In general, female gender has been associated significantly, with diminished QoL (Campsmith *et al*, 2003; Douaihy *et al.*, 2001; Eller 2001). However, the information on gender specific difference in QoL is controversial. Many studies

from western countries showed no major impact on QoL (Hays et al., 2000; Kemmler et al., 2003).

In the study group, no significant gender difference was reported in the overall QoL and overall health status among PLHIV respondents. Men reported significantly higher QoL in following facets Positive feelings, negative attitude, personal relations, social support, sexual activities, social inclusion, physical safety and security, home environment, financial resources, new information and skills, physical environment, recreation, transport and death and dying. Females reported significantly higher QoL in spiritual, religious and personal beliefs facet. Of the six domain of QoL, men reported better QoL in environment and social relationship domain. (Prabha S. Chandra, Veena A, Satyanarayana, P. Satishchandra, K. S. Satish, Mahendra Kumar, 2009).

In OPR analysis, age is significantly explaining the variation in social relationship domain and SRPB domain. Where one year increase in age, significantly increases the SRPB score, one year increase in age significantly decreases the social capital of a PLHIV individual. Older PLHIV may be more vulnerable to social isolation, have less access to support resources or may themselves not choose to access such resources due to social stigma, guilt and embarrassment (Cederfjall *et al.*, 2001).

A change of education level from being illiterate to primary and senior secondary, significantly increase the QoL in SRPB domain. Several studies report that higher education level is related to better QoL (Adewuya *et al.*, 2008; Ruiz-Perez *et al.*, 2006).

As PLHIV adjust to living with chronic illness, many new challenges emerge, among them issues of occupation and employment. Employed PLHIV respondents report significantly higher level of self perceived QoL in different domains compared to unemployed PLHIV respondents (Blalock et al., 2002; Cowdery et al., 2002; Low-Beer et al., 2000).

Migration status of PLHIV respondent significantly decrease the score of physical, level of independence, social relationships and SRPB domain score.

Functioning and well being of PLHIV is inextricably linked to the symptoms they experience and clinical findings. Several studies have shown that PLHIV with higher CD4 cells counts (measured in Cd4 cell count per mm³) report better QoL. In the study respondent, OPR analysis shows that increase in CD4 cell count significantly increases the score of physical, psychological, level of independence and SRPB

domain. However, CD4 cell counts do not show any significant relationship with social and environment domain. In the Indian setup, these findings converge with the earlier studies (Rai Y. *et al.*, 2010, Chandra *et al.*, 2006, Naveet W. *et al.*, 2006). In a study conducted in the southern India, viral load was not found significantly related to Social relationships. Similarly, in a study conducted in northern India, no significant relationship was found among asymptomatic and symptomatic PLHIV respondents and social relationships.

Among other significant variables, locality of residence, a change of locality from slum to low area resident or middle/ upper middle area of residence, increase the environment domain score and caste and creed is significantly related to social relationship and level of independence domain.

8.6 MARGINAL EFFECTS OF VARIOUS PLHIV RESPONDENT CHARACTERISTICS ON SELF PERCEIVED LOW QUALITY OF LIFE

As post estimation to the ordered probit regression analysis, estimation was carried out for marginal effects of selected characteristics of PLHIV respondents on his/her self perceived notion of low Qol. These marginal effects are presented in the table 8.5.

Table 8.5: Marginal Effects of Selective Characteristics of PLHIV Respondents on Self Perceived Notion of Low Quality Of Life

Selective Characteristics	Physical impairment	Psychological trauma	Low level of independence	Social relationship decay	Environment ambient	SRPB dampen
Demographic Variables						
Gender	0.059	0.055	0.074	-0.159	-0.264	0.016
Age	0.006	-0.003	0.006	0.006	0.003	-0.008
Socio-Economic Variables						
Education (Illiterate)						
Primary	-0.057	-0.030	-0.026	0.057	-0.106	-0.126
Secondary	0.113	0.012	0.030	0.082	-0.039	-0.077
Senior Secondary	0.014	-0.136	-0.026	0.154	0.005	-0.203
Senior Secondary Plus	-0.133	-0.162	-0.079	0.156	-0.196	-0.013
Migration Status	0.130	0.111	0.117	0.024	-0.025	0.141
Family Status	-0.020	-0.009	-0.104	-0.067	0.028	0.035
Occupation Status (Unemployed)						
Main Worker	-0.189	-0.217	-0.212	-0.067	-0.060	-0.066
Casual Worker	-0.098	-0.151	-0.165	0.004	-0.047	-0.046
Own Account	-0.156	-0.227	-0.175	-0.031	0.047	-0.083
Locality of Residence (Slum)						
Low Area Residents	-0.059	-0.020	-0.036	-0.064	-0.301	-0.016
Middle / Upper middle Area Residents	-0.091	-0.101	-0.117	0.210	-0.185	0.038
Wealth Index Score	-0.066	-0.136	-0.143	-0.148	-0.250	-0.100
Caste (others)						
SC	0.028	0.092	-0.034	0.000	0.028	0.042
ST	-0.112	0.020	-0.194	-0.076	-0.133	-0.069
OBC	-0.004	-0.042	-0.120	0.130	0.081	-0.013

Contd...

Table 8.5: Marginal Effects of Selective Characteristics of PLHIV Respondents on Self Perceived Notion of Low Quality Of Life

Selective Characteristics	Physical impairment	Psychological trauma	Low level of independence	Social relationship decay	Environment ambient	SRPB dampen
Clinical Variables						
CD4 count	-0.001	-0.001	-0.001	0.000	0.000	0.000
ART status	0.112	0.035	0.072	-0.069	-0.032	-0.005
Time since HIV diagnosed	0.099	0.087	0.019	-0.025	0.047	0.077

Note: the marginal effects imply change in PLHIV respondent's characteristics, in case of categorical variables, it is from 0 to 1; gender is 0 for female and 1 for male; migration status is 0 for natives and 1 for migrants; employment status is 0 for unemployed, 1 for main workers and 1 for casual workers and 1 for own accounts; Education status 0 for illiterate as benchmark category; Locality of residence 0 for slum as benchmark category; Caste 0 for others as benchmark category; family status 0 for joint/extended family 1 for nuclear family

Source: Author's Own estimates, based on primary data

While estimating the marginal effects of various PLHIV respondents' characteristics on self perceived notion of Low Quality of Life, we have chosen the slightly different names considering the low self perceived notion of QoL.

As post estimation of OPR, for PLHIV respondents' self perceived QoL, marginal effects were estimated for outcome (0), corresponding to the self perceived notion of low QoL, hence Physical Domain (Physical Impairment), Psychological Domain (Psychological Trauma), Level of Independence Domain (Low level of Independence), Social Relationship Domain (Social Relationship Decay), Environment Domain (Environment Ambient), SRPB Domain (SRPB dampen).

These reveal that a change of respondent's gender from female to male decreases the social relationship decay and environment ambient. A unit increase in the wealth index score and CD4 cell counts decrease the probability of low self perceived notion of QoL.

A change in migration status from native to migrant is causing PLHIV respondent exposure to low QoL excepting environment ambient. Similarly, the change in occupation status from unemployed to main worker, to casual worker, to own account, decrease the probability of low self perceived QoL. Hence, employed PLHIV respondents are considered better off than their unemployed PLHIV fellows.

8.7 LIMITATIONS

Due to the cross sectional nature of the data we are not able to assess the responsiveness (ability to detect change over time) of the instrument *i.e.* WHOQoL HIV BREF. Hence, it prevents us from making any speculation regarding the consistency of this relationships overtime. Responses of PLHIV in the study may be

guided by their association with the NGO, hence leading to some bias in the responses.

8.8 OBSERVATIONS

The present chapter describes the quality of life and factors associated with QoL of people living with HIV in Pune city. We sought to examine QoL among Pune's HIV positive individuals and impact of demographic, socio-economic and clinical factors on QoL in order to suggest change in public health policy and services. Quality of life has been an important clinical outcome and QoL instruments can be used to evaluate the performance of programmes and services. It is therefore important to adopt an appropriate QoL instrument. For this purpose WHOQoL HIV BREF instrument (O'Connell et al., 2003; WHO HIV Group., 2003, WHOQoL HIV Group., 2004) was translated in to Marathi language and a cross sectional study was conducted among PLHIV individuals registered with PLC- a initiative of NMP+. In general, WHOQoL-HIV instrument was acceptable for PLHIV in care. Mean overall QoL score was (2.67) for whole sample lower than that reported from similar studies conducted in other regions of the world (WHOQOL-HIV Group 2003).

The highest mean score was reported in the level of independence (11.68) and social relationship domain (11.64) and the lowest score was reported in Psychological Domain (10.22). Low mean score in Psychological Domain highlights the need to study the psychological well being of PLHIV individuals. It reveals that psychological and emotional aspect of life is an indispensable dimension of life, which cannot be overlooked. This makes it important to focus on the psychological well being of PLHIV individuals and to offer psychiatric care and emotional support.

Most influential contributors to different aspects of QoL were the individual's socio-economic status, employment status and HIV- Disease stage (CD4 cell count status in the last six months). Gender is an important dimension of QoL, when it comes to Social relationships and Environment association.

Treatment is the key element for care and support for People Living with HIV. Any action that improves a person's quality and length of life is a form of treatment. Treatment can happen without medication. For example, personal, social and psychological support is also a treatment because it can provide relief and improve a person's wellbeing. For medication to be effective, other forms of treatment must

support it. The needs of PLHIV should be central in deciding where and what kind of treatment and care is provided to enhance the quality of life among PLHIV.