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A Cross-Sectional Study of Adaptation, Coping and Quality of Life in the HIV Seropositive Cases

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Abstract

Background: The role of quality of life and coping strategy with the HIV/AIDS disease cannot be overemphasized. In view of the above present study was planned to assess the Quality of life and coping in sero-positive cases.

Material and Method: 182 patients with HIV sero-positive status on HAART for at least 3mths formed a study group. Individuals with a past history of mental illness / head injury / dementia and co-morbid psychiatric disorder were excluded. The cases with co-existing opportunistic infections and malignancy were also excluded. CD4 count was done using the Flow Cytometry, Scales pertaining to Coping, Quality of Life and Personality factors were applied. Data was analyzed with the help of SPSS 17. ANOVA and Kruskal wallis test was done.

Results: The CD4 count was 200-500 /micro L in 69%, 16.5% had below 200/micro L and the rest 14.3% had the count above 500/micro L. The treatment profile of patients found 85.2% of patients on ART. Coping Resources fall within normal range. Domains of Quality of Life Scale namely Physical health, feelings and emotions, Pain and Sleep had higher mean score revealing better quality of life, Quality of life compromised was in the domain of appetite and food intake daily activities, cognitive functions and social support.

Conclusion: Findings revealed significant association between CD4count and quality of life. There was a positive relationship with quality of life scale domains of Physical health and CD 4 count. Enhancement of quality of life in HIV sero-positive cases can be done by promoting adherence to ART and adapting healthy coping strategies.

Keywords: HIV; Coping resource inventory; Quality of life

Introduction

HIV/AIDS places an increasing burden on the health of the population, and causes further socioeconomic problems for individuals, families, communities, and governments in many countries [1]. For a person living with HIV, this means having to cope with a range of HIV-related symptoms for extended periods. Symptoms may be related to the infection itself, co-morbid illnesses, or iatrogenic effects from HIV-related medications [2,3]. Hence, evaluation of health-related quality of life (HRQOL) is useful for commenting on patients' perceived burden of disease and quantifying changes and the effects of treatment in health over time [4].

Quality of life is conceptualized in terms of an absence of pain or an ability to function in day to day life [5]. The researchers have also considered Quality of life as a "fighting spirit" associated with longer survival time for individuals [6-8]. It is elaborated significantly that 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" [9]. 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 specific disease process such as AIDS [10,11]. Psychosocial factors influence disease progression and studies have found stressful events and social support related to HIV-1 disease progression to AIDS [12].

QOL has been an important consideration in virtually all situations resulting in deviation from normal health including QOL assessment in HIV infected individuals. Studies have been carried out to see the effect of antiretroviral therapy particularly on the major changes in the life of HIV infected individuals who can now look forward to many more years of life [13,14]. All these factors make it necessary to evaluate quality of life of HIV infected individuals, which provides valuable insights into how the disease and treatment affect the patient.

Relationship between coping and psychological morbidity represents a field of specific interest in HIV literature. Coping defined as the cognitive and behavioral efforts made by a person to alter or mange the problems caused by a specific stressful situation has been documented to greatly influence the psychological impact of HIV infection [14]. Coping was initially conceptualized by Lazarus [15] as an essentially cognitive process consisting of threat and resource appraisal and the active selection of coping responses. Coping styles greatly influence the psychological impact of HIV infection. From a psychobiological perspective, the way in which HIV-infected subjects respond to their condition might also have a role in molding disease parameters. In fact, some studies of HIV-infected patients have shown that active coping was associated with higher total lymphocyte, CD4+, and "Natural Killer" cell counts and that a rapid progression of HIV disease was more likely in patients who adopted a passive or fatalistic–resigned coping style, particularly if associated with depression and occurrence of severe stressful events, whereas avoidant coping was associated with higher emotional stress Significant interactions are noted between less effective coping styles and several variables, such as low social support, poor self-esteem. The stressors associated with living with HIV may require different coping mechanisms than living with other chronic illnesses [16]. Though studies are carried out to evaluate psychosocial profile, however coping with the disease has not been addressed. In view of above it was planned to evaluate psychological correlates, quality of life and coping in HIV sero-positive cases. The

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Study also planned to correlate quality of life and immunological recovery using CD4 count.

Material and Methods

HIV positive patients on HAART, admitted in a tertiary care centre were taken up for this study. The diagnosis of HIV infection was established by ELISA and Western blot test which was ascertained by their medical records. The study was approved by the Ethical Committee of the Medical College. Individuals with a past history of mental illness/head injury/dementia and co-morbid psychiatric disorder were excluded. The cases with co-existing opportunistic infections and malignancy were also excluded.

The present study was a cross-sectional study, conducted on patients admitted in the Immunosurveillance ward at a tertiary care hospital. Informed consent was obtained from each of the patient and those who agreed for evaluation constituted sample for study group. Complete confidentiality of the information was assured to the patient.

The patients were screened for any psychiatric disorder through psychiatric interview face to face setting. Socio-demographic and HIV related information was obtained, by a structured questionnaire. CD4 count was done using the Flow Cytometry, which is the standard procedure followed by the institution. Scales pertaining to Coping Quality of Life and Personality factors were applied.

Coping resource inventory

The Coping Resource Inventory has been used in clinical and educational settings for a number of purposes. The resource domains of the CRI were established on the basis of the conducted stress programmes, working with individual clients and an extensive review of the literature on coping resources. It is a 60-item instrument that measures resources in five domains – Cognitive, Social, Emotional, Spiritual/Philosophical and Physical. The resource domains of the CRI were devised by the test developers based on their experience in conducting stress programmes, as well as a thorough literature review. All the resources that fell into the counselling domain were then incorporated into the measure [17].

Quality of life scale

QOL core instrument modified to suit the Indian cultural settings, developed by National AIDS Research Institute (NARI) was used. Of the 62 questions contained in the core instrument, 45 are used for inclusion in the modified instrument. The language is modified. Some questions are combined to make the instrument short. Some of the activities of daily routine are different in Indian population; hence those questions are modified with relevant activities [18].

Scoring: For each domain lower scores, compared to higher scores, indicate poor self-perceived quality of life for that health measure. The sub-scales of the instrument were scored as summated rating scales on a 0-100 scale where higher scores indicated better health.

Reliability analysis: The overall scale has the Cronbach alpha statistic of 0.75. Values for the various sub-scales ranges from 0.70 (work and earning) to 0.77 (sexual activities).

Construct validity analysis: The inter domain correlation coefficients ranges from 0.204 to 0.544 and are significant at P<0.05 level in case of all domains except sexual activities.

Results

The socio- demographic profile (Tables 1-5) shows age group of the sample between 20-50 yrs, 78% were educated above 10th std. and 89% were married. Predominantly study group comprised of married group in the age group of 30 yrs. with education level falling in majority of the population in 10 and above (Table 1). Majority of the subjects reported reason for testing to be investigated for some other disease (Table 2). The most reported psychological reaction was sadness followed by denial after knowing the seropositive status (Table 3). Source of learning about HIV was media followed by friends and books (Table 4). The majority of the cases reported heterosexual mode of transmission (64.3%) followed by parenteral (Table 5). 69.2% had CD 4 Count in 200 to 500 range, only 16.5 % had CD4 count less than 200, however 14.3% noted to be having in the range of 500 / per micro L. Coping Resource Inventory yielded high mean score in physical and philosophical domain (Table 6 and Figure 1). On quality of life scale the mean score Feelings and emotions, pain, sleep and physical health had higher mean scores as compared to appetite and food intake (Table 7 and Figure 2). Coping resource inventory yielded physical mean scores to be better (55.91 ± 8.29) (Table 8 and Figure 3) as compared to other domains. Positive correlation (p<0.000) is noted between CD4 count and quality of life on certain parameters (Table 9). Revealed parameters having positive correlation as physical health, physical activities and daily activities.

Discussion

Present study was carried out in a tertiary care Hospital in Pune. Majority of the cases were investigated for other medical diseases. Psychological reaction as reported in posttest counseling was sadness followed by denial after patients came to know about the sero-positive status. Regarding knowledge about HIV 67.6% of cases had knowledge about it. Source of knowledge was predominantly media, friends and books. Mode of transmission was heterosexual in majority of cases. The disclosure about sero-positive status was done by 70.9% of the cases. However those who did not disclose it was because of fear of isolation and adverse reaction. The CD4 count was 200-500 /micro L in 69%, 16.5% had below 200/micro L and the rest 14.3% had the count above 500/per micro L. The treatment profile of patients found 85.2% of patients on ART (Table 6 and Figure 1).

	Percentage
Education	
<10	21.4
10+	78.6
Total	100
Marital Status	
Married	89
Single	11
Total	100
Age group	
20+	24.7
30+	51.1
40+	24.2
Total	100
Income	
10K	1.6
<20K	26.4
>50K	1.1
20-50K	70.9
Total	100

Table 1: Sociodemographic correlates.

Reason	Percent
During Blood Donation	2.2
During Routine Med Exam	5.5
For some other disease	79.1
On Self-Request	2.2
Others	11
Total	100

Table 2: Reason for testing.

Psychological Reaction	Percent
Angry	3.3
Couldn't believe	16.5
Felt Angry	3.8
Felt Hopeless	14.3
Felt Nothing	8.8
Felt Sad	51.09
No Ans	2.2
Total	100

Table 3: Psychological reaction post –test counselling.

Source of Knowledge	Percent
Books	26.9
Friends	35.7
Media	36.3
Others	1.1
Total	100

Table 4: Knowledge about HIV.

Mode of Transmission	Percent
Accidental Inoculation	2.7
Hetero sexual Transmission	64.3
IV drug Abuse	4.4
Parentral	28.6
Total	100

Table 5: HIV mode of transmission.

CD 4 Count	Percentage
<200	16.5
>500	14.3
200-500	69.2
Total	100

Table 6: CD4 count in study group.

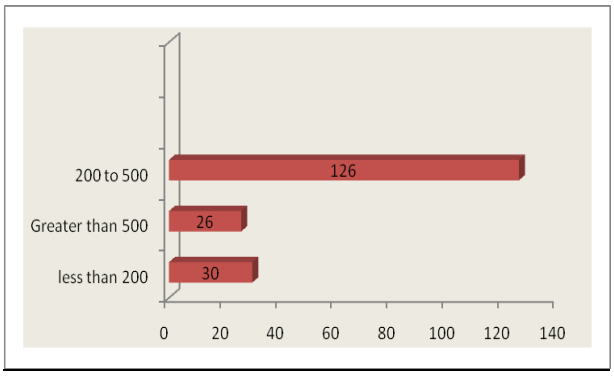

Figure 1: CD4 count in study group.

Parameters	Mean	SD
Physical Health	68.19	19.27
Physical activities	67.99	26.89
Daily Activities	53.86	16.83
Social Support	57.73	12.89
Cognitive Functions	58.01	27.22
Feelings and Emotions	71.52	13.018
Pain	78.38	21.79
Sleep	74.39	19.86
Appetite and Food Intake	54.17	22.66
Sexual activity	69.75	13.63

Table 7: Quality of life and adherence questionnaire.

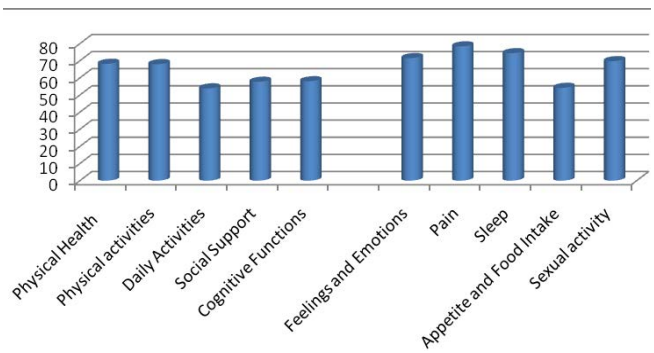

Figure 2: Quality of life.

Coping Resource Domain	Mean	SD
Physical	55.91	8.29
Cognitive	48.77	10.41
Emotional	49.88	6.63
Social	48.3	7.73
Philosophical	53.01	7.96

Table 8: Coping resource inventory.

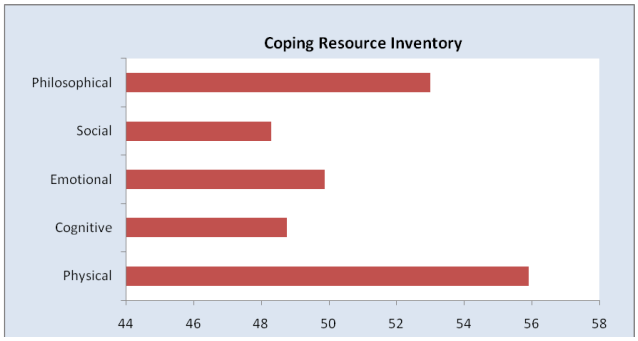

Figure 4: Coping resource inventory.

In the beginning of the disease process psychological adaptation is challenging. At the severe symptomatic stage of AIDS; patients experience issues of uncertainty much more. Initial bewilderment turns to fear as the disease becomes more severe. Denial is most typical in the early stages of infection [18]. Sexual transmission is by far the most common mode of transmission globally. In 64.3% of the cases mode of transmission was heterosexual (Table 5). The probability of a person being infected via sexual intercourse depends on the likelihood of unprotected sex with an infected partner, so sexual behaviour patterns

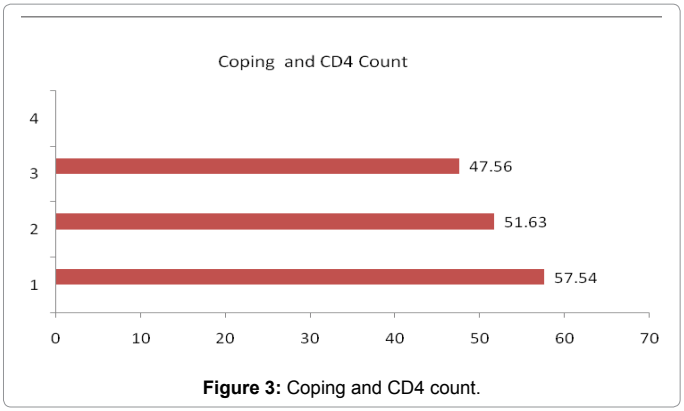

Figure 3: Coping and CD4 count.

and the background prevalence of HIV are of major importance. Interventions to change sexual behaviour (mainly partner reduction) and to promote condom use are, therefore, are vital component of any HIV control programme and have been shown to be effective in individual studies and at the national level [19].

In coping Resource inventory, Coping Resources fall within normal range and were higher in lesser than 200 CD 4 count group, followed by the 200 to 500 category. Life stressors and coping style have been associated with alterations in cellular immunity similar to those seen in HIV-1 infection. Patient adherence to antiretroviral therapy is crucial to treatment success; there are a positive relationships between types of adherence and coping, psychosocial factors, quality of life (QoL), and physical symptoms from the perspective of people living with HIV/AIDS. Maladaptive coping (rumination) related to poor mental health [20].

The certain domain of QOL might have come as better because of treatment adherence and thereby improving CD4 count (Table 7 and Figure 2). Domains of Quality of Life Scale namely Physical health, feelings and emotions, Pain and Sleep had higher mean score revealing better quality of life, Quality of life compromised was in the domain of appetite and food intake daily activities, cognitive functions and social support.

Domains of QOL daily activities and social support had significant association with marital status). Friedland et al. [5] found in his study that close friends provided most types of support, thus in the scenario like in this study group the social support from the colleagues staying with the person throughout matters.

Coping resources in the HIV infected individuals was studied using the Coping Resource Inventory (CRI) that tells about resources that can help handle the stress that is a natural part of life. Resources are more than just the specific coping mechanisms or coping strategies that are used when under stress. While specific coping strategies help you to feel better at the time, resources are more powerful and enduring. Resources are reserves that you can draw on. Coping Resources in the study group fall within normal range available. However, resources drawn are more in lesser than 200 CD 4 count group. Followed by the 200 to 500 category (Figure 3). Coping Resource Inventory yielded high mean score in physical and philosophical domain (Table 8).

In the present study QOL domains of Physical Health, Physical activities, Daily activities and appetite and food intake had significant association with CD4 count ($p<0.05$). Higher the CD4 Count better was the score on these domains Whereas sleep, pain, Cognitive functions and social support did not yield any significant difference (Table 8).

Quality of Life Scale	CD4 Category	N	Mean	Standard Deviation	Significance
Physical Health	200	30	48.81	17.56	0
	200-500	126	69.22	16.94	
	>500	26	85.58	11.23	
	Total	182	68.19	19.27	
Physical activities	200	30	41.04	19.92	0
	200-500	126	71.67	26.36	
	>500	26	81.29	13.36	
	Total	182	67.99	26.89	
Daily Activities	200	30	35.83	16.19	0
	200-500	126	56.22	14.94	
	>500	26	63.25	11.01	
	Total	182	53.86	16.83	
Social Support	200	30	56.89	12.84	0.393
	200-500	126	57.27	12.67	
	>500	26	60.92	13.98	
	Total	182	57.73	12.89	
Cognitive Functions	200	30	54.17	28.43	0.254
	200-500	126	57.34	27.24	
	>500	26	65.71	25.2	
	Total	182	58.01	27.22	
Feelings and Emotions	200	30	73.66	11.66	0.279
	200-500	126	70.49	13.79	
	>500	26	74.04	10.04	
	Total	182	71.52	13.02	
Pain	200	30	74.81	24.35	0.548
	200-500	126	78.68	20.96	
	>500	26	81.03	23.03	
	Total	182	78.38	21.79	
Sleep	200	30	82.19	12.12	0.057
	200-500	126	72.54	20.73	
	>500	26	74.39	21.12	
	Total	182	74.39	19.86	
Appetite and Food Intake	200	30	45.72	20.91	0.031
	200-500	126	56.98	22.91	
	>500	26	50.32	21.15	
	Total	182	54.17	22.66	
Sexual Activity	200	30	68.54	8.45	0.079
	200-500	126	71.08	14.49	
	>500	26	64.66	13.22	
	Total	182	69.75	13.63	

Table 9: CD4 and quality of life score.

The study conducted by Kohli et al. on Indian population [17] reported the mean scores for the domains of physical health, daily activities and

sexual activities were remarkably lower as compared to other domains whereas those for social support, cognitive functions and pain were comparatively higher. The differences could be due to the different CD4-count profile of the patients in these two studies, wherein this study had only 16.5% individuals having CD4 count less than 200/micro L while the study by Kohli et al. [17] had 37% patients with CD4 count less than 200/micro L and thus the lower scores in the first three domains as reported by them also this study had only male sample as compared to the other study which had both males and females. Further study carried out by Tiwari et al. [21] the QOL of patients having higher CD4 count was found better than patients having lower counts, but difference was not found to be significant. Burgoyne and Darrell [22] and Nojmi et al. [23] have also shown a directly proportional relationship between quality of life and immunological factors.

Conclusion

Present study is a comprehensive study of Quality of life, coping and adaptation in HIV sero-positive cases. Findings of the study have revealed some interesting observation Mode of transmission was noted to be heterosexual in majority of cases. Psychological reaction reported by patients was sadness followed by denial after patients learnt about sero-positive status. The CD4 count was 200-500/micro L in 69%, 16.5% had below 200/micro L and the rest 14.3% had the count above 500/per micro L. There was a positive relationship with CD4 count and quality of life domain of physical activities, physical health and daily activities. This is a very important indication of the findings. This can be achieved by help of mental health professionals who can serve important role in identifying and evaluating various aspects of quality of life. Since this was a cross-sectional study many associated factors could not be studied and a prospective study would definitely throw much more light on the above factors, and help in development adaptive process and better quality of life in HIV sero-positive cases.

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