

**TIME PERSPECTIVE  
AND SELF-REPORTED  
HEALTH STATUS  
AMONG PEOPLE LIVING  
WITH HIV**

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**Abstract:** The study aimed to estimate the association between the time perspective and self-reported health status among people living with HIV. There is evidence that people living with HIV with an unbalanced temporal perspective may be in a situation of greater vulnerability in relation to their health. A cross-sectional study, conducted with 281 people with HIV. We used two instruments for data collection: the socioeconomic and behavioral data questionnaire and the Time Perspective Inventory. To estimate the prevalence ratios, Poisson regression analysis with robust variance was used. The studied group is more oriented towards the future and the positive-past. The negative-past was negatively associated with a positive self-reported health status, and the future was positively associated with positive health. It was observed that a greater focus on the future ( $p=0.010$ ) was more associated with a positive self-reported health status than a negative-past ( $p=0.017$ ). It is suggested that health professionals contemplate psychosocial variables, such as the time perspective, in educational processes that promote self-care.

**Keywords:** Time Perspective, Health Risk Behaviors, Quality of Life, HIV, Self-care.

## INTRODUCTION

The time perspective is formed in unconsciousness and results in conscious thoughts and behaviors. Time perspective may be defined as “the way individuals and institutions are time-oriented”<sup>1-2</sup>. In this sense, a time perspective directed towards one of the time dimensions, be it the past, the present, or the future, may influence the individual’s health-disease process.

People living with HIV with an unbalanced time perspective may be in greater health vulnerability<sup>3</sup>. Despite the social changes over the years in the AIDS scenario, such as the reduction in stigma, people with HIV

experience social contexts of prejudice and discrimination<sup>4</sup>. Stigma may lead to feelings of guilt, agony, isolation, anxiety, depression, hopelessness, people’s judgment, concerns about the disclosure of HIV-positive diagnosis, the relationship with negative self-image, with judgment, among others, that trigger processes of deterioration in the individual’s general well-being<sup>5-6</sup>.

In this context, the time perspective may influence the self-reported health status, as well as affect the individual’s health status, as subjective factors and experiences can interfere with the positive or negative self-reported health status<sup>7</sup>. It is highlighted that subjective well-being is a topic that has been greatly assessed lately and focuses on how and why the individual experiences their life positively, becoming a construct for the analysis of quality of life<sup>8</sup>.

The way an individual thinks about the past, the present moment, and the future, may influence different life experiences. Decision-making can have a dominant influence on one of the time dimensions, that is, for some people, remembering past situations and assessing their costs and benefits are essential to current decisions, and such memories can be traumatic, negative or, nostalgic and positive<sup>9-12</sup>. In this context, the subjective self-reported health status is configured as the personal understanding someone has about self-health and depends on his/her particular experiences<sup>13-14</sup>. It is understood that time perception is part of the individual’s experiences.

The construction of the time perspective is strongly associated with well-being and has become a major aspect of individual subjective experience<sup>1</sup>. It must be considered that the time perspective is one of the determining forces of human life that influence behavior, attitudes, and decision-making<sup>10-15</sup>.

Considering that time orientation may influence individual behaviors and attitudes, we intend to investigate the relationship between the time perspective and the self-reported health status of people living with HIV. The study aimed to estimate the association between the time perspective and the self-reported health status among people living with HIV. It is understood that the assessment by health professionals of this relationship may contribute to improving the quality of life of this population.

## METHODS

Participation in the study was voluntary and the ethical and legal aspects involving research with human beings following Resolution 466/2012 of the National Health Council. The project was approved by the Research Ethics Committee of the Municipal Health Secretariat of Rio de Janeiro (Opinion no. 1,441,788).

This was a cross-sectional, descriptive, and analytical study, conducted with a sample of 281 individuals living with HIV. Data collection took place at four specialized HIV care services, located in the State of Rio de Janeiro, Brazil, in 2016.

This was a convenience sampling stratified among care services and individuals. Subjects were invited to participate in the study, during follow-up in these services. To take part in the study, the following inclusion criteria were adopted: be positive HIV, be awaiting care at the services, age 18 years or older, and be in good clinical conditions with autonomy to answer the questionnaires. Subjects who declared themselves illiterate, with some visual impairment, or were not in good clinical conditions, due to the need for reading and interpretation to answer the self-applied instruments, were excluded.

Two instruments were used for data collection: a socioeconomic and behavioral

data questionnaire, and a short version of the Zimbardo Time Perspective Inventory (ZTPI-25), validated in a Brazilian sample<sup>16</sup>. The socioeconomic and behavioral data questionnaire comprises variables such as the city of residence, sex, sexual orientation, age, education, employment status, income, marital status, people they live with, religion, the form of HIV infection, and status of self-reported health. The short version of the Time Perspective Inventory has 25 items, divided into five subscales related to the negative-past, positive-past, hedonistic-present, fatalistic-present, and future. The instruments were self-applied by the participant, while he/she was in the health services' waiting room, after invitation, and signing of the Informed Consent Form (ICF).

The independent variable of this study was the time perspective. It was assessed using the ZPTI-25, representing propositions about beliefs, preferences, and values of time experiences<sup>16</sup>. Negative-past, which refers to a negative perception of the past; positive-past, which has items that show a positive view of past events; hedonistic-present, which encompasses items on hedonistic behaviors and attitudes of the present; the fatalistic-present, which deals with items that express hopeless attitudes towards life and the future represents planning and future expectations. Each ZPTI-25 item was scored on a five-point Likert scale (1 to 5). ZTPI-25 had its psychometric properties (reliability and validity) tested in a sample of people living with HIV in Brazil. This version was considered adequate, with a satisfactory adjustment, stable structure, and maintained satisfactory internal consistency indexes.

The dependent variable was the participants' self-reported health status. Self-reported health status was classified as negative health (fair or poor) and positive health (excellent, very good, or good). We consider the positive

self-reported health status as an outcome of the study.

Descriptive statistical procedures were used to express the results in absolute and relative frequencies, means and standard deviations, and minimum and maximum values. Data were analyzed with IBM SPSS Statistics for Windows (IBM Corp., SPSS 21.0, 2012). The mean of the items in each subscale was used to establish the time perspective score.

The confounding covariates were sex, age, people they live with, religion, sexual orientation, and form of HIV infection. A bivariate analysis was conducted to identify factors associated with the positive self-reported health status; for this purpose, the prevalence ratios (PR) and respective 95% Confidence Intervals (CI) were calculated, and Pearson's chi-square test was used to analyze statistical significance.

Poisson regression analysis with robust variance was used to estimate the prevalence ratios and respective 95% CI. It is noteworthy that such regression converts the Odds Ratio (obtained in the logistic regression models) into prevalence ratios, appropriate for this type of cross-sectional study. To maintain the variable in the final model, a  $p$ -value  $\leq 0.05$  criterion was adopted.

## RESULTS

The socioeconomic characteristics of the participants are presented in Table 1. The study included 281 people living with HIV, with ages ranging between 18 and 72 years (mean = 41.1 years, standard deviation (SD) = 12.8 years). Most were men, with a high school education, engaged in some remunerated activity, and were religious. The prevalence of positive self-reported health status in the studied sample was 234 (82.9%).

The time perspective scores, according to each subscale, are presented in Table 2. The mean scores ranged from 2.75 (hedonistic-

present) to 3.85 (future). Considering the 95% confidence interval (CI) it is verified that the highest time perspective score was observed in the future subscale, followed by the positive past subscale. By contrast, the lowest time perspective scores were verified in the hedonistic-present and fatalistic-present subscales, indicating an opinion about time focused on the future and the positive past, not so focused on the present.

Table 3 shows the prevalence ratios (PR), 95% CI, for the positive self-reported health status with the time perspective subscales. The future was independently and positively associated with positive health, while the negative past was independently and negatively associated with a positive self-reported health status. It was observed that a greater focus on the future ( $p=0.010$ ) was more strongly associated with a positive self-reported health status than a negative past ( $p=0.017$ ).

The data reveal that a greater inclination towards the negative past results in a 3.1% decrease in the probability of people living with HIV classifying their health status as positive, and that the greater the orientation towards the future, the greater the probability of perceiving health as positive, with a 5.3% increase in probability.

## DISCUSSION

According to the results presented, as participants are oriented towards the future, a high prevalence of optimistic self-reported health status is observed, revealing that the time perspective is a marker of the self-reported health status among people living with HIV. We should emphasize that a negative self-reported health status may be a predictor of increased risk of morbidity and mortality when compared to individuals who have a positive self-reported health status<sup>17</sup>.

Variable	n	(%)	Mean ± SD
Age (years)			41,1 ± 12,8
Total	281	(100.0)	
Sex			
Male	193	(68.7)	
Female	88	(31.3)	
Total	281	(100.0)	
Education			
Elementary school	48	(17.1)	
High School	162	(57.6)	
Higher education	71	(25.3)	
Total	281	(100.0)	
Paid activity			
Yes	186	(66.2)	
No	95	(33.8)	
Marital status			
Has a partner	142	(50.5)	
Does not have a partner	139	(49.5)	
Total	281	(100.0)	
Religion			
Has religion	207	(73.6)	
No religion	74	(26.3)	
Total	281	(100.0)	
Self-reported health status			
Negative health	48	(17.1)	
Positive health	233	(82.9)	

SD, standard deviation; HIV, human immunodeficiency virus; MSM, men who have sex with other men.

(\*) Classification according to IBGE (Brazilian Institute of Geography and Statistics).

Table 1 - Sociodemographic characteristics of the study participants. Rio de Janeiro, 2016.

Time Perspective Subscales	Time Perspective Scores
Future	3.85
Past-positive	3.56
Negative-past	3.09
Present Fatalist	2.90
Present-hedonistic	2.75

Table 2. Scores from the temporal perspective of people living with HIV participating in the study. Rio de Janeiro, 2016.

Time Perspective	PR <sup>†</sup>	CI95%	p-value
Future	1.053	1.012-1.095	0.010
Past-positive	0.969	0.945-0.994	0.017
Negative-past	1.019	0.990-1.049	0.200
Present Fatalist	0,993	0,966-1,021	0,642
Present-hedonistic	1,005	0,977-1,033	0,731

PR, prevalence ratio; 95%CI, 95% confidence interval.

† Adjusted for sex, age, people they live with, sexual orientation, religion and form of HIV infection.

Table 3. Association of temporal perspective with positive health perception. Rio de Janeiro, 2016.

The time perspective may be a predictor of several behaviors and cognitions that influence health, quality of life, and health care. The time perspective is understood as one of the key abilities in people's lives and has an impact on behavior, attitudes, and decision-making. However, usually, the individual is not aware of such influence, making the time perspective into something unconscious. However, by making it conscious, the individual may control it, as well as manage and conduct life more happily and successfully<sup>(10)</sup>. Reduced time perception, a critical component of decision-making, may represent a risk factor for psychiatric conditions<sup>18</sup>.

The relationship between the predominance of orientation towards the negative-past and higher levels of suffering and anguish in the present has already been demonstrated<sup>19</sup>. These time perspectives trigger negative perceptions of self-image, living conditions, interpersonal relationships, and social support. Furthermore, recalling the past from a negative perspective may lead to traumatic experiences about the disease, generating psychological suffering and, consequently, a negative assessment of the quality of life by people with HIV<sup>20</sup>.

A phenomenological study that assessed health from the perspective of people living with HIV showed a comprehensive self-reported health status, emphasizing that well-being is an important variable to benefit from good health<sup>21</sup>. However, dealing with constant

memories of negative-past experiences can affect current life<sup>22</sup>, reinforcing that orientation towards the negative-past causes obstacles in dealing with conflicting and stressful situations, often found among people living with HIV<sup>23</sup>.

A study on time perspective and well-being<sup>24</sup> observed that satisfaction with the time perspective of life in the past may strongly influence the present and the future. On the other hand, satisfaction towards the past influenced satisfaction with current life. The dimension of the future-oriented time perspective was associated with psychological well-being.

Time perspective focused on the dimensions of the negative-past and future were considered socioeconomic moderators of quality of life for people living with HIV<sup>23</sup>. Thus, the authors concluded that the quality of life of people living with HIV is also a result of time perceptions in their life experiences and not just their socioeconomic conditions. In this sense, the idea of time may have repercussions for people's quality of life<sup>25</sup>.

Some limitations should be considered, such as the cross-sectional design that limits the establishment of a relationship between the time perspective and the self-reported health status; the current study was constituted from the adoption of a non-probabilistic sample, which limits comparison with other studies. However, this is the first original study to assess and identify the time perspective as a

predictor of self-reported health status among people living with HIV.

## CONCLUSIONS

The present study provides the potential for applying its results in the planning of health programs and actions aimed at people living with HIV, using the time perspective as a predictor of adherence to treatment, medication, healthy lifestyle, as well as greater social and family involvement. Hence, it is recommended that health professionals who work with people living with HIV consider psychosocial variables, such as the time perspective, in educational processes that promote self-care, as a tool to achieve a healthier life.

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