Study of personality traits, individual coping resources, and their association in HIV-seropositive males

ABSTRACT

Background: HIV infection is an unfortunate consequence of a defined set of behaviors. Individuals with continued high-risk behavior either due to personality factors or due to maladaptive coping skills have higher viral loads and morbidity. Research has shown significant interactions between less effective coping styles and personality factors. Aim: This study aimed to evaluate personality traits, coping skills, and their association in male HIV-seropositive cases. Materials and Methods: This was a cross-sectional study, conducted on 86 patients. Informed consent and sociodemographic details, by a structured questionnaire, were obtained. Scales pertaining to personality factors and coping were applied. Statistical analysis was done by SPSS 16. Results: Neuroticism, extraversion, and conscientiousness traits were in the average range. Scores on openness and agreeableness were below average. The results pertaining to coping showed an overall mean score of 50.78, with the highest on physical domain and then on the philosophical domain, the lowest was in social domain. The research sample perceived their coping resources as average. Neuroticism was negatively related to all the coping styles. Extraversion showed relation with physical, emotional, social, and philosophical scales. Openness was related to philosophical and emotional scales. Agreeableness correlated with all domains of coping except the social. Conscientiousness correlated significantly with all the domains of coping. Conclusion: The various personality traits associated with male HIV-seropositive patients were identified and various coping resources used by these were also delineated. Further, the association among them was identified which can help in primary prevention and mental health professionals to have a targeted approach for counseling.

Keywords: Acquired immunodeficiency syndrome, coping, HIV, personality

Acquired immunodeficiency syndrome was first recognized in 1981, and has reached almost every part of the world. It was first detected in India in 1986, and the estimated prevalence in India is 0.26%.[1]

HIV infection is an unfortunate consequence of a defined set of behaviors. It is not only an infection, but also a human experience that requires reformulation of psychological patterns and responses with personal changes and transitions. Understanding of HIV epidemic and highly active anti-retroviral therapy being unaffordable to many sections of the society, efforts like promoting knowledge about the disease tend to take prominence. However, it has been noticed that infections arise, with increasing frequency, in individuals with awareness about the behavioral prescriptions to prevent the disease but who still continue to engage in high-risk behaviors.[2]

Personality traits of individuals may influence the occurrence of infection, also the course of the illness and the willingness of the patients to adhere to treatment. Similarly, individuals with continued high-risk behavior either due to personality factors or due to maladaptive coping skills.
have higher viral loads, more immunosuppression, more morbidity, and a higher mortality rate.[3] More research[4] also show significant interactions between less effective coping styles and several variables, such as low social support, personality factors, and high occurrence of stressful events.[5]

The basic message is that high-risk individuals with unattended psychosocial problems, poor coping skills, and certain personality traits continue to perform high-risk behaviors at higher rates, and therefore recognition and management of these are crucial in preventing the spread of HIV. Further, there is evidence of the influence of personality on the coping skills.[6,7]

Relation of traits to specific coping responses reveals a more nuanced picture. Personality and coping play both an independent and interactive role in influencing physical and mental health. Thus, personality is one of the aspects influencing the coping skills of an individual, and thus the need for the assessment of personality in understanding and assessing the coping resources of an individual.

Though studies are carried out to evaluate psychosocial profile in these patients, there is deficiency in defining the personality factors and more so in association to coping. Research evidence is further sparse in Indian scenario. Keeping with the felt need, this study aims and attempts to bring forth the personality factors and coping skills in HIV-positive patients, which would positively influence the preventive measures both at community and individual levels and the approach to HIV epidemic can be integrated comprehensively.

MATERIALS AND METHODS

A total of 100 consecutive HIV-positive patients, admitted in a tertiary immunosurveillance center, were taken up for this study. Eight patients did not provide consent and six were excluded as per the exclusion criteria described below, thus the study was conducted on 86 patients. The patients had been diagnosed as having HIV infection earlier, by one ELISA and one Western blot test.

This was a cross-sectional study. Informed consent was obtained from each of the patients and complete confidentiality of the information was assured. The patients were then screened for the presence of psychiatric disorder if any. Sociodemographic and HIV-related information was obtained, by a structured questionnaire. Scales pertaining to personality factors and coping were applied. All these exercises were carried out by psychiatrists/trained mental health professionals.

Individuals with a history of mental illness/head injury/ dementia and comorbid psychiatric disorder and co-existing opportunistic infections or malignancy were excluded.

NEO-Five-Factor Inventory[8] (FFI) was used for assessing personality profile, the NEO-FFI (Costa and McCrae) is a 60-item version of the NEO personality inventory that provides a brief, comprehensive measure of the five domains of personality – neuroticism, extraversion, openness, conscientiousness, and agreeableness. The results are summarized in terms of three levels: average, below, and above average. As per the manual, approximately 38% scored in the average range and 31% each scored in the below- and above-average ranges. Internal consistency of the scale is good with Cronbach’s alpha score of 0.6–0.9 on various scales. Test–retest reliability ranges from 0.66 to 0.92.

Evidence suggests that five-factor personality traits are related to several sexual behaviors, for example, number of partners, use of drugs or alcohol before or during sex, number of unsafe sexual intercourse, and early sexual initiation.[9]

The Coping Resource Inventory (CRI)[10] has been used in clinical and educational settings for a number of purposes. It is a 60-item instrument that measures resources in five domains – cognitive, social, emotional, spiritual/philosophical, and physical. The higher the scale score, the higher the resource. Direct comparison among scales based on these raw scores is not possible as scales have different number of items, thus these are converted to standard scores (table provided by the publisher), having a mean of 50 and standard deviation of 10 points. Thus, approximately 95% of the individuals will have a standard score that will fall between 30 and 70. The Cronbach’s alpha values for each of the subscale vary from 0.71 to 0.84 and the value for the sum of the scales is 0.91, thus CRI scales are fairly homogeneous and reliably tap the constructs.

These were administered individually in an environment which was free of any distractions and most respondents took 15–20 min for each.

Statistical analysis was done by Statistical Package for the Social Sciences 16.

RESULTS

The sociodemographic profile [Table 1] shows that 85% were more than 30 years of age and 78% were class X qualified, and 90% were married. Sixty-nine percent had their CD4 count between 200 and 500/µL, 16% below
scores were statistically significant. Above-average score was found in less number of patients as compared to the other two classes of score.

The results pertaining to coping are shown in Tables 3 and 4 and Graph 2 which show the mean total raw score in this study to be 171.84 which denotes that a fair amount of resources available for the population. On standard score, the mean was 50.78, with the highest on physical domain and then on the philosophical domain, the lowest was social and the rest were clustered around the mean of 50. Thus, the research sample perceived their coping resources as average (average score: 50 ± 20).

Lowest score was for the social resource subscale, which measures the degree to which individuals are embedded in social networks that are able to provide support in times of stress. Although being relatively lower, it should be kept in mind that the scores on all the domains are in the average range and are closer to the mean.

Table 5 and Graph 3 show the correlation between the different types of personality domains and the coping resource domain.

Table 1: Sociodemographic profile (n=86)

| Age group (years) | Number of cases (%) |
|-------------------|---------------------|
| 20-29             | 19 (22.0)           |
| 30-39             | 44 (51.2)           |
| 40+               | 23 (26.8)           |

| Education standard | Number of cases (%) |
|--------------------|---------------------|
| <10                | 19 (22.0)           |
| 10+                | 69 (78)             |

| Marital status | Number of cases (%) |
|----------------|---------------------|
| Married        | 77 (89.5)           |
| Single/widow   | 9 (10.5)            |

| Staying with family | Number of cases (%) |
|--------------------|---------------------|
| Yes                | 22 (25.6)           |
| No/NA (s)          | 64 (74.4)           |

| CD4 count | Number of cases (%) |
|-----------|---------------------|
| <200      | 14 (16)             |
| 200-500   | 60 (69)             |
| >500      | 12 (13)             |

Table 2: Personality traits - NEO Five-Factor Inventory

| Personality trait | Number of cases (%) | P       |
|-------------------|---------------------|---------|
| Neuroticism       |                     |         |
| Less than average | 8 (9.3)             | <0.001  |
| Average           | 49 (57.0)           |         |
| Greater than average | 29 (33.7) |         |
| Extraversion      |                     |         |
| Less than average | 17 (19.8)           | <0.001  |
| Average           | 44 (51.2)           |         |
| Greater than average | 25 (29.1) |         |
| Openness          |                     |         |
| Less than average | 50 (58.1)           | <0.001  |
| Average           | 34 (39.5)           |         |
| Greater than average | 2 (2.3)  |         |
| Agreeable         |                     |         |
| Less than average | 43 (50.0)           | <0.001  |
| Average           | 32 (37.2)           |         |
| Greater than average | 11 (12.8) |         |
| Conscientiousness |                     |         |
| Less than average | 19 (22.1)           | 0.012   |
| Average           | 41 (47.7)           |         |
| Greater than average | 26 (30.2) |         |

Graph 1: Personality traits

DISCUSSION

NEO-FFI scale shows that score on neuroticism was within the average limits in a significant number of patients (57%) and almost one-third of the individuals had high scores. In NEO-FFI, neuroticism domain signifies people who have a tendency to experience negative effects such as fear, sadness, and anger; maladjustment is seen in many facets and thus individuals who score less on neuroticism are emotionally stable and calm.[10] One study found high neuroticism to be positively associated with risky sexual behaviors,[9] while other[11] found that individuals who scored high on neuroticism less frequently engage in risky health behaviors, including sexual behaviors. Hence, the
results appear to be controversial. Going with the manual for this scale and the different contexts associated with the above description of neuroticism (as the domain here measures the normal dimension of personality, different from neurosis which has been used in context in the above description), the lesser scores on this domain define a emotionally stable person who is able to hold on his/her impulses, thus a relatively higher score in this domain highlights the behavioral problems in this group of patients, possibly leading to high-risk behaviors.

Extraverts are sociable and are also assertive, active, and talkative. They like excitement and are optimistic.[10] Extraversion has been found to be associated with more favorable disease progression. Individuals who have high extraversion score, social isolation is less likely, and they would rather seek the support they need, which is related to a slower HIV disease progression.[12] In this study, 51% had scores on extraversion which were within the average while 30% had scores higher than the average.

Openness describes personality with active imagination, esthetic sensitivity, and unconventional values. However, high scorers do not imply unprincipled individual.[10] This study shows that there is significantly more number of individuals in less than average score in this domain. Openness to experience has not been found as a significant predictor of risky health behavior,[11] a result explained by an inclination of persons who are open to experience to seek mental or spiritual experiences rather than bodily stimulation provided by risky health behaviors, similarly another study found that openness to experience was not consistently related to risky sexual behaviors.[13]

Agreeableness like extraversion is primarily a dimension of interpersonal tendencies. The agreeable person is
fundamentally altruistic, sympathetic, and eager to help others, the disagreeable person is egocentric. In this study, a significant number of individuals have the domain score less than the average, i.e., have scored less on the agreeableness score; this is in line with various studies which have along with low conscientiousness found low agreeableness score to be predicting high-risk sexual behavior.

Conscientious individual is strong willed and determined, on the negative side may lead to annoying fastidiousness and workaholic behavior. There is some evidence that people who score less on this scale are more hedonistic and interested in sex. High conscientiousness has been seen to predict slower disease progression (CD4) over 1 year and there is evidence to suggest that low domain score is seen in individuals with high-risk behavior. In this study, the domain score of average was significantly higher than the low average and high average scores, the disease progression as mentioned has not been studied and thus cannot be commented upon.

Overall in the personality scale, we had a tendency toward higher neuroticism, extraversion and lower agreeableness, and openness and average scoring on the conscientiousness scores. In a number of studies, low agreeableness and conscientiousness and high extraversion were related to various risky sexual behaviors. The high neuroticism with high extraversion and the low or average conscientiousness seen in this study point out to the tendency of being impulsive with a lower self-control regarding pleasurable activities and thus highlights, in totality, a high risk-taking personality.

Connor et al. in a meta-analysis reported that personality may directly facilitate or constrain coping, but relations of personality to coping have been inconsistent across studies, suggesting a need for greater attention to methods and samples. In their analysis, all the five personality traits predicted specific strategies.

Coping was initially conceptualized by Lazarus as an essentially cognitive process consisting of threat and resource appraisal and the active selection of coping responses. In this study, in CRI, the highest score was obtained on the physical domain which measures the degree to which individuals enact health-promoting behaviors which contribute to increased physical well-being. The second highest score was in the philosophical domain which measures the degree to which actions of individuals are guided by stable and consistent values derived from religious or cultural tradition or from personal philosophy. Philosophical/spirituality among HIV-infected individuals is perceived as a bridge between hopelessness and meaningfulness in life. In this study as shown in Table 5 and Graph 3, neuroticism is related negatively to all the coping styles, i.e., increase in neuroticism score, in this sample caused reduction in the coping styles. All correlations were highly statistically significant (P < 0.001) except social domain which was statistically significant (P = 0.034). Extraversion shows high significant relation with physical and emotional component of the coping resource and was significantly related to social and philosophical scales. Openness was significantly related to the philosophical and emotional scales of coping. Agreeableness significantly correlated with all domains of coping except the social domain. Conscientiousness correlated significantly with all the domains of coping. This goes in line with another study which showed almost same findings.

Personality influences coping in many ways, like, even prior to coping, personality influences the exposure to stressors and appraisals. Neuroticism predicts exposure to interpersonal stress and tendencies to appraise events as highly threatening and coping resources as low. Similarly, in this study, increasing neuroticism shows compromised coping skills. Conscientiousness predicts low stress exposure; extraversion and conscientiousness predict more problem-solving and cognitive restructuring, while neuroticism trait predicts less of these skills. Agreeableness is linked to low interpersonal conflict and thus less social stress. Extraversion, conscientiousness, and openness all relate to perceiving events as challenges rather than threats and to positive appraisals of coping resources.

Another study using the same scales showed that neuroticism has significant negative correlation with all the factors of coping; extraversion has significantly positive correlation with conscientiousness, cognitive, social, emotional, and physical factors, whereas spiritualism is not significantly correlated. Openness has significantly positive correlation with agreeableness, conscientiousness, and social and emotional factors, whereas cognitive, spiritual, and physical factors are not significantly correlated.

In this study, the sample was high on neuroticism scale and thus the coping mechanism was compromised in that context, while a similar high extraversion in the sample shows that the problem-solving, cognition, and positive appraisal of the stress were better. A study from India has also found similar high traits in this population. Furthermore, while extraversion and conscientiousness predict more problem-solving, neuroticism too predicts emotion-focused coping. Studies have also suggested that neuroticism and conscientiousness have more protective and positive correlation with health outcomes. An individual analysis of the personality trait and the associated coping skill would help in the assessment of the patient.
for a future better life with a targeted counseling. It would also help to build up on the higher coping skill and understanding the limits posed by the personality traits and identifying the inherent traits which would be the stepping stone to enhance the coping skills.

In another study, multivariate regressions showed that personality traits explained 60% of the variance in emotion-focused coping, 30% of variance in problem-focused coping, and 15% of variance associated with social support coping. Thus, the association between the two domains portrays the path to be taken in behavioral or cognitive therapies.

There are certain limitations of the study; the sample was based on a selected population of employed male individuals and so the results are best applicable to this population. In addition, correlation with disease state was not done. The five-factor model of personality does not allow for more subtle analyses of behavior in a specific context. Therefore, along with the five-factor model, some narrower constructs relevant for specific health outcomes could also be included.

A longitudinal study can throw much more light on the various variables studied. A longitudinal study with periodic follow-up for a longer duration will clearly demonstrate the change with disease progression and impact of treatment. Thus, the degree to which the study is representative of the larger HIV-infected population is influenced by the potential selective factors associated with recruiting from HIV treatment settings/centers.

CONCLUSION

This study provides evidence that certain coping mechanisms and personality traits are more commonly seen in this population of patients, and thus a targeted planned approach in this context can be fruitful and help in the development of management strategies for the education of patients. The high neuroticism, high extraversion, and low or average conscientiousness seen in this study show impulsivity with a low self-control and thus highlight, in totality, a high risk-taking personality. Similarly, the associations concluded between the two show that maladaptive coping mechanisms are more commonly seen in certain personality traits, the awareness of which can be useful in the promotion of specific adaptive mechanisms that can help the patients to deal with the stressors effectively.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

REFERENCES

1. NACO. Annual Report 2015-16:2015.
2. Erbelding EJ, Stanton D, Quinn TC, Rompalo A. Behavioral and biologic evidence of persistent high-risk behavior in an HIV primary care population. AIDS 2000;14:297-301.
3. Avants SK, Warburton LA, Hawkins KA, Margolin A. Continuation of high-risk behavior by HIV-positive drug users. Treatment implications. J Subst Abuse Treat 2000;19:15-22.
4. Pakenham KL, Dadds MR, Terry DJ. Relationships between adjustment to HIV and both social support and coping. J Consult Clin Psychol 1994;62:1194-203.
5. Krikorian R, Kay J, Liang WM. Emotional distress, coping, and adjustment in human immunodeficiency virus infection and acquired immune deficiency syndrome. J Nerv Ment Dis 1995;183:293-8.
6. Aldwin CM, Sutton KJ, Lachman M. The development of coping resources in adulthood. J Pers 1996;64:837-71.
7. Connor-Smith JK, Flachsbart C. Relations between personality and coping: A meta-analysis. J Pers Soc Psychol 2007;93:1080-107.
8. Costa PT, McCrae RR. Professional Manual – NEO-PIR; 1992.
9. Trobst KK, Herbst JH, Masters HL, Costa PT. Personality pathways to unsafe sex: Personality, condom use, and HIV risk behaviors. J Res Pers 2002;36:117-33.
10. Marting MS, Hammer AL. Coping Resource Inventory – Manual and Sampler Set. CA, USA: Mind Garden Inc; 2004.
11. Vollrath M, Knoch D, Cassano L. Personality, risky health behaviour, and perceived susceptibility to health risks. Eur J Pers 1999;13:39-50.
12. Hays RD, Shapiro MF. An overview of generic health-related quality of life measures for HIV research. Qual Life Res 1992;1:91-7.
13. Schmitt DP, Alcalay L, Allik J, Angleitner A, Ault L, Austers L, et al. Patterns and universals of mate poaching across 53 nations: The effects of sex, culture, and personality on romantically attracting another person’s partner. J Pers Soc Psychol 2004;86:560-84.
14. Boyle SH, Mark DB, Siegler IC, Williams RB, Barefoot JC. Conscientiousness as a Predictor of Survival in Coronary Patients. Annual Meeting of the American Psychosomatic Society. Phoenix, AZ; 2003.
15. O’Cleirigh C, Ironson G, Weiss A, Costa PT Jr. Conscientiousness predicts disease progression (CD4 number and viral load) in people living with HIV. Health Psychol 2007;26:473-80.
16. Ironson GH, O’Cleirigh C, Weiss A, Schneiderman N, Costa PT Jr. Personality and HIV disease progression: Role of NEO-PI-R openness, extraversion, and profiles of engagement. Psychosom Med 2008;70:245-53.
17. Wilson RS, Mendes de Leon CF, Bienias JL, Evans DA, Bennett DA. Personality and mortality in old age. J Gerontol B Psychol Sci Soc Sci 2004;59:P110-6.
18. Guillory JA, Sowell R, Moneyham L, Seals B. An exploration of the meaning and use of spirituality among women with HIV/AIDS. Altern Ther Health Med 1997;3:55-60.
19. Roohafza H, Feizi A, Afsah H, Mazaheri M, Behnamfar O, Hassanzadeh-Keshkali A, et al. Path analysis of relationship among personality, perceived stress, coping, social support, and psychological outcomes. World J Psychiatry 2016;6:248-56.
20. Suls J, Martin R, The daily life of the garden-variety neurotic: Reactivity, stressor exposure, mood spillover, and maladaptive coping. J Pers 2005;73:1485-509.
Yadav, et al.: Personality traits, individual coping resources, and their association in HIV-seropositive males

21. Verma R, Nagle YK, Ghosh R. Personality factors as determinants of coping resources among Indian air force officers. Int J Indian Psychol 2016;3:167-75.

22. Srivastava K, Singh AR, Chaudhury S. A comparative study of personality as a common pathway in HIV seropositive and Alcohol dependent cases on Five factor model. Ind Psychiatry J 2016;25:47-58.

23. Smith MC, Dust MC. An exploration of the influence of dispositional traits and appraisal on coping strategies in African American college students. J Pers 2006;74:145-74.

24. Corr CA, Nabe CM, Corr DM. Death and Dying Life and Living. 4th ed. U.S.A.: Thomson Learning Inc.; 2003. p. 539, 544-7, 557.

25. Erlen JA, Stilley CS, Bender A, Lewis MP, Garand L, Kim Y, et al. Personality traits and chronic illness: A comparison of individuals with psychiatric, coronary heart disease, and HIV/AIDS diagnoses. Appl Nurs Res 2011;24:74-81.

26. Hooker K, Frazier LD, Monahan DJ. Personality and coping among caregivers of spouses with dementia. Gerontologist 1994;34:386-92.