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## RESEARCH ARTICLE

### Time Perspective and Quality of Life in Persons Living with HIV in the Brazilian Context

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#### ABSTRACT

**Background:** Time perspective can be an important variable for the understanding the quality of life of people living with HIV/AIDS.

**Aims:** The objective was to examine the relation between quality of life and time perspective among persons living with HIV receiving care from public health services in Brazil.

**Methods:** Data were collected at four public health services in Brazil. Hierarchical regression analyses were then performed for each of six quality of life domains.

**Results:** The subscales associated with high quality of life in physical and level of independence domains were low past-negative and high future orientation; psychological and environmental domains were low past-negative, high past-positive and high future orientations; social relations domain were high past-positive and high future orientations; and spirituality, religion and personal beliefs domain was low past-negative orientation.

**Conclusion:** The hypothesis that time constructs have implications for the experience of the disease and for evaluation of quality of life was proven determined by positive orientations like future and past-positive and past-negative orientation.

**Keywords:** quality of life; time perspective; health-related quality of life; time perception; AIDS.

## Introduction

Since the onset of the AIDS epidemic, Brazil has developed programs and public policies to provide for persons living with HIV/AIDS. Although priorities have shifted over the years, it continues to defend human rights by producing and distributing antiretroviral therapy (ART) and condoms through the public health system. Nonetheless, the focus has been on biomedical, social, and political responses, and the perception of control of the epidemic is controversial<sup>1-4</sup>.

According to the Ministry of Health, the epidemic is stabilized in the Brazilian context, while the United Nations Program on HIV/AIDS (UNAIDS) sees a growing epidemic among vulnerable groups. Epidemiological data for Rio de Janeiro State show high rates of infection among young gays and high mortality from AIDS, which does not characterize a controlled epidemic<sup>4-5</sup>. In Brazil, 41,909 new cases of HIV infection were registered in 2019. In the state of Rio de Janeiro, a detection rate also shows a downward trend, but the mortality rate (7.1/100 thousand inhabitants) has a coefficient above the national average (4.1)<sup>5</sup>.

The AIDS has been construed from the outset, not only in the scientific truth's context, but also from common discourses, ideologies, and values, and has established as an epidemic of meanings, stigmas and discrimination. Previously associated with death, since the advent of ART and the resulting reduction in morbi-mortality, it has

come to be characterized as a progressive, chronic disease calling for daily care, complex treatment, and therapy, making it crucial to evaluate the quality of life (QOL) of persons living with HIV/AIDS<sup>6</sup>.

Understanding QOL is an important factor for HIV/AIDS management in public health policies and is among the goals of the World Health Organization (WHO). The positive or negative assessment of the seropositive person's QOL hinges on a combination of individual and social factors. The components that make up this universe can be seen to interrelate constantly, given that the infection affects various aspects of QOL<sup>7</sup>.

Studies have reported the importance of psychosocial aspects in evaluating QOL in different chronic disease populations and contexts. The need to adapt to the new condition of life has psychological, social and physical repercussions, in addition to arousing feelings like anxiety and depression, which affect QOL directly<sup>8-9</sup>. QOL assessment provides an indicator of the health impact of AIDS and the effects of the interventions, as well as allowing the planning interventions to meet the new needs identified. Studies indicate that QOL assessed as high indicates normality in daily life, capacity for work, adherence to treatment and family support, while QOL assessed as poor associates with higher mortality. Also, high QOL has been associated with psychosocial variables such as economic position, level of schooling, social and family support, as well as good personal

relationships free from discrimination, stigma and marginalisation<sup>6,10-11</sup>.

Time perspective (TP) has been considered the primary context through which people understand and give meaning to their lived experiences. TP is defined as “the often-unconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events”<sup>12:1271</sup>. It has gained prominence in studies of wellbeing as a strong motivator of healthy practices and important to understanding health-related behaviour<sup>12-14</sup>.

Some studies have investigated the relation between TP and QOL, finding potential for orientation towards the past, present and future to produce effects in healthy or unhealthy behaviour<sup>8,12-13,15</sup>. In relation to AIDS, high QOL is related to low past-negative orientation and to high future-positive orientation<sup>15</sup>.

The study hypothesis is that the time perspective establishes relations with QOL and with the experience of the disease. The purpose of this study was to examine the relation between QOL and TP among persons living with HIV receiving care at public health services in Rio de Janeiro, Brazil. Considering the particularities of the life situations of subjects living with HIV, these relationships can influence the practices of healthcare and nursing, as well as health policies for these people.

## Method

### *Participants and sampling*

A cross-sectional study with a non-probability convenience sample, chosen from information provided by the health services on the number of people with HIV/AIDS in follow-up. To calculate the number of participants, an estimated prevalence of 11% of low quality of life<sup>16-17</sup> was considered. In view of the large number of people infected with the HIV and the reorganization of services in the city of Rio de Janeiro, three units were selected through sampling with daily care for people living with HIV. The total of intentional sample comprised 281 individuals with HIV.

Data were collected from 2016-2018, at four health specialized AIDS care services located in the state of Rio de Janeiro, Brazil, one in the municipality of Niterói, with 101 patients, and three in the municipality of Rio de Janeiro, with 180 patients.

These individuals were invited to the study when they attended the health services within the period set for data collection, until the sample size set for each municipality had been reached. In cases of refusal, replacements were chosen until the total sample size was attained. The inclusion criteria were seropositive for HIV; aged 18 years or more; in follow-up at the service selected, and in clinical and psychological condition to respond to the research instruments. Individuals self-declared illiterate, with severe sight impairment or lacking necessary clinical condition were

excluded. Participants were invited to take part in the research study on a voluntary basis.

### *Data collection and instruments*

For data collection, three self-applied instruments were used. First, socioeconomic and clinical data: the instrument, developed by the authors, contained questions directed to identification and health behavior, as well as information on current HIV infection status.

This study used the WHOQOL-HIV bref, which has 31 questions distributed over six domains, to estimate aspects of the lives of persons with HIV/AIDS: physical (bodily pain, sleep, tiredness); psychological (cognitive capacity, self-esteem, self-image, positive and negative feelings); environmental (physical security, home, accessibility to and quality of healthcare, possibility of having information, transport, pollution, noise, spare-time activities); level-of-independence (mobility, employment, treatment dependence); social relations (interpersonal relationships, social support, sexual activity, social integration in relation to seropositivity); and spirituality, religion and personal beliefs (spiritual connection and personal spiritual connection, death and dying)<sup>18</sup>. The QOL domains were calculated using simple means and grouping the questions corresponding to each domain<sup>19</sup>. Cronbach's alpha was calculated for each of the six domains: physical ( $\alpha = 0.68$ ), psychological ( $\alpha = 0.70$ ), level of independence ( $\alpha = 0.63$ ), social relations ( $\alpha = 0.73$ ), environment ( $\alpha = 0.72$ ) and spirituality, religion, and personal beliefs ( $\alpha = 0.61$ ). All domains returned acceptable internal consistency<sup>20</sup>.

The Zimbardo Time Perspective Inventory (ZTPI) is designed to evaluate time perspective in five dimensions: past-negative (reflects an unfavorable view of the past); past-positive (representing a favorable attitude to the past); present-fatalist (a resigned attitude to life); present-hedonist (a confident attitude to risk-taking); and future (characterized by meeting targets)<sup>12</sup>. In this study, time perspective was evaluated using the short version, ZTPI-25, which contains 25 items distributed into five subscales as validated in Brazil<sup>21</sup>. Cronbach's Alpha was calculated for each of the five subscales: past-negative ( $\alpha = 0.79$ ), past-positive ( $\alpha = 0.70$ ), present-fatalist ( $\alpha = 0.69$ ), present-hedonist ( $\alpha = 0.64$ ) and future ( $\alpha = 0.64$ ). All subscales returned acceptable internal consistency<sup>20</sup>.

### *Data analysis*

Data were treated using an electronic spreadsheet developed in Microsoft Excel<sup>®</sup> 2010 and transferred to the statistics software SPSS<sup>®</sup>, version 20. The data from the questionnaires were entered manually in Microsoft Excel<sup>®</sup> and checked through random sampling by a researcher not incorporated in the data insertion.

Means were calculated for each QOL domain and each TP subscale. After, Hierarchical Regression Analyses were performed for each of the QOL domains (dependent variables), socioeconomic and clinical variables and TP subscales (independent variables). For all analyses, statistical significance level adopted was 5% ( $\alpha=0.05$ ). As regards ethical requirements for

research with human subjects in Brazil, the study complied with the provisions of National Health Council Resolution 466/12. Each participant, on first contact, was provided with a declaration of free and informed consent guaranteeing confidentiality and anonymity.

## Results

Participants' characteristics are shown in Table 1. A total of 281 people living with HIV, ranging in age from 18 to 72 years (mean = 41.1 years, standard deviation = 12.8 years) participated in the study. Most of the sample consisted of men, with high school education and employed.

**Table 1.** Participants' socioeconomic and clinical characteristics. Rio de Janeiro and Niterói, Brazil, 2022.

Variables	N (%)
Sex	
1. Male	193 (68.7)
2. Female	88 (31.3)
Age (years)	
1. 18 to 38	123 (43.8)
2. 39 to 59	137 (48.8)
3. 60 or more	21 (7.5)
Schooling	
1. Elementary school	48 (17.1)
2. High school	162 (57.7)
3. Higher education	71 (25.3)
Employment Situation	
1. Unemployed	50 (17.8)
2. Retired/other	56 (19.9)
3. Employed	175 (62.3)
Marital Status	
1. No partner	139 (49.5)
2. With partner	142 (50.5)
Income in Brazilian Reals	
1. Up to 1000	95 (33.8)
2. 1001 to 2000	95 (33.8)
3. 2001 or more	91 (32.4)
Stage of Infection	
1. No symptoms	252 (89.7)

Variables	N (%)
2. With symptoms	29 (10.3)
Form of HIV Infection	
1. Injectable drugs	2 (0.7)
2. Homosexual relationship	121 (43.1)
3. Heterosexual relationship	113 (40.2)
4. Blood-borne	45 (16)
HIV Diagnosis Time (months)	
1. Up to 72	105 (37.4)
2. 73 to 168	88 (31.3)
3. 169 or more	88 (31.3)
Use of ART	
1. No	16 (5.7)
2. Yes	265 (94.3)
Time of ART Use (months) (n = 265)	
1. Up to 48	94 (35.5)
2. 49 to 132	85 (32.1)
3. 133 or more	86 (32.5)
Adverse Effects of ART (n = 265)	
1. No	139 (52.5)
2. Yes	126 (47.5)
Condom Use	
1. No	137 (48.8)
2. Yes	144 (51.2)
Feeling Sick	
1. No	234 (83.3)
2. Yes	47 (16.7)
Perception of Health	
1. Negative	48 (17.1)
2. Positive	233 (82.9)

The means for each QOL domain and each TP subscale are shown in Table 2. The highest-scoring QOL domains were found to be psychological (3.81); social relations (3.74); and spirituality, religion and personal beliefs

(3.74). The highest-scoring time perspectives were future (3.55); past-positive (3.34) and present-hedonist (3.32), that is, negative time perspectives scored lowest.

**Table 2.** Means and standard deviation of QOL domains and TP subscales. Rio de Janeiro and Niterói, Brazil, 2022.

Domains/Subscales	Mean $\pm$ standard deviation
Psychological	3.81 $\pm$ 0.70
Social relations	3.74 $\pm$ 0.83
Spirituality	3.74 $\pm$ 0.93
Level of independence	3.67 $\pm$ 0.76
Physical	3.67 $\pm$ 0.86
Environment	3.37 $\pm$ 0.64
Future	3.55 $\pm$ 0.53
Past-positive	3.34 $\pm$ 0.63
Present-hedonist	3.32 $\pm$ 0.60
Past-negative	3.02 $\pm$ 0.81
Present-fatalist	2.95 $\pm$ 0.76

The associations among QOL domains and socioeconomics and clinical variables and time perspective subscales are given in Table 3. In the regression analysis, the time perspective variables showed that the subscales associated with high QOL in the physical and level of independence domains were low past-negative and high future orientations. The subscales associated with

high QOL in the psychological and environmental domains were low past-negative, high past-positive and high future orientations. The subscales associated with high QOL in social relations domain were high past-positive and high future orientations; and spirituality, religion and personal beliefs domain was low past-negative.

Table 3. Time perspective subscales associated with QOL dimensions (Hierarchical Regression Model, n = 281).

Variables (F; 20, 260)	QOL Dimensions											
	Physical		Psychological		Level of Independence		Social Relations		Environmental		Spirituality	
	<i>β</i>	<i>t</i>	<i>β</i>	<i>t</i>	<i>β</i>	<i>t</i>	<i>β</i>	<i>t</i>	<i>β</i>	<i>t</i>	<i>β</i>	<i>t</i>
Sex	-0,04	-0,90	-0,10	-1,90	0,04	0,72	-0,06	-0,95	-0,06	-1,09	-0,16	-2,72*
Age	-0,05	-0,96	-0,00	-0,03	-0,08	-1,40	-0,06	-1,00	-0,04	-0,67	0,08	1,43
Schooling	-0,00	-0,05	-0,01	-0,24	0,09	1,67	0,00	0,02	0,14	2,47*	-0,13	-2,24*
Employment	0,00	0,00	0,01	0,34	0,05	1,06	0,08	1,39	-0,03	-0,62	0,09	1,55
Marital status	0,06	1,45	0,01	0,28	-0,04	-0,89	0,09	1,73	-0,03	-0,66	-0,01	-0,30
Income	0,05	0,89	0,09	1,59	0,11	1,82	0,14	2,12*	0,23	3,65**	0,03	0,60
HIV stage	-0,12	-2,33*	-0,07	-1,45	-0,13	-2,30*	-0,03	-0,50	0,00	0,15	-0,17	-2,79*
Form of diagnosis	0,05	1,05	0,05	1,11	0,07	1,47	0,06	1,11	0,16	2,93*	0,10	1,83
HIV diagnosis time	0,11	1,48	0,11	1,56	0,11	1,48	0,08	0,91	0,11	1,34	0,04	0,50
Use of ART	0,07	1,50	-0,01	-0,56	-0,01	-0,21	-0,07	-1,21	-0,00	-0,12	0,05	0,92
Time of ART use	-0,07	-0,97	-0,11	-1,44	-0,05	-0,65	-0,02	-0,29	-0,06	-0,78	-0,01	-0,16
Adverse effects	-0,08	-1,90	0,01	0,27	0,01	0,25	0,01	0,33	-0,02	-0,53	-0,01	-0,27
Condom use	0,03	0,77	0,00	0,04	-0,00	-0,19	0,03	0,57	0,11	2,17*	0,08	1,69
Consider ill	-0,09	-1,82	-0,22	-4,15**	-0,05	-1,04	-0,17	-2,69*	-0,10	-1,69	-0,20	-3,43**
Self-reported health	0,30	5,44**	0,18	3,38**	0,30	5,18**	0,08	1,27	0,10	1,71	-0,00	-0,02
Past-negative	-0,21	-4,27**	-0,31	-6,27**	-0,14	-2,70*	-0,11	-1,84	-0,13	-2,36*	-0,22	-3,96**
Past-positive	0,04	0,88	0,10	2,22*	0,06	1,18	0,11	1,98*	0,12	2,27*	-0,08	-1,53
Present-fatalist	0,03	0,64	0,01	0,22	-0,02	-0,39	-0,01	-0,25	0,02	0,41	-0,00	-0,09
Present-hedonist	-0,02	-0,51	0,01	0,34	0,02	0,49	0,04	0,65	-0,01	-0,19	-0,02	-0,47
Future	0,26	5,57**	0,21	4,52**	0,26	5,22**	0,16	2,87*	0,19	3,65**	0,10	1,93*
R <sup>2</sup> (F)	0,47 (11,87)**		0,48 (12,36)**		0,43 (9,88)**		0,26 (4,62)**		0,35 (7,06)**		0,34 (6,87)**	

\* ≤ 0,05; \*\* ≤ 0,01



## Discussion

This study contributes to the QOL research in the context of HIV disease and explored the relationship between QOL and TP for Brazilian people. Analysis of the relation between QOL and TP confirmed that known factors, such as social life conditions, like schooling and income, and psychosocial factors, stage and form of HIV infection, perception of health, were related to QOL<sup>10-11,15</sup>.

In the context of HIV, in addition to stigma, prejudice, social rejection and isolation, people living with HIV need to deal with difficulties in accessing health services, unstable employment relationships, fragile relationships with health professionals, body changes and perceptions distorted self-image. In addition, the absence of effective social and family support, affects negatively physical and psychological well-being. Therefore, to understand quality of life, defined as a dynamic concept that changes with the process of people's experience, a multidimensional analysis of the health-disease process is necessary<sup>22-24</sup>.

The adaptation needs arising from the HIV positive diagnosis show psychological, social and physical repercussions. Thus, observing the past and planning for the future are essential to ensure a more stable present, both in physical, psychological, and social health. In this way, by bringing to consciousness the perception of the influence of the temporal perspective on individual decision-making, it may allow for a better conduct of life<sup>21</sup>.

The results reinforce that TP can be considered a predictive variable and an important indicator of lifestyle. It characterizes traits of personality, judgement, and decision-making style, and plays an important role in motivation and goal setting, contributing to healthy behaviour<sup>25</sup>.

Past-negative associated with lower QOL scores in almost all domains, similar to findings in a study with chronic patients, showing the effect of bad experiences on the assessment of QOL<sup>8,26</sup>. On the other hand, the future associated with higher QOL scores in the almost all domains, as previously indicated its positive role in well-being and life purpose. The past-positive was associated with the highest scores of psychological, social relations and environment, in line with studies that have associated happiness, life satisfaction, hope and optimism<sup>27</sup>.

The influence of past-negative on QOL has been reported previously, among persons living with HIV and in other population groups, in association with negative behaviors and attitudes, such as poor emotional stability, despair, anxiety, depression, pessimism, aggression and low self-esteem. It also is strongly related to psychological stress, reflecting an attitude of rumination and repentance towards the past. It is observed an attitude of aversion to unpleasant experiences, which should be undone, which can be associated with the present experience of the disease and the negative evaluation of QOL<sup>8,26-28</sup>. The past experiences that cause suffering contribute to a negative evaluation of QOL in several respects and may be related

to the experience of disease, with adverse effects on present QOL. Minimizing such experiences contributes to high QOL<sup>15</sup>.

The future associates with practices and behavior that are motivating, including health-related practices and behaviors, such as condom use, alcohol and drug abstinence, greater energy for activities and goal fulfilment, meaning in life, awareness, less impulsiveness and less novelty-seeking. A person who is oriented towards the future also has greater possibilities of investing energy in changing lifestyle, which culminate in an improvement in current and future health and, consequently, an improvement in the quality of life<sup>13-15,27-32</sup>.

However, future orientation may raise anxiety levels and form an unhealthy, negative attitude prejudicial to enjoying life and living the present<sup>33</sup>.

The presence of the future as a determinant of QOL in almost all domains signals the dynamism of TP and the change in the experience and perception of persons living with HIV, who can now envisage themselves ageing in the future, rather than meeting an early death. In the context of Brazil, the psychological experience of future relates to planning and fulfilling goals, although other dimensions must be considered on a multidimensional future perspective, such as the future-pessimistic or optimistic and the future-transcendental.

Authors<sup>34</sup> consider that the people living with HIV demonstrate greater

orientation towards the future and less orientation towards the fatalistic-present and the hedonistic-present. The future time perspective is possibly a predictor of good healthcare practices in the search for a better QOL. Thus, it is possible to reaffirm the importance of incorporating the TP into nursing care practices, since this variable seems to play a significant role in the care and self-care of people living with HIV.

Note the interposition of the past-negative and future subscales, where the results show simultaneous influences on QOL domains. The components of these subscales point in opposite directions and indicate correlations and associations framed by differing feelings, suggesting new directions for analysis of time perspective. The simultaneity of the results on the subscales reveals a duality between the frailty demonstrated by the past-negative orientation and the strength to carry on expressed by the future orientation and can be considered markers of multidimensionality in time perspective.

The past-positive orientation contributed to psychological domain, especially to satisfaction with life, meaning in life, happiness and friendship<sup>27-28,30</sup>, also past-positive can be contribute with social relations and environmental domains, the maintaining relations with friends and family, which favors the development of coping and anger management strategies, with positive impacts on the experience of aids and on QOL<sup>15</sup>. Past-positive has focus on the family relations with

friends and relatives, reflecting a pleasurable, and positive life history.

In a previous study, past-positive did not figure as influencing QOL; future orientation associated only with the level of independence domain and past-negative associated with low QOL in the environment domain. In that study, TP was observed to exert strong influence in both the fatalistic and hedonistic categories of present<sup>15</sup>. This change in the experience and perceptions of persons with HIV may also reflect the political context in Brazil, where since 1996, access to ARV treatment has been free of charge and guaranteed by law to all patients, which is not a common situation in other countries. Furthermore, orientation towards the present may be related to vulnerable behaviors and the use of substances that cause dependence, as well as practices that increase vulnerability to sexually transmitted infections<sup>29</sup>.

The peculiar characteristics of the Brazilian context are also expressed in the spirituality, religion and personal beliefs domain, which high scored, signaling the importance of such practices in Brazil. A prior study indicated that religious and spiritual practices have beneficial health effects and strengthen and encourage people confronting the disease. This coping reflects in high QOL, not in this domain alone, but also in the psychological domain, where the discovery of new relations with God or Divinity was important to high QOL<sup>35</sup>. Also in this regard, the presence of religiosity and spirituality is also considered an important factor in individual TP, which may be

expressed in believing the disease to be a punishment or in a better future sustained by divine forces.

This emphasizes the importance of including evaluation of future-transcendental orientation in TP analysis, which consists in a subscale focused on the future, which evaluates non-finite aspects such as bodily death<sup>12</sup>. Belief in continued existence after death and in punishment or reward associated with behavior are affected directly by religious and spiritual beliefs, and this permits significant discussions about Brazil's population, which is strongly influenced by religious concerns.

Studies have pointed to the importance of a balanced TP in which the individual is not preoccupied with, or bound by, a single time dimension, but is able to consider all dimensions when the need arises to take decisions<sup>12,36</sup>.

Given the proven relationship between PT, attitudes and positives or negatives practices related to health behaviors, it is understood that the use of PT assessment can guide health professionals to seek holistic strategies for the management of chronic diseases. Thus, the integration of PT to care practices can help in the investigation of behaviors and attitudes that interfere in the self-care processes<sup>31-32,37</sup>.

It is noteworthy that health care consists of the relationship established between people and groups, with a view to improving health status and quality of life.

Therefore, care practices performed by professionals cannot be restricted to technique but must be expressed in attitudes and in the relationship with the other to whom care is offered<sup>33,37-38</sup>.

The processes of adaptation to the new situations posed by a disease condition must also consider changes in the evaluation of temporal patterns, which refer to the relationships established between times and situations in the past, present, and future, which are equally subject to change. From a clinical point of view, it is possible to identify relationships established between the adaptation processes and the installed disease, analyzing the coping mechanisms, the standards against which the person is compared, the values and expectations related to the disease, and the accomplishments. personal, modified or not by the adaptation process, resulting in the assessment of quality of life<sup>37</sup>.

In this way, for health education and prevention and promotion actions to result in changes in daily life, the identification of the orientation and profile of the temporal perspective can act as a facilitator for the understanding of behaviors, attitudes and decision making in face of vulnerability situation of different groups<sup>37</sup>. In short, such behaviors may be related to improved health in general, such as physical activity, healthy eating, non-use of harmful substances such as alcohol, tobacco and other drugs, as well as attitudes related to safer sexual behavior.

## Conclusion

The hypothesis that psychological time construct has implications for the experience of disease and for QOL assessment was proven. It was demonstrated by the association of QOL by future, past-negative and past-positive time orientation. This underlines the proposition that the context of persons living with HIV must be examined with caution, because not only does the time perspective influence QOL, but the socioeconomic, clinical, and psychological conditions relating to living with stigma and prejudice have direct effects on time perspective and quality of life.

The limitation of this study was the scarcity of studies relating TP and QOL in the context of AIDS, which hindered comparative analyses, as well as by the small number of studies on TP in the Brazilian population. It is hoped that this study will prompt other studies using the ZTPI-25, thus enabling time perspective theory to advance in Brazil and others countries. The use the short version ZTPI as an instrument to measure time perspective surmounts limitations present in other instruments, because it investigates the three psychological times simultaneously, including motivational emotional, cognitive and social aspects.

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## References

1. Greco DB. Trinta anos de enfrentamento à epidemia da Aids no Brasil, 1985- 2015. *Ciência & Saúde Coletiva*. 2016; 21(5):1553-1564. <https://doi.org/10.1590/1413-1232015215.04402016>
2. Parker R. O Fim da Aids? *Associação Brasileira Interdisciplinar de Aids*. 2015.
3. Ghosh AK, Sarkar A, Mitsuya H. HIV-Associated Neurocognitive Disorder (HAND) and the Prospect of Brain-Penetrating Protease Inhibitors for Antiretroviral Treatment. *Medical Research Archives*. 2017; 5:4.
4. Ministério da Saúde. Boletim Epidemiológico – Aids e DST, 2015; 1-100.
5. Ministério da Saúde. Boletim Epidemiológico – HIV/Aids, 2020; 1-68.
6. Cronje JH, Williams M, Steenkamp L, Venter D, Elkonin D. The quality of life of HIV-infected South African university students: Experiences with the WHOQOL-HIV-Bref. *AIDS Care*. 2016; 20(36): 1-4. <https://doi.org/10.1080/09540121.2016.1234688>
7. Hipolito RL, Oliveira DC, Gomes AMT, Costa TL. Representações sociais da qualidade de vida no HIV/AIDS: o papel do tempo de diagnóstico. *Rev Enferm UERJ*. 2014; 22(6):753-759.
8. Laguette V, Apostolidis T, Dany L, Bellon N, Grimaud JC, Lagouanelle- Simeoni MC. Quality of life and time perspective in inflammatory bowel disease patients. *Quality of Life Research*. 2013; 22(10): 2721-2736. <https://doi.org/10.1007/s11136-013-0399-4>
9. Xiao Z, Li X, Qiao S, Zhou Y, Shen Z. Social support, depression, and quality of life among people living with HIV in Guangxi, China. *AIDS Care*. 2016; 29(3): 319-325. <https://doi.org/10.1080/09540121.2016.1224298>
10. Akinboro AO, Akinyemi SO, Olaitan PB, Raji AA, Popoola AA, Awoyemi OR, Ayodele OE. Quality of life of Nigerians living with human immunodeficiency virus. *Pan African Medical Journal*. 2014; 18:1-11. <https://doi.org/10.11604/pamj.2014.18.234.2816>
11. Bakiono F, Ouédraogo L, Sanou M, Samadoulougou S, Wendpouriré P, Guiguemdé L, et al. Quality of life in people living with HIV: a cross-sectional study in Ouagadougou, Burkina Faso. *Springer Plus*. 2014; 3:372. <https://doi.org/10.1186/2193-1801-3-372>
12. Zimbardo PG, Boyd JN. Putting Time in Perspective: A Valid, Reliable Individual-Differences Metric. *Journal of Personality and Social Psychology*. 1999; 77(6):1271-1288.
13. Fieulaine N, Martinez F. Time under control: Time perspective and desire for control in substance use. *Addictive Behaviors*. 2010; 35(8): 799-802. <https://doi.org/10.1016/j.addbeh.2010.03.022>
14. Leite UR, Pasquali L. Estudo de validação do Inventário de Perspectiva de Tempo do Zimbardo. *Avaliação Psicológica*. 2008; 7(3): 301-320.

15. Préau M, Apostolidis T, Francois C, Raffi F, Spire B. Time perspective and quality of life among HIV-infected patients in the context of HAART. *AIDS Care*. 2007; 19(4): 449-58.  
<https://doi.org/10.1080/09540120601017464>
16. Oliveira DC. Qualidade de vida e construções simbólicas de pessoas que vivem com HIV/aids no Rio de Janeiro. Projeto de Pesquisa Edital Universal 2013 do CNPq, 2013.
17. Razera F. Fatores associados à qualidade de vida em saúde de pacientes infectados pelo vírus da imunodeficiência humana. 2007. 108 p. Dissertação (Mestrado) – Universidade Federal do Rio Grande do Sul, Porto Alegre, 2007.
18. Zimpel RR, Fleck MP. Quality of life in HIV-positive Brazilians: application and validation of the WHOQOL-HIV, Brazilian version. *AIDS Care*. 2007; 19(7): 923- 930.  
<https://doi.org/10.1080/09540120701213765>
19. World Health Organisation. Instrumento Manual do Usuário. Departamento de Saúde Mental E Dependência Química. 2002.
20. Brown TA. Confirmatory Factor Analysis for Applied Research. *The Guilford Press*. 2006.  
<https://doi.org/10.1177/1073191110393106>
21. Cecilio HPM, Apostolidis T, Lampropoulos D, Oliveira DC. Versão curta do Inventário de Perspectiva Temporal de Zimbardo (ZTPI-25): validação brasileira. *Research, Society and Development*. 2021; 10(2): e43410212776.  
<https://doi.org/10.33448/rsd-v10i2.12776>
22. Santos VF, Pedrosa SC, Aquino PS, Lima ICV, Cunha GH, Galvão MTG. Social support of people with HIV/AIDS: the Social Determinants of Health Model. *Rev Bras Enferm*. 2018; 71(Suppl 1):625-30.  
<http://dx.doi.org/10.1590/0034-7167-2017-0346>
23. Hipolito RL, Oliveira DC, Cecilio HPM, Marques SC, Flores PVP, Costa TL, Lima FO. Qualidade de vida de pessoas vivendo com HIV e suas relações multifatoriais. *Research, Society and Development*. 2020; 9(7): e82973749.  
<http://dx.doi.org/10.33448/rsd-v9i7.3749>
24. Cecilio HPM, Oliveira DS, Apostolidis T, Dany L, Oliveira DC. Time perspective, socioeconomical status and quality of life of people living with HIV. *Research, Society and Development*. 2020; 9(8): e14898545.  
<http://dx.doi.org/10.33448/rsd-v9i8.5451>
25. Siu NYF, Lam HHY, Le JJY, Przepiorka AM. Time perception and time perspective differences between adolescents and adults. *Acta Psychologica*. 2014: 151.  
<https://doi.org/10.1016/j.actpsy.2014.06.013>
26. Dany L, Roussel P, Laguette V, Lagouanelle-Simeoni M-C, Apostolidis T. Time perspective, socioeconomic status, and psychological distress in chronic pain patients. *Psychology Health & Medicine*. 2015; 21(3): 295-308.  
<https://doi.org/10.1080/13548506.2015.1062900>



27. Orkibi H. Psychometric Properties of the Hebrew Short Version of the Zimbardo Time Perspective Inventory. *Evaluation & the Health Professions*. 2014; 38(2): 219-245.  
<https://doi.org/10.1177/0163278714531601>
28. Worrell FC, Mckay MT, Andretta JR. Concurrent validity of Zimbardo Time Perspective Inventory pro files: A secondary analysis of data from the United Kingdom. *Journal of Adolescence*. 2015; 42:128-139.  
<https://doi.org/10.1016/j.adolescence.2015.04.006>
29. Aboussalam N, Naudé L, Lens W, Esterhuysen K. The relationship between future time perspective, self-efficacy and risky sexual behaviour in the Black youth of central South Africa. *Journal of Mental Health*. 2015;1-8.  
<https://doi.org/10.3109/09638237.2015.1078884>
30. Muro A, Castellà J, Sotoca C, Estaún S, Valero S. To what extent is personality associated with time perspective?. 2015; 31(1999):488-493.
31. Guthrie LC, Lessl K, Ochi O, Ward MM. Time perspective and smoking, obesity, and exercise in a community sample. *Am J Health Behav*. 2013; 37(2):171-80.  
<https://doi.org/10.5993/AJHB.37.2.4>
32. Sansbury B, Dasgupta A, Guthrie L, Ward MM. Time perspective and medication adherence among individuals with hypertension or diabetes mellitus. *Patient Educ Couns*. 2014; 95(1):104-10.  
<https://doi.org/10.1016/j.pec.2013.12.016>
33. Oyanadel C, Buéla-Casal G. La percepción del tiempo: influencias en la salud física y mental The Perception of Time: Influences on Physical and Mental Health, 2011; 149-162.
34. Oliveira DC, Oliveira DS, Cecilio HPM, Apostolidis T, Coqueiro RS. Time perspective and associated factors in Brazilians living with HIV. *British Journal of Nursing*, 2019; 28(9): 580-586.
35. Silva J, Bunn K, Bertoni RF, Neves OA, Traebert J. Quality of life of people living with HIV. *AIDS Care*, 2013; 25(1): 71-76.  
<https://doi.org/10.1080/09540121.2012.686594>
36. Akirmak U. How is Time Perspective Related to Perceptions of Self and of Interpersonal Relationships? *The Spanish Journal of Psychology*. 2014; 17:E92.  
<https://doi.org/10.1017/sjp.2014.92>
37. Oliveira DS, Cecilio HPM, Oliveira DC. Perspectiva temporal: discussões sobre a aplicação do conceito na área da saúde e enfermagem. *Rev enferm UERJ*. 2020; 28:e40392.  
<http://dx.doi.org/10.12957/reuerj.2020.40392>
38. Boniwell I, Osin E, Linley PA, Ivanchenko GV. A question of balance: time perspective and well-being in British and Russian samples. *J Posit Psychol*. 2010; 5(1):24-40.  
<https://doi.org/10.1080/17439760903271181>