

ORIGINAL ARTICLE

Young people living with HIV/AIDS: the influence of network of relationships, coping and neuroticism on life satisfaction*

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ABSTRACT

OBJECTIVES: To investigate the effect of the variables network of relationships, neuroticism, and coping strategies on life satisfaction of HIV positive youths, and to present a descriptive profile of the sample for the studied variables.

METHODS: Forty-five HIV positive youths from three health care centers located in the metropolitan area of Porto Alegre, whose mean age was 18.7 years (standard deviation = 2.7), participated in this study. The following assessment instruments were used: a sociodemographic questionnaire, the Multidimensional Life Satisfaction Scale for Adolescents, the Network of Relationships Inventory, the Coping Strategies Inventory and the Neuroticism Factorial Scale. Data obtained with these instruments were analyzed using multivariate analysis of variance and covariance and linear multiple regression.

RESULTS: Young HIV carriers present high life satisfaction, although there is a decrease in satisfaction with friendships. As far as coping strategies are concerned, the means between coping strategies were similar. High levels of neuroticism were evidenced in the sample, especially in terms of depression, which was the best predictor of global life satisfaction for the sample.

CONCLUSIONS: We were able to identify the main difficulties of this group of HIV carriers, and, based on these findings, it will be possible to develop effective intervention programs.

Keywords: HIV, quality of life, stress, personality, interpersonal relationships, adolescents.

Introduction

AIDS has become a worldwide epidemic. According to the Joint United Nations Programme on HIV/AIDS,¹ AIDS is a unique phenomenon in the history of human kind because it has spread fast, with a broad reach and great impact. This epidemic has been affecting young people in general in an unbalanced manner, since people between 15 and 24 years old account for half of the new HIV cases in the world. In Brazil, according to the most recent statistical data provided by the Epidemiological Bulletin - AIDS and STD,² in 2007, 10.6% of women and 8.7% of men diagnosed as being infected with HIV belonged to the age group between 13 and 24 years old.

Many studies on HIV that have approached the adolescent population focus on important issues such as virus infection prevention³⁻⁵ or risk factors for or protection factors against HIV infection.^{6,7} However, there are few studies focusing on infected adolescents, mainly regarding their psychological aspects.⁸⁻¹⁰ Studies conducted in Brazil are even more rare.¹¹⁻¹³ The present study aims at assessing these psychological aspects, focusing on the assessment of HIV-infected youths' life satisfaction. According to Pavot et al.,¹⁴ life satisfaction is considered to be the cognitive component responsible for the subjective well-being. Life satisfaction is defined as the individual's global assessment of his/her own life. In addition, studies have suggested that certain variables can have an influence on the level of well-being and, as a consequence, on the level of satisfaction. The following items are among these variables: personality traits, life events and coping strategies, the presence of a social support network and the establishment of intimate relationships.¹⁵⁻¹⁸

Studies focused on HIV carriers have revealed that the way an individual faces the diagnosis depends on his/her previous psychodynamics. However, in general, people receive the diagnosis of HIV infection as an acknowledgement of finitude and limitation of future wishes. There is fear of abandonment, prejudice and social losses, as well as feelings of guilt, anger and panic.^{19,20}

Studies assessing the level of well-being or life satisfaction have found that there is a decrease in the sensation of well-being in seropositive adolescents.²¹ Problems like stress, prejudice and consequent reduction in the social support, depression, anxiety, difficulty in revealing his/her diagnosis to other people, as well as problems related to school performance were found in HIV-infected adolescents.^{8,22-24}

According to Wiener & Septimus,²⁴ the most serious problems caused by the HIV infection to adolescents appear when they have to establish relationships outside their families. The great difficulties lay in situations such as informing their condition to a sexual partner, practicing safe sex, fear of their partners' conclusions on how they were infected, guilt, feeling dirty or sexually abnormal. Therefore, it is important to highlight the importance of assessing the relationships that infected people establish with their friends and relatives and the opportunities they have to talk about their feelings and anxieties.

The positive diagnosis of HIV infection during a conflicting phase such as adolescence generates much anxiety in the adolescent's life. One of the possible ways to understand how seropositive adolescents deal with problems created by their diagnosis would be through the investigation of the coping strategies they use. Coping is defined by Lazarus & Folkman²⁵ as the cognitive and behavioral efforts to deal with specific external and /or internal demands that are considered to exceed the individual's efforts and resources. The importance of studying coping strategies lays in the fact that their effectiveness is related to positive results on people's physical and mental health aspects. Therefore, it is also possible to relate such effectiveness to life satisfaction.¹⁵

Meijer et al.,²⁶ in a study involving adolescents with chronic diseases, found that the coping strategies that appeared as important determinants for a positive psychosocial functioning were active strategies for problem solving. In addition, coping strategies that sought social support were also effective, but only when related to social skills. Therefore, there is a relationship between the variables linked to the network of relationships (social support/intimacy) and coping styles that may result in an increase or decrease in the level of life satisfaction.

Thus, the general objective of this study was to check if there was an effect of network of relationships, neuroticism and coping (independent variables) on the life satisfaction of seropositive adolescents (dependent variable). Our specific objective was to present a descriptive profile of the sample for all the above mentioned variables.

Method

Sample

Forty-five HIV-infected youths participated in the present study. Their ages ranged from 14 to 23 years old [mean = 18.7; standard deviation (SD) = 2.7]; 64.4% of them were females and were being treated at three health care centers located in the metropolitan area of Porto Alegre. Of the total number of subjects, 82.2% were being treated at the Therapeutic Care Service of Hospital Sanatório Partenon, 15.6% at the Testing and Counseling Center (CTA) in Viamão and 2.2% at the CTA of the Dermatology Outpatient Clinic of Porto Alegre. With regard to the exclusion criteria, illiterate and institutionalized youths were not included in this study. All patients being treated at the health care centers who belonged to the age group of interest and who accepted to participate in the study during the data collection period were included in our sample.

Most youths' educational level (60%) was between the 5th and 8th grade of elementary school and the majority of them were from low socioeconomic class (55.6%), whose mean income is approximately R\$ 927.00.²⁷ In terms of marital status, there was a prevalence of single participants (55.6% in the clinical group), and those who cohabited with a partner accounted for 31.1% of the sample. Data related to HIV demonstrated that the most frequent cause of infection was practice of unprotected sexual intercourse (68.9%) and that, of the 45 youths, 18 (40%) had been diagnosed with AIDS.

Instruments

The following instruments (in order of administration) were applied to all participants:

- Sociodemographic questionnaire including questions about virus infection. Social class classification was defined according to the Brazilian Economic Classification Criterion;²⁷
- The Multidimensional Life Satisfaction Scale for Adolescents (EMSV-A) by Arteché,²⁸ which consists of an adaptation of the scale designed by Giacomoni & Hutz²⁹ for children. This scale assesses life satisfaction by means of seven factors (self, compared self, family, school, non-violence, friendship and global). Its 57 items are answered using a Likert scale containing the following options: (1) not at all, (2) a little, (3) somewhat, (4) quite and (5) very much;
- the Network of Relationship Inventory (NRI), by Furman & Buhrmester,³⁰ adapted for Brazilian subjects by Marques & Horn.³¹ The inventory analyzes 11 dimensions of interpersonal relationships by means of 33 items. The dimensions included in the instrument are: conflict, relative power, punishment, satisfaction and seven dimensions of social support (companionship, instrumental aid, self-disclosure, nurturance, affection, admiration and reliable alliance). These dimensions were classified for each one of the following persons: mother, father, best friend, girlfriend/boyfriend/wife/husband/partner. The answers are recorded on a 5-point Likert scale that indicates the quality of the relationship with each one of the persons mentioned;
- The Coping Strategies Inventory developed by Folkman & Lazarus³² and adapted to Portuguese by Savóia et al.,³³ which assesses coping strategies using eight factors (confrontation, social withdrawal, self-control, social support, accepting responsibility, escape-avoidance, problem solving and positive reappraisal). Its 66 items are answered by the participant according to the frequency he/she uses each one of the strategies mentioned in specific situations, and the possible answers are: (0) never used this strategy, (1) used this strategy a few times, (2) used this strategy often, and (3) used this strategy very often;

- the Factorial Scale of Emotional Adjustment/Neuroticism (EFN),³⁴ an instrument that assesses the dimension of human personality called neuroticism/emotional stability (Big Five Factor model) by analyzing personality traits. The test includes 82 items divided into four subscales (Vulnerability

Scale, Psychosocial Maladjustment Scale, Anxiety Scale and Depression Scale). The items are recorded on a 7-point Likert scale, in which 1 = "totally inadequate, the sentence does not describe any of my characteristics," 4 = "neutral, somewhat" and 7 = "perfectly adequate, the sentence describes me perfectly well."

Procedures

During the initial phase of data collection, the investigators contacted three health care centers located in the metropolitan area of Porto Alegre. After the project was approved by the three institutions, the lists of HIV-infected patients whose age ranged from 14 to 23 years old were requested.

Based on the lists, the patients were invited to participate in the study when they attended the health care centers, or were actively sought and a special appointment was scheduled for the interview. Contact with patients outside the health care centers was not authorized only by the CTA of the Dermatology Outpatient Clinic, since this was not a usual practice in this center. Questionnaires were individually administered in a room made available at each health care center.

Data analysis

For data analysis, the Statistical Package for the Social Sciences (SPSS), version 13.0, was used. During database building, the variables related to the unanswered questions of the EMSV-A, the NRI, the Coping Strategies Inventory and the EFN were replaced by the mean of the group for those items.

First, the instruments were assessed from a psychometric point of view, and the data were analyzed using descriptive statistics, showing means and SD of the several measures. In order to meet our specific objectives, data from the EMSV-A, the NRI and the EFN were analyzed using the multivariate analysis of covariance (MANCOVA), and sex was included as an independent variable. Since the variable age was correlated with these instruments, it was used as a control factor in the analyses. As we did not find difference between sexes in the analyses of the Coping Strategies Inventory, we performed a multivariate analysis of variance (MANOVA), and the independent variable was the type of stressful situation experienced.

Finally, in order to meet the general objective of this study, we carried out a multiple regression analysis with the purpose of assessing the effect of the independent variables on the dependent variable (factors related to life satisfaction). In this analysis, we considered as independent variables those factors from the EFN, the Coping Strategies Inventory and the NRI that were correlated with the factor total life satisfaction.

Ethical aspects

This study project was approved by the Research Ethics Committee of Escola de Saúde Pública do RS (CEPS/ESO - 091/2006). Before the administration of the instruments, the patients aged 18 or older who accepted to participate in the study signed a written consent form. For the youths interested in taking part in the study who were younger than 18 years old, patients and parents or guardians were asked to sign the written consent form. In both cases, two copies of the document were signed. One of the copies was kept by the investigator and the other one was given to the participant.

Results

Multidimensional Life Satisfaction Scale for Adolescents (EMSV-A)

With regard to its psychometric aspects, the EMSV-A showed good internal consistency ($\alpha = 0.94$). [Table 1](#) shows the results of the analyses of means according to sex and age group for all factors in the scale and their total sum. It is important to highlight that we carried out ANOVAS (the

dependent variables were the EMSV-A factors and the independent variable was time of diagnosis and, afterwards, presence of AIDS diagnosis), although we did not find significant differences.

Through the analysis of the MANCOVA results, we found that the youths in our sample had, in general, a good level of life satisfaction, since the means of the EMSV-A factors ranged between 3.51 and 4,07. We observed some differences between sexes, since males had a significantly higher mean in the factors self and overall life satisfaction than the female participants.

Table 1 - MANCOVA results for the factors from the EMSV-A

Factors	Total (n = 45)	Female (n = 29)	Male (n = 16)	F
	Mean (SD)	Mean (SD)	Mean (SD)	
Family	4.07 (0.69)	3.95 (0.71)	4.28 (0.62)	0.60
Compared self	3.51 (0.77)	3.62 (0.77)	3.31 (0.74)	2.28
School	3.75 (0.76)	3.74 (0.77)	3.76 (0.78)	0.04
Non-violence	3.87 (0.72)	3.83 (0.77)	3.92 (0.63)	0.00
Friendship	3.63 (0.79)	3.47 (0.79)	3.92 (0.74)	1.61
Self	3.87 (0.81)	3.63 (0.86)	4.31 (0.50)	5.05*
Overall life satisfaction	3.72 (0.95)	3.45 (0.99)	4.21 (0.65)	4.03*
Total life satisfaction	3.77 (0.57)	3.67 (0.62)	3.97 (0.42)	1.03

EMSV-A = Multidimensional Life Satisfaction Scale for Adolescents; F = MANCOVA result;

MANCOVA = multivariate analysis of variance; SD = standard deviation.

* Significant difference between means, $p \leq 0.05$.

Network of Relationship Inventory

The NRI had good internal consistency. This analysis was carried out separately for each one of the persons classified: mother ($\alpha = 0.90$), father ($\alpha = 0.89$), best friend ($\alpha = 0.93$), and partner ($\alpha = 0.89$).

We also carried out analyses of covariance for the factors included in the NRI. These analyses were performed individually for each one of the relationships previously mentioned, with sex being the independent variable. [Table 2](#) shows only the results whose means are different between sexes due to the large number of factors.

Table 2 - MANCOVA results for the factors from the NRI

Factors	n	Total (SD)	Female		Male		F
			n	Mean (SD)	n	Mean (SD)	
Conflict with the father	24	2.00 (0.85)	17	1.74 (0.71)	07	2.61 (0.91)	22.36*
Satisfaction with the relationship with the father	24	3.68 (1.21)	17	3.94 (1.09)	07	3.04 (1.35)	24.15*
Nurturance for the father	24	3.31 (1.09)	17	3.41 (1.07)	07	3.09 (1.19)	4.86 [†]
Affection for the father	24	4.23 (0.95)	17	4.37 (0.84)	07	3.90 (1.18)	4.14 [†]
Admiration for the father	24	3.36 (1.06)	17	3.56 (1.05)	07	2.85 (0.97)	25.54*
Reliable alliance with the father	24	4.12 (1.04)	17	4.21 (0.99)	07	3.90 (1.21)	5.44 [†]
Satisfaction with the relationship with the best friend	38	3.65 (0.91)	25	3.37 (0.91)	13	4.20 (0.64)	11.66*
Affection for the best friend	38	3.45 (0.94)	25	3.17 (0.88)	13	4.00 (0.84)	4.87 [†]
Punishment by the best friend	38	1.70 (0.61)	25	1.44 (0.56)	13	2.20 (0.68)	7.76 [†]

F = MANCOVA result; MANCOVA = multivariate analysis of variance; NRI = network of relationship inventory; SD = standard deviation.

* Significant difference between means, $p \leq 0.01$.

[†] Significant difference between means, $p \leq 0.05$.

[Table 2 - Click to enlarge](#)

The MANCOVA results showed that the only factors that had difference between sexes were those related to relationships established between the youths and the father figures and between the youths and their best friends. Female participants had significantly higher means in the factors related to the relationship with their fathers (satisfaction with the relationship with the father, nurturance for the father, affection for the father, admiration for the father, and reliable alliance with the father), except for factor conflict with the father, whose mean was higher among male participants. Male youths, on their turn, had significantly higher means in the factors related to the

relationship with their best friend (satisfaction with the relationship with the best friend, affection for the best friend, and punishment by the best friend).

Coping Strategies Inventory

The Coping Strategies Inventory had good internal consistency ($\alpha = 0.90$). The analyses of variance were carried out using the eight factors of the instrument as dependent variables and the stressful situation as the independent factor. The stressful situations were classified into two categories. The first one was related to HIV and included situations such as finding out about the HIV positive diagnosis, finding out that their child was contaminated by means of vertical infection or getting very ill/being hospitalized due to infection complications; and the second one was linked to several situations not related to HIV. The results for all factors are shown in [Table 3](#).

Table 3 - MANOVA results for the factors from the Coping Strategies Inventory

Factors	Stressful situation			F
	Total (n = 45) Mean (SD)	HIV (n = 20) Mean (SD)	Non-HIV (n = 25) Mean (SD)	
Positive reappraisal	1.53 (0.67)	1.81 (0.75)	1.30 (0.52)	7.00 [†]
Social support	1.46 (0.71)	1.62 (0.84)	1.34 (0.57)	1.73
Accepting responsibility	1.38 (0.79)	1.74 (0.78)	1.10 (0.70)	8.42 [†]
Self-control	1.34 (0.65)	1.58 (0.74)	1.14 (0.49)	5.90*
Withdrawal	1.24 (0.75)	1.43 (0.80)	1.09 (0.68)	2.35
Escape and avoidance	1.22 (0.60)	1.41 (0.62)	1.06 (0.56)	4.02*
Confrontation	1.09 (0.50)	0.92 (0.49)	1.23 (0.47)	4.44*
Problem solving	1.09 (0.65)	1.24 (0.74)	0.97 (0.55)	2.04

F = MANOVA result; MANCOVA = multivariate analysis of variance; SD = standard deviation.

* Significant difference between means, $p \leq 0.05$.

[†] Significant difference between means, $p \leq 0.01$.

The results show that the most frequent strategies used by the participants were classified into the factor positive reappraisal. However, the means for all factors were quite similar, ranging between 1.09 and 1.53. There were significant differences between the means of youths who reported the stressful situation related to HIV and those who described other situations. While the first group used self-control, accepting responsibility, escape-avoidance and positive reappraisal strategies more often, the second group used confrontation strategies more often.

Factorial Scale of Emotional Adjustment/Neuroticism (EFN)

The EFN had good internal consistency, with Cronbach's alpha of 0.95. The four factors of the scale were employed in the analysis of covariance, and the results are shown in [Table 4](#).

Table 4 - MANCOVA results for the factors from the EFN

Factors	Sex		F
	Female (n = 29) Mean (SD)	Male (n = 16) Mean (SD)	
Vulnerability	80.72 (25.67)	72.56 (23.06)	0.07
Anxiety	92.82 (33.13)	85.56 (28.27)	0.01
Maladjustment	23.55 (8.26)	32.12 (16.68)	7.70*
Depression	60.20 (28.00)	45.37 (14.22)	2.05

EFN = Factorial Scale of Emotional Adjustment/Neuroticism; F = MANCOVA result; MANCOVA = multivariate analysis of variance; SD = standard deviation.

* Significant difference between means, $p \leq 0.01$.

The results demonstrate significant difference between sexes only regarding the factor maladjustment. In this factor, male youths had a higher mean than female participants.

Multivariate linear regression analysis

Since the number of subjects of our sample was small, in order to carry out the analysis, we decided to use a broader factor in the NRI, social support, which includes the following dimensions: companionship, instrumental aid, disclosure/intimacy, nurturance, affection, admiration and reliable alliance, as defined by Marques & Horn.³¹ We performed correlation analyses between sex, age, the factors from all scales (the NRI, the Coping Strategies Inventory and the EFN) and the factor total life satisfaction of the EMSV-A. The factors that showed correlation were age, vulnerability (EFN), anxiety (EFN), depression (EFN), confrontation (coping), escape-avoidance (coping), social support from the mother (NRI), social support from the best friend (NRI), satisfaction with the father (NRI) and satisfaction with the mother (NRI). Since the two last factors also assess satisfaction, similarly to the EMSV-A, they were not included in the multivariate linear regression analysis. Therefore, with regard to this analysis, we used age and the factors depression, anxiety and vulnerability from the EFN, the factors confrontation and escape-avoidance from the Coping Strategies Inventory, and the factor social support from the mother and social support from the best friend from the NRI as independent variables. [Table 5](#) shows the results of this analysis.

Table 5 - Results of the multivariate linear regression analysis

Independent variables	Total life satisfaction			
	β	R	R ²	Adjusted R ²
Depression	-	0.78	0.61	0.60
Social support from the mother	0.62	0.83	0.69	0.67
Confrontation	-	0.85	0.73	0.70
	0.22			

β = standard value of the inclination of the regression line; R = correlation between all predictor variables and the criterion variable; R² = variance explained by the model; Adjusted R² = R² adjusted in relation to the sample.

The results of the multivariate linear regression analysis suggest that the factors depression (EFN), social support from the mother (NRI) and confrontation (Coping Strategies Inventory) together account for 70% of the variance in the youths' total life satisfaction. Depression alone was responsible for 60% of this variance.

Discussion and conclusions

Our results demonstrated that the participants had a good level of life satisfaction. These results are not in agreement with studies that have shown that seropositive adolescents and/or youths tend to have a reduced level of well-being or life satisfaction.^{8,21} Due to such findings, we tried to investigate which aspects could be responsible for promoting life satisfaction in this group. Therefore, we analyzed the characteristics of the relationships established by HIV-infected youths, the stressful situation faced by them and the associated coping strategies as well as neuroticism. A multiple regression analysis was carried out with the purpose of defining which variables were actually predictors of life satisfaction in this group.

Also in terms of the analysis of the EMSV-A results, we found a high level of life satisfaction related to the dimension family. Such dimension had the highest mean among all dimensions for the whole

group (4.07, SD = 0.69), and there was no significant difference between sexes. This mean shows that the youths from our sample were quite satisfied with the aspects of their lives related to family. In addition, in terms of the influence of the family on the youths of our sample, using the multiple regression analysis, we found that the social support from the mother (NRI) was one of the factors responsible for the prediction of the youths' life satisfaction. These results suggest that, in agreement with what was shown by previous studies,²¹ the social support from parents is an important component for the promotion of aspects related to the well-being of seropositive youths.

At the same time as family had the highest mean among the EMSV-A dimensions, we found that the dimensions compared self (example: "other young people are happier than me") and friendship had the lowest means (mean = 3.51, SD = 0.77; mean = 3.63, SD = 0.79, respectively). Even though these means are close to classification 4, which indicates that the youths are quite satisfied with these areas of their lives, it is possible to assume that, for seropositive youths, there is a certain reduction in the satisfaction related to friendship. Wiener & Septimus²⁴ reported that among the most serious problems that HIV infection can cause in the life of youths is the moment they have to establish relationships outside the family due to the fear of their peers' conclusions on how they were infected and because of the feeling of guilt. Such issues can interfere with the quality of the relationship that these youths establish with their peers; however, in spite of that, in the multiple linear regression analysis, the factor social support from friends could not predict the level of satisfaction in this group.

In addition to the presence of one of the factors from the NRI as a predictor variable in the regression analysis, we found some differences between female and male youths by means of the MANCOVA used to analyze all factors comprising the instrument. We found that female participants had significantly higher means in the factors related to the relationship with the father. The factors belonging to a broader factor (social support) were responsible for distinguishing this group, including affection for the father, admiration for the father and reliable alliance with the father. The female participants also had higher means for the factors satisfaction with the relationship with the father and nurturance for the father. The male youths, on their turn, had higher means for the factor conflict with the father. They also had significantly higher means in the factors related to the relationship with the best friend (satisfaction with the relationship with the best friend, affection for the best friend, and punishment by the best friend). This seems to show that whereas, for the female participants, the father seems to be a figure that offers positive support, for the male participants, the conflicting relationships with the father are more frequent. On the other hand, the friendship relationships and both their positive (satisfaction and affection) and negative characteristics (punishment) are stronger for the male group. Such findings are not in agreement with the results from non-HIV-infected youths, which characterize the relationships of female youths with their friends as being deeper and more affective.^{35,36}

Other factors that interfere with the level of well-being and life satisfaction of HIV-infected individuals are the stressful events and the coping strategies used to deal with them.^{8,22} With regard to the strategies used by the participants to deal with problems, in general, we did not find a great variation in the mean of factors. We found that the only factor whose mean was close to classification 2 was positive reappraisal (mean = 1.53, SD = 0.67). This classification means that the participant "often" used certain strategies. For all the other factors, the overall means were close to classification 1, which means they used the strategies "a few times". We also found that the group of participants that used positive reappraisal more often was the group of youths that related the strategies to a situation connected to HIV.

There were significant differences between the means of youths who reported the stressful situation related to HIV and those who described other situations. While the first group used self-control, accepting responsibility, escape-avoidance and positive reappraisal strategies more often, the second group used confrontation strategies more often. Even though the mean of the factor confrontation was the only one significantly higher for the group that did not relate the stressful situation to HIV, the highest mean of strategies used was for the factors social support and positive reappraisal. It is worth highlighting that, in the multiple regression analysis, the only factor from the Coping Strategies Inventory that predicted the life satisfaction of the sample as a whole was confrontation, and the decrease in the use of such strategies resulted in an increase in life satisfaction. Taking into consideration that in this study we used the guideline of effectiveness assessment of coping strategies suggested by Aldwin & Reverson,¹⁵ which relates effective coping to

aspects linked to physical and mental health, we can assume that, for the participants of the present study, the use of confrontation strategies are not effective to achieve life satisfaction.

Due to the fact that the group of youths that reported the stressful situation related to HIV used confrontation strategies in a significantly lower mean than the other participants, it is possible to raise the hypothesis that those youths probably considered the infection as a stressful situation that could be faced. Probably, the fact that they are able to understand that the infection with the virus is a serious event will make them take care of their health and seek adequate treatment. In addition to having a lower mean in the factor confrontation, these youths had a significantly higher mean in the factor positive reappraisal. Even though this last factor was not a predictor variable of life satisfaction in the group, its use may have a positive influence on these participants' life, since it means that the person thought about the situation and could learn something with it (example of the factor positive reappraisal: "I've changed or grown up as a person in a positive manner"). We also found that the same group had significantly higher means in other strategy factors, showing that the youths who associated the stressful situation to HIV had a larger repertoire of coping strategies and used them more often.

In terms of the EFN, we found that the means of the youths included in our sample were within the intermediate percentiles in comparison with the standardized sample of the instrument³⁴ only regarding the factor vulnerability (60th percentile) for males and maladjustment (50th percentile) for females. Indeed, in this last factor, the male participants had a significantly higher mean than the female subjects, and this mean was classified as a high percentile (70th percentile). Male youths also had high percentiles for anxiety (75th percentile) and depression (65th percentile). On the other hand, female youths had high percentiles for vulnerability (65th percentile), anxiety (75th percentile) and very high percentile for depression (85th percentile).

According to the manual of the EFN,³⁴ high results in the factor vulnerability suggest individuals with lack of self-confidence and low self-esteem, who are much concerned about being accepted by others and suffer when it does not happen. On the other hand, the factor maladjustment is related to aggressiveness and hostility, as well as risk behaviors such as sexual risk behaviors, alcohol and drug abuse and gambling.

Even though we did not find a significant difference between sexes in terms of vulnerability, based on the interpretation of the mean scores of the groups, we can assume that this factor is more related to the female participants of our sample than to the male subjects. Males, on their turn, might present characteristics more deeply related to maladjustment.

Based on these results, it is possible to conclude that the personality traits of HIV-infected female youths, such as lack of self-confidence and necessity of being accepted by others (often by their partners), which are demonstrated by the high mean in the factor vulnerability, lead them to expose themselves to risk of infection. For men, on their turn, characteristics such as risk behavior, evidenced by the high mean in terms of maladjustment, have contributed to the exposure to infection. Results from previous studies support these interpretations, mainly relating them to specific characteristics of sex and culture.^{37,38} According to these studies, female youths tend to focus on affective relationships, being submissive to partners when they refuse to use a condom during sexual intercourse, even as a manner to prove that they are loyal to their partners and trust them, putting their on health at risk. On the other hand, men, in spite of using condoms more frequently, tend to expose themselves to dangerous situations more often, such as use of drugs, earlier beginning of sexual activity and larger number of partners.

In the multiple linear regression analysis, the variable that better predicted the participants' life satisfaction was depression (absence of). Therefore, we conclude that personality traits that characterize the factor depression from the EFN, such as feeling lonely, low expectations regarding the future and lack of goals,³⁴ are decisive for the reduction in these youths' level of life satisfaction.

Our results also indicated that seropositive youths, both males and females, had high means for depression and anxiety. Depressive and anxious symptoms have already been found in previous studies involving seropositive adolescents during their transition to adulthood,⁸ which characterizes such phase as being critical for HIV carriers.

An intriguing fact is that the sample had, at the same time, high means for the EMSV-A dimensions and high means for the factor depression from the EFN, since we know that the dimension total life satisfaction is negatively correlated with the latter variable. The possible explanation for that might be that the variables related to coping strategies or social support could be acting as moderators between depression and total life satisfaction, considering moderator variables as those variables that have an influence in the direction or strength of the relationship between a dependent and an independent variable.³⁹ That is, even presenting depressive characteristics, youths with good familial and social support (mainly maternal) and who are able to use several adequate strategies to deal with stressors can have a good level of satisfaction.

This study provides the contribution of offering a deeper analysis of the psychosocial issues, which do not receive so much attention in studies involving HIV-infected youths. Based on our results, it is possible to identify the main difficulties of this group and, therefore, to develop effective intervention programs.

However, since there moderator variables may have an influence on the final result of life satisfaction, the fact that the sample was comprised by 45 participants is a limitation of the present study. This is a small sample for the performance of analyses such as structural equation modeling, which are adequate for the investigation of models containing moderator variables. Therefore, we recommend that further studies involving a larger number of participants are carried out and that other variables are also assessed so that an explanatory model of life satisfaction of HIV-infected youths can be developed.

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