# Self-inflicted violence and suicide in people living with HIV/AIDS: a systematic review

Violência autoprovocada e suicídio em pessoas que vivem com HIV/AIDS: revisão sistemática Violencia autoinfligida y suicidio en personas que viven con VIH/SIDA: una revisión sistemática

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#### **ABSTRACT**

**Objectives:** to analyze intellectual productions on self-inflicted violence and suicide in people living with HIV/AIDS. **Methods:** a systematic review, carried out between March and April 2021, in the PubMed®/MEDLINE®, Web of Science and LILACS databases, subsidized in the Strengthening the Reporting of Observational Studies in Epidemiology. The period outlined was from 2011 to 2020. **Results:** a total of 199 studies were identified, and 16 composed the final sample, grouped into the categories: Sociodemographic characteristics of victims of self-inflicted violence/suicide and their intervening factors (pointing to young adults, especially homosexuals, with low social support and a history of mental illness or substance abuse as usual victims); Successful measures for suicide prevention/control in people living with HIV/AIDS (suggesting more frequent psychosocial and clinical follow-up of those starting antiretroviral and immunocompromised treatment). **Conclusions:** biopsychosocial follow-up, analysis of sociodemographic profile and intervening factors should be frequent in this population for disease prevention/control.

**Descriptors**: HIV; Acquired Immunodeficiency Syndrome; Violence; Suicide; Systematic Review.

#### RESUMO

Objetivos: analisar as produções intelectuais sobre a violência autoprovocada e suicídio em pessoas que vivem com HIV/AIDS. **Métodos**: revisão sistemática, realizada entre março e abril de 2021, nas bases PubMed®/MEDLINE®, Web of Science e LILACS, subsidiada no instrumento Strengthening the Reporting of Observational Studies in Epidemiology. O período delineado foi de 2011 a 2020. **Resultados**: identificaram-se 199 estudos, e 16 compuseram a amostra final, sendo agrupados nas categorias: Características sociodemográficas das vítimas de violência autoprovocada/suicídio e seus fatores intervenientes (apontando adultos jovens, especialmente homossexuais, com baixo suporte social e histórico de doenças mentais ou abuso de substâncias como as vítimas usuais); Medidas exitosas para prevenção/controle de suicídio em pessoas vivendo com HIV/AIDS (sugerindo acompanhamento psicossocial e clínico mais frequente daqueles em início de tratamento antirretroviral e imunodeprimidos). **Conclusões**: acompanhamento biopsicossocial, análise do perfil sociodemográfico e dos fatores intervenientes devem ser frequentes nesta população, para prevenção/controle do agravo. **Descritores**: HIV; Síndrome de Imunodeficiência Adquirida; Violência; Suicídio; Revisão Sistemática.

## RESUMEN

Objetivos: analizar las producciones intelectuales sobre la violencia autoinfligida y el suicidio en personas viviendo con VIH/SIDA. Métodos: revisión sistemática, realizada entre marzo y abril de 2021, utilizando las bases de datos PubMed®/MEDLINE®, Web of Science y LILACS, apoyada en el instrumento Strengthening the Reporting of Observational Studies in Epidemiology. El período planteado fue del 2011 al 2020. Resultados: se identificaron 199 estudios, de los cuales 16 conformaron la muestra final, siendo agrupados en las categoriás: Características sociodemográficas de las víctimas de violencia autoinfligida/suicidio y sus factores intervinientes (señalando adultos jóvenes, especialmente homosexuales, con bajo apoyo social y antecedentes de enfermedad mental o abuso de sustancias como víctimas habituales); Medidas exitosas para la prevención/control del suicidio en personas que viven con VIH/SIDA (lo que sugiere un seguimiento psicosocial y clínico más frecuente para quienes comienzan el tratamiento antirretroviral y las personas inmunodeprimidas). Conclusiones: el seguimiento biopsicosocial, el análisis del perfil sociodemográfico y los factores intervinientes deben ser frecuentes en esta población, para la prevención/control de la enfermedad.

**Descriptores:** VIH; Síndrome de Inmunodeficiencia Adquirida; Violencia; Suicidio; Revisión Sistemática.

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#### **INTRODUCTION**

Human immunodeficiency virus (HIV) infection represents one of the most delicate conditions faced by humanity in the last four decades. People living with HIV and/or with Acquired Immunodeficiency Syndrome (AIDS) face important biological aspects, such as the possibility of acquiring opportunistic diseases, the continuous use of antiretroviral drugs with potential adverse events and frequent medical follow-up<sup>(1-3)</sup>. Moreover, psychosocial aspects also permeate HIV infection, and feelings such as fear, shame, prejudice and rejection are usually reported<sup>(4-5)</sup>.

Not infrequently, some psychic conditions are faced due to the sum of these factors, such as depression, anxiety, bipolar disorder and phobias. Even psychoses can be frequent illnesses that arise in previously mentally healthy people living with HIV/AIDS (PLWHA)<sup>(4-6)</sup>.

Depending on the state of psychosocial distress, the conditions of vulnerability to situations of self-inflicted violence increase, which are aggressions against them in various ways, which can compromise integrity and well-being, leading to serious damage to life, including the possibility of death<sup>(5)</sup>. This group of violence includes intentional conditions of mutilation, burn, cut or puncture, promotion of difficulty in healing, bruising, exogenous intoxication (with licit or illicit substances) and suicide attempt (or its consummation)<sup>(5,7)</sup>.

People deal with situations of tension and distress in a particular way, but they are largely influenced by the collectivity and historical period they experience. Thus, the contemporary lifestyle, the choices adopted throughout the life trajectory and even interpersonal relationships can affect the way people seek solutions to problems, especially those more complex and with coping that requires multiple personal and social resources. In this regard, self-injurious behavior often occurs as a form of relief from prolonged or very intense distress in which other efforts were not resolutive<sup>(7-8)</sup>. Some chronic health conditions, such as HIV infection, can generate forms of difficult coping, predisposing to the risk of conditions of self-inflicted violence.

Research has shown that PLWHA suffer very strong social and emotional tensions and can deal negatively with them, even when assisted by qualified professionals<sup>(4-8)</sup>. Studies have addressed different perspectives on the subject<sup>(5-9)</sup>, however, without clearly listing the sociodemographic profile, associated factors and successful health measures to control self-inflicted violence in this population, favoring the permanence of gaps about the phenomenon and safer and more efficient care planning. It is noteworthy that no reviews described in the international platform for recording systematic reviews PROS-PERO on the subject were found. It is believed that the findings of this investigation can contribute to good care practices in understanding the phenomenon of violence against oneself and in health promotion strategies.

#### **OBJECTIVES**

To analyze intellectual productions on self-inflicted violence and suicide in people living with HIV/AIDS.

#### **METHODS**

## **Ethical aspects**

As this is a systematic review, there was no need for appreciation by the Research Ethics Committee, according to the premises of Resolution 466/2012 of the Brazilian National Health Council (Conselho Nacional de Saúde).

# **Design and search places**

This is a review submitted in the System of Prospective Registry of Systematic Reviews (PROSPERO), based on the systematic review protocols created by the Cochrane collaboration, whose final purpose is to obtain the safest evidence available for the defined subject<sup>(10)</sup>.

The course included the following phases: (1) elaboration of the research guiding question; (2) survey of keywords or descriptors, search methods and choice of databases; (3) selection of inclusion and exclusion criteria for materials; (4) database search with two independent investigators; (5) comparison of the materials obtained by the researchers with the previous selection of studies; (6) use of inclusion and exclusion criteria through critical analysis of publications included; (7) execution of a structured summary containing the most relevant data and information extracted from the included studies<sup>(10)</sup>.

The guiding question was elaborated with the help of Patient-Intervention-Comparison-Outcomes (PICO)<sup>(11)</sup>, in which the acronym P referred to people living with HIV/AIDS, I, self-inflicted violence, C, suicide situations or attempts, O, measures to prevent or control the disease. Thus, the guiding question elaborated was: what are the characteristics of the main intellectual productions on prevention or control of self-inflicted violence and suicide in people living with HIV/AIDS?

The databases listed for search were PubMed®/MEDLINE®, Web of Science (WoS) and Latin American and Caribbean Literature in Health Sciences (LILACS). Official descriptors contained in the Medical Subjects Heading (MeSH) were used, except in LILACS

database, in which the Health Sciences Descriptors (DeCS) were used. The combination of descriptors was done using the Boolean operators AND (restrictive combination) and OR (additive combination). Among the keywords of the same acronym of PICO strategy, OR was used; for the combination between different acronyms, the AND, as summarized in the table.

## **Study protocol**

In the PubMed®/MEDLINE® database, the following descriptors and combinations were used as a search strategy: "self-injurious behavior" [MeSH Terms] OR ("self-injurious" [All Fields] AND "behavior" [All Fields]) OR "self-injurious behavior" [All Fields] OR ("self" [All Fields] AND "behavior" [All Fields]) OR "self-injurious behavior" [All Fields]) AND ("suicide" [MeSH Terms] OR "suicide" [All Fields]) AND ("suicide, attempted" [MeSH Terms] OR ("suicide" [All Fields] AND "attempted" [All Fields]) OR "attempted suicide" [All Fields] OR ("attempted" [All Fields]) AND ("acquired immunodeficiency syndrome" [MeSH Terms] OR ("acquired" [All Fields])

AND "immunodeficiency" [All Fields] AND "syndrome" [All Fields]) OR "acquired immunodeficiency syndrome" [All Fields] OR "aids" [All Fields]). The search strategy adopted in the WoS database was composed of: "self-injurious" AND "HIV" AND "AIDS" AND "suicide" AND "treatment" AND "suicide prevention". In LILACS, DeCS terms "HIV", "Sindrome da Imunodeficiência Adquirida", "Suicídio", "Comportamento Autodestrutivo", "Terapêutica" and their English and Spanish versions were used: ("HIV") AND ("Acquired Immunodeficiency Syndrome") AND ("Suicide") AND ("Self-Injurious Behavior") AND ("Therapeutics"); ("VIH") AND ("Síndrome de Inmunodeficiencia Adquirida") AND ("Suicidio") AND ("Conducta Autodestructiva") AND ("Terapéutica")

#### Sample, inclusion and exclusion criteria

Primary observational studies published from 2011 to 2020, made available in full, free of charge or not, in Portuguese, English or Spanish, were included. We opted for a time frame of ten years, having to contemplate more updated information and compatible with the most recent epidemiological profile. Studies whose research population had previous neurological impairment, people under 18 years of age and suspected cases of interpersonal violence were discarded. The search took place in March and April 2021.

Two independent and properly trained researchers to assess titles and abstracts proceeded with the article selection process. The selected materials were compared and, in four cases, there was divergence, and these articles were sent to a third researcher, an expert in the topic, invited to decide whether to include or exclude the material.

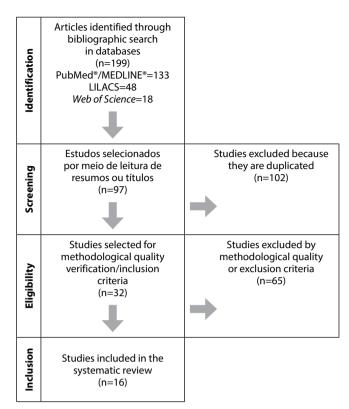
#### **Results analysis**

To ensure the methodological quality of the designs and reports of selected studies, the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) was used, which allowed the stratification of publications at levels A (studies that met 80% or more of the criteria), B (studies that met values between 50 and 79% of the criteria) and C (studies that met less than 49% of the criteria)<sup>(12)</sup>, which increased the level of security and reduced the risk of bias. Studies classified as level C were excluded due to the risk of not offering good evidence.

The selection of articles using the grouping of descriptors in the databases, the results of the searches and the number of texts included in the study are detailed in Figure 1.

# RESULTS

A total of 199 records were assessed, according to search criteria; of these, 102 were duplicated. After reading the titles and abstracts, 32 articles were eligible, and 65 were excluded because they did not meet the objective of the study. The reasons for the exclusions were as follows: 28 included participants with some neurological impairment; 25 had people under 18 years of age in their sample; and eight reported cases of interpersonal violence. In addition to these, three studies that received a C classification in the STROBE were excluded, and one study presented the method with a dubious interpretation. At the end, 16 articles were included in the research (Chart 1).



**Figure 1** – Flowchart for the selection of studies according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)<sup>(13)</sup>, São Paulo, São Paulo, Brazil, 2021

The articles analyzed were published between 2012 and 2019, developed in the following countries: United States (three studies) (18,24,28), Mexico (one study)(29), Brazil (one study)(27), Argentina (one study)(16), France (one study)(22), Taiwan (one study)(17), South Korea (one study)(23), China (two studies)(15,20), Nigeria (two studies)(21,25), Ethiopia (one study)(14), Uganda (one study)(19), and Australia (one study)(26). All articles were published in English.

Regarding the objective of the studies, four studies assessed the magnitude and factors associated with suicidal ideation and PLWHA attempt during antiretroviral therapy (ART)<sup>(14,16,18,24)</sup>; one tested a mathematical theory for the risk of suicides in PLWHA<sup>(15)</sup>; ten studies identified factors that contribute to suicide and raised opportunities for prevention<sup>(17,20-23,25-29)</sup>; and one study identified genetic variables that predispose to suicide risk in people with HIV<sup>(19)</sup>.

The main outcomes point to the lack of psychosocial follow-up and the integration of mental health services during treatment corroborating the suicide attempt(14-18,20-23,25-27,29). Moreover, a study(24) pointed out that treatment with antiretroviral (Efavirenz®) was associated with twice as many chances of suicide or self-inflicted violence, unlike another(28), which did not obtain conclusive results regarding the association of antiretrovirals with self-inflicted violence. The study with genetic analysis showed that one allele was associated with an increased risk of self-inflicted violence and suicide(19).

Regarding the drawings, ten studies were cross-sectional<sup>(14-16,19-23,27,28)</sup>, four, cohorts<sup>(17-18,24,29)</sup> and two, case-control<sup>(25-26)</sup>. The sum of participants was 14,366 (mean=897.9;  $\rm M_d$ =490). Five studies with A<sup>(17-18,21-22,24)</sup> in the STROBE instrument and 11 with B<sup>(14-16,19-20,23,25-29)</sup> (Chart 2) were classified.

**Chart 1 –** Characteristics of studies included in the review

Author, year	Country	Journal	Objective(s)	Outcomes		
Wonde M <sup>(14)</sup> , 2019	Ethiopia	PLoS One	Assess the magnitude and factors associated with the ideation and suicide attempt among HIV-positive young people in follow-up of antiretroviral therapy.	Suicidal ideation and attempts were statistically significant for females. History of family death and perceived HIV stigma were significantly associated with suicidal ideation. The presence of opportunistic infections and low social support were associated with suicide attempts and self-inflicted violence.		
Wang W <sup>(15)</sup> , 2019	China	Psychol Life Sci	Test a nonlinear cusp catastrophe modeling on suicidal behavior in PLWHA*.	Suicidal behaviors and self-inflicted violence are prevalent among PLWHA* in China. Psychosocial aspects such as income and AIDS stigma were associated with an increased risk of suicide.		
Mandell LN <sup>(16)</sup> , 2019	Argentina	AIDS Behav	Analyze the risk factors for suicidal ideation in PLWHA*.	Younger age, increased depressive symptoms and drug abuse, decreased motivation to comply with treatment, and fewer months since starting antiretroviral therapy were identified as risk factors.		
Lu HF <sup>(17)</sup> , 2019	Taiwan	J Adv Nurs	Analyze the changes and predictors of ideation/self-injury and suicide attempt and the moderating effects of psychosocial factors in PLWHA* between 6 and 12 months after diagnosis.	History of depressive disorders or symptoms and social support from friends significantly predicted suicide attempt and self-violence.		
Bengtson AM <sup>(18)</sup> , 2017	USA	J Acquir Immune Defic Syndr	Analyze the effect of Efavirenz® on suicidal ideation or self-inflicted violence.	There was no evidence that initiating ART** containing Efavirenz® increased the risk of suicidal thoughts and violence against oneself.		
Kalungi A <sup>(19)</sup> , 2017	Uganda	BMC Genet	Investigate the genetic risk factors associated with certain phenotypes of suicidal behavior.	The SA allele at the 5-HTTLPR /rs 25531 locus was associated with increased risk of suicide among PLWHA*.		
Liu Y <sup>(20)</sup> , 2017	China	AIDS Care	Assess the prevalence of suicidal and self-injurious behaviors among PLWHA* and explore the relationships between HIV-related stress, depression, anxiety and social support and suicidal ideation after HIV infection diagnosis.	The prevalence of suicidal behaviors is high among PLWHA*. Suicidal ideation was statistically associated with the onset of AIDS symptoms, the stress of diagnosis, the presence of previous depressive and anxiety symptoms, and low social support.		
Egbe CO <sup>(21)</sup> , 2017	Nigeria	BMC Public Health	Verify the prevalence and factors associated with major depressive episodes, suicide and alcohol use disorder among people living with HIV/AIDS.	Major depressive episodes were significantly associated with having planned suicide or self-inflicted violence. Suicidal ideation was significantly associated with major depressive episodes, marital status (married) and religion (Christian). Women were less likely to be diagnosed with alcohol disorders.		
Carrieri MP <sup>(22)</sup> , 2017	France	PLoS One	Identify the main suicide risk factors in PLWHA*, to subsidize the classification of suicide risks, violence against oneself and psychiatric care.	Women and men who have sex with men (MSM) were at higher risk. Reports of social contexts related to discrimination, homelessness and feelings of loneliness were the main predictors of risk.		
Kang CR <sup>(23)</sup> , 2016	South Korea	AIDS Care	Identify differences in risk factors between suicidal ideation and suicide attempts among HIV-infected adults.	Being young and a middle-aged adult, living with someone, having a history of opportunistic AIDS-defining disease, having a history of treatment for depression, having low social support and a fragile psychological state were risk factors for suicidal ideation found. Being a beneficiary of South Korea's National Medical Care, reporting economic barriers to treatment, having a history of treatment for depression, and poor psychological status were factors for suicide attempts.		
Mollan KR <sup>(24)</sup> , 2014	USA	Ann Intern Med	Compare the time of suicidal ideation, attempt, or consummation with antiretroviral regimens containing Efavirenz® versus without Efavirenz® for initial HIV treatment.	Initial treatment with an antiretroviral regimen containing Efavirenz® was associated with a 2-fold increased risk of suicidal ideation, attempt, or consummation compared to a regimen without Efavirenz®.		
Chikezie UE <sup>(25)</sup> , 2012	Nigeria	AIDS Care	Compare the prevalence of suicidal ideation and self-harm in PLWHA* with workers from a local government.	More than one-third (34.7%) of PLWHA* versus 4% of controls expressed suicidal ideation in the previous month, with 9.3% attempting suicide in the six months prior to the study. The most common type of attempt was a drug overdose. Being a woman, unemployment, comorbidities, living alone and having a partner with the disease were associated with suicidal ideation or selfinjury. It is suggested that physicians routinely question PLWHA* to reduce mortality.		

To be continued

Chart 1 (concluded)

Author, year	Country	Journal	Objective(s)	Outcomes	
McManus H <sup>(26)</sup> , 2014	Australia	PLoS One	Identify associations between suicide and accidental death or violent death in PLWHA*.	The immune status of people with HIV contributed to the risk of suicide and accidental or violent death (CD4-500 cell/mm³). The number of psychiatric/cognitive diagnoses contributed to the level of risk, but many psychosocial factors were not individually significant.	
Almeida SM <sup>(27)</sup> , 2016	Brazil	J Neurovirol	Examine the frequency and severity (including suicide) of major depressive disorder among PLWHA* and compare with people without the virus. Identify whether there are differences in between people living with HIV subtypes B and C.	The current suicide risk, defined as during the last month, was found in 18% of participants in PLWHA* and none in the non-HIV group. There were no differences between HIV subtypes B and C.	
López JD <sup>(28)</sup> , 2018	USA	AIDS Behav	Assess persistent suicidal ideation in PLWHA* in the era of antiretroviral therapy.	Suicidal ideation was reported in 13% of the sample. It is suggested that basic needs should be met and improve understanding of how symptoms of psychological distress and violence against oneself are expressed can improve barriers in managing PLWHA care*.	
Alderete- Aguilar C <sup>(29)</sup> , 2017	Mexico	Salud Ment	Assess the presence of anxiety, depression, hopelessness and suicide risk in HIV + patients hospitalized at admission and discharge.	At admission, 10.4% of patients had a score above the cut-off point for suicide risk; 1.7% had high levels of hopelessness; 5.2 had clinical depression; and 7% had clinical anxiety. The comparison of scores at admission and discharge showed significant reductions in all levels of symptoms.	

Note: \*PLWHA - person living with HIV/AIDS; \*\*ART – antiretroviral therapy.

Chart 2 – Design, sample and classification of studies

Author, year	Study design	Sample	STROBE score
Wonde M <sup>(14)</sup> , 2019	Cross-sectional	413	В
Wang W <sup>(15)</sup> , 2019	Cross-sectional	523	В
Mandell LN <sup>(16)</sup> , 2019	Cross-sectional	360	В
Lu HF <sup>(17)</sup> , 2019	Cohort (from June 2015 to October 2016)	113	Α
Bengtson AM <sup>(18)</sup> , 2017	Cohort (between 2011 and 2014)	597	Α
Kalungi A <sup>(19)</sup> , 2017	Cross-sectional	600	В
Liu Y <sup>(20)</sup> , 2017	Cross-sectional	557	В
Egbe CO <sup>(21)</sup> , 2017	Cross-sectional	1,187	Α
Carrieri MP <sup>(22)</sup> , 2017	Cross-sectional	3,022	Α
Kang CR <sup>(23)</sup> , 2016	Cross-sectional	457	В
Mollan KR <sup>(24)</sup> , 2014	Cohort (from 2001 to 2010)	5,332	Α
Chikezie UE <sup>(25)</sup> , 2012	Case-control (March to May 2008)	300 (case n=150, control n=150)	В
McManus H <sup>(26)</sup> , 2014	Case-control (between January 1999 and March 2012)	81 (case n=27, control n=54)	В
Almeida SM <sup>(27)</sup> , 2016	Cross-sectional	61	В
López JD <sup>(28)</sup> , 2018	Cross-sectional	648	В
Alderete-Aguilar C <sup>(29)</sup> , 2017	Cohort (from February to November 2013)	115	В

## **DISCUSSION**

Even after four decades of the discovery of HIV/AIDS and numerous studies focused on PLWHA's mental health and quality of life, the search for materials also points to a dispersion on the approach to self-harm in intellectual production.

Thus, during the interpretation of the findings, two thematic categories were evidenced, which allowed further analysis: Sociodemographic characteristics of people living with HIV/AIDS victims of self-inflicted violence and their intervening factors; Successful measures for self-inflicted violence prevention/control in people living with HIV/AIDS.

In category 1, Sociodemographic characteristics of people living with HIV/AIDS victims of self-inflicted violence and their intervening factors, most studies<sup>(15-18,20,22-24,26-29)</sup> indicated the male population as the most prevalent, with the exception of African countries, where women were the usual victims. Regarding age, there was a variation from 18 to 77 years, with a mean of 35. However, a considerable part of the studies<sup>(15-17,20-21,23,25-29)</sup> points out greater vulnerability of young adults, especially single<sup>(16-18,20,29)</sup>, a fact that can be understood as an action of despair in the face of the recent diagnosis of the disease or serological status without proper understanding of the existing therapeutic possibilities and advances in ART<sup>(30)</sup>.

Most of these young adults were homosexual or MSM<sup>(17,20,22-27)</sup>. Other national and international studies corroborate that violence, including interpersonal violence, is often common in homosexuals and bisexuals, and can cause great damage to their social well-being and understanding of the world<sup>(31-32)</sup>. Here, it is pointed out that self-inflicted violence may also have originated from forms of interpersonal violence, such as discrimination, psychological and moral aggression, lacking further deepening as an intervening factor<sup>(32-33)</sup>.

There are situations in which low socioeconomic and cultural levels may be predisposing factors for violence against oneself<sup>(16,19,28)</sup>. However, this is not presented as the majority in the findings. The level of education was considered high, with a significant part of people with higher education<sup>(17-18,20-21,26,28)</sup>. Moreover, most had an occupation, were employed and had income for their usual needs<sup>(15,17,20-21,23,26)</sup>. Researchers mention that financial problems and low education are not always associated with self-inflicted violence<sup>(33-34)</sup>. However, this does not mean that such conditions are considered protective factors to situations, such as suicidal ideation, being very variable according to the aggravation under investigation. The most cited spiritual belief was Christian belief, especially in studies conducted in developing countries<sup>(16,19,21)</sup>. On the other hand, race/color cannot be generalized, considering the diversity of the study sites.

The main intervening factors mentioned can be grouped into psychosocial aspects (low social and family support, disease stigma, experience of discrimination or prejudice)<sup>(14-15,17,22,25,28)</sup> and mental health conditions (presence of previous or concomitant mental illnesses, such as anxiety or depression, substance abuse and alcohol)<sup>(16-17,20-21,23,29)</sup>. Psychosocial aspects substantially affect PLWHA's quality of life and well-being, as they provoke negative feelings, potential aggravating factors for self-inflicted violence, affecting the appreciation of oneself in relation to others and the world, generating psychological distress, with tendencies to chronicle, whose personal coping mechanisms may not be clear, requiring the help of sensitive professionals with great empathy<sup>(31-33)</sup>. The absence of family support, for example, makes many people have to deal alone with everyday demands that could be more easily solved with the presence of a support network<sup>(35-36)</sup>.

Mental health conditions, such as substance abuse, depression and anxiety, were identified as highly associated with the risk of ideation, planning or even the consummation of suicide<sup>(16,21,26-29)</sup>. Depression, for example, can affect interest in social activities, irritability, feelings of guilt and low self-esteem, which can trigger thoughts of death and suicide frequently. Furthermore, substance

abuse, including alcohol, can further weaken PLWHA's health condition, as it potentially reduces the critical sense, intensifies low self-esteem, induces violent behaviors, in addition to affecting drug treatment, whether ART or other diseases, such as depression or anxiety<sup>(20,27-29)</sup>.

Category 2, Successful measures for self-inflicted violence prevention/control in people living with HIV/AIDS, indicates some potential strategies for prevention and control in the disease, some of them being of agile implementation to health professionals.

The studies suggest that people newly diagnosed with HIV/ AIDS receive greater attention from the health team(16,20,24-25), as this is a phase in which many have not yet adequately processed the information, treatment possibilities and potentialities, in terms of quality of life, including in the long term. Frequent psychological assessments are suggested for early diagnosis of mental disorders, assistance in stress management and shared management of care(16-17,20,25,28), especially in people with the aforementioned sociodemographic profile, with a previous history of depression, anxiety and substance abuse. The creation of psychosocial support networks with family and friends also reduces the chances of suicide attempts(17,22), as they reduce loneliness and help in coping with prejudices or social stigmas. A study<sup>(25)</sup> suggests that physicians and health professionals routinely question self-inflicted violence and suicidal ideation during PLWHA visits, as it can reduce mortality.

In addition to these measures, the optimized maintenance of the immune system (TCD4 cells >500/mm³) and the prevention of opportunistic diseases, especially neurological ones, are pointed out as measures of diligence<sup>(14,23,26)</sup>. It is noteworthy that ART should be monitored with greater attention in the first months of treatment<sup>(16,18,24-25)</sup>. Using medication Efavirenz® presented contradictions, being identified in a study<sup>(24)</sup> risk of suicidal ideation twice higher in people who used the drug than in the control group. Although another study<sup>(18)</sup> found no direct association between the medication and the increase in the rate of suicide attempt, its introduction should be studied with caution, especially in people with the most vulnerable sociodemographic profile. Closer monitoring of mental conditions is suggested in those in which the drug was implemented<sup>(24)</sup>.

Hospitalization can also be a measure to control the disease in cases with a high probability of suicide, and it is necessary to include in the treatment plan meeting the person's emotional needs as a protective measure, as there was a reduction in the incidence of anxiety, hopelessness, depression and risk of suicide after hospital discharge<sup>(29)</sup>. Another measure pointed out was the genetic analysis of PLWHA, since one of the studies pointed out that SA allele at the 5-HTTLPR/rs 25531 was associated with increased risk of suicide in this population<sup>(19)</sup>. However, as this is only one study, replications in other scenarios and larger samples are suggested.

## **Study limitations**

The selected databases and the non-use of qualitative studies are pointed out as limitations of the study, which, due to the sensitivity of the theme, could point to other relevant data. However, the limitations do not make the research unfeasible,

given that the synthesis of findings points to the delimitation of the profile of victims and potential good practices in PLWHA care.

## Contributions to nursing and health

The scarcity of Latin American studies indicates the gap that still exists on self-harm in PLWHA. Thus, this study contributes to health and nursing as it signals the main sociodemographic characteristics and intervening factors of the disease in this population, which allows planning more assertive actions and policies. Also, it points out evidence-based practices that can be replicated, reducing morbidity and mortality related to the theme.

#### **CONCLUSIONS**

Sixteen studies were identified that point out that self-inflicted violence is a complex and frequent phenomenon among PLWHA. Young adults, male and bisexual homosexuals,

single, with Christian spiritual belief, with higher education and in paid activities are the most frequent victims of this condition. In addition to this, low social and family support and the experience of prejudice or discrimination, substance abuse, history of depression and anxiety are important signs of risk conditions, especially suicide.

Among measures potentially reducing self-inflicted violence, more attentive and frequent psychosocial and clinical follow-up of these people, especially those with a recent diagnosis of HIV/ AIDS, at the beginning of ART (especially with Efavirenz®), with low immunity and the presence of opportunistic diseases are pointed out. Genetic research of S<sub>A</sub> allele can be a risk mapping resource and deserves further study or deepening.

#### **SUPPLEMENTARY MATERIAL**

https://doi.org/10.48331/scielodata.758QQ2 , SciELO Data, DRAFT VERSION.

#### **REFERENCES**

- Melhuish A, Lewthwaite P. Natural history of HIV and AIDS. Medicine J [Internet]. 2018 [cited 2021 Feb 01];46(6):356-61. Available from: https://www.medicinejournal.co.uk/article/S1357-3039(18)30074-4/fulltext
- 2. Lau C, Li P. The effects of AIDS on the prevalence of rheumatic diseases. Nat Rev Rheumatol. [Internet] 2016 [cited 2021 Feb 01];13:8-10 Available from: https://pubmed.ncbi.nlm.nih.gov/27881863/
- Bourgi K, Wanjalla C, Koethe JR. Inflammation and Metabolic Complications in HIV. Curr HIV/AIDS Rep[Internet]. 2018 [cited 2021 Feb 02];15:371–81. Available from: https://pubmed.ncbi.nlm.nih.gov/30058057/
- 4. Brown LA, Mu W, McCann J, Durborow S, Blank MB. Under-documentation of psychiatric diagnoses among persons living with HIV in electronic medical records. AIDS Care [Internet]. 2020 [cited 2021 Feb 01];13:1-5. Available from: https://www.tandfonline.com/doi/abs/10.1 080/09540121.2020.1713974?journalCode=caic20
- Malava JK, Lancaster KE, Hosseinipour MC, Rosenberg NE, O'Donnell JK, Kauye F, et al. Prevalence and correlates of probable depression diagnosis and suicidal ideation among patients receiving HIV care in Lilongwe, Malawi. Malawi Med J[Internet]. 2018 [cited 2021 Feb 03];30(4):236-42. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6863411/
- 6. Sullivan KL, Kulesz PA, Woods SP. Psychometrics and Validity of the Survey of Memory-Related Quality of Life in HIV Disease. Arch Clin Neuropsychol [Internet]. 2019 [cited 2021 Feb 01];36(2):186-202. Available from: https://pubmed.ncbi.nlm.nih.gov/31732744/
- 7. Kiekens G, Hasking P, Boyes M, Claes L, Mortier P, Auerbach RP, et al. The associations between non-suicidal self-injury and first onset suicidal thoughts and behaviors. J Affective Disorders [Internet]. 2018 [cited 2021 Feb 11];239:171-9. Available from: https://www.sciencedirect.com/science/article/pii/S0165032717324886
- Huang X, Ribeiro JD, Franklin JC. The differences between individuals engaging in nonsuicidal self-injury and suicide attempt are complex (vs. complicated or simple). Front Psychiatry [Internet]. 2020 [cited 2021 Feb 12];11:a239. Available from: https://www.frontiersin.org/articles/10.3389/fpsyt.2020.00239/full
- 9. Hentzien M, Cabie A, Pugliese P, Billaud É, Poizot-Martin I, Duvivier C, et al. Factors associated with deaths from suicide in a French nationwide HIV-infected cohort. HIV Med. [Internet]. 2018 [cited 2021 Feb 10]. Available from: https://www.hal.inserm.fr/inserm-01872136
- 10. Galvão MC, Ricarte ILM. Systematic literature review: concept, production and publication. Logeion: filosofia da informação[Internet]. 2019 [cited 2021 Feb 23];6(1):57-73. Available from: http://revista.ibict.br/fiinf/article/view/4835
- 11. Santos CMC, Pimenta CAM, Nobre MRC. The PICO strategy for the research question construction and evidence search. Rev Latino-am Enfermagem [Internet]. 2007 [cited 2021 Mar 30];15(3):508-11. Available from: https://www.scielo.br/j/rlae/a/CfKNnz8mvSqVjZ37Z77pFsy/? lang=en&format=pdf
- 12. Limaye D, Fortwengel G, Pitani RS, Limaye V, Sydymanov A, Otzipka C, et al. Development of a quantitative scoring method for STROBE checklist. Acta Poloniae Pharmac[Internet]. 2018 [cited 2021 Mar 01];75(5):1095-106. Available from: https://www.researchgate.net/publication/328841644\_Development\_of\_a\_quantitative\_scoring\_method\_for\_STROBE\_checklist
- 13. Selçuk AA. A guide for systematic reviews: PRISMA. Turk Arch Otorhinolaryngol [Internet]. 2019 [cited 2021 Mar 01];57(1):57-58. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6461330/
- 14. Wonde M, Mulat H, Birhanu A, Biru A, Kassew T, Shumet S. The magnitude of suicidal ideation, attempts and associated factors of HIV positive youth attending ART follow ups at St. Paul's hospital Millennium Medical College and St. Peter's specialized hospital, Addis Ababa,

- Ethiopia. PLoS One[Internet]. 2019 [cited 2021 Mar 12];14(11):e0224371. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6830816/
- 15. Wang W, Chen X, Li S, Yan H, Yu B, Xu Y. Cusp Catastrophe Modeling of Suicide Behaviors among People Living with HIV in China. Nonlinear Dynamics Psychol Life Sci [Internet]. 2019 [cited 2021 Mar 01];23(4):491-515. Available from: https://pubmed.ncbi.nlm.nih.gov/31586499/
- 16. Mandell LN, Rodriguez VJ, De La Rosa A, Abbamonte JM, Sued O, Cecchini D, et al. Suicidal Ideation Among Adults Re-engaging in HIV Care in Argentina. AIDS Behav [Internet]. 2019 [cited 2021 Mar 01];23(12):3427-34. Available from: https://pubmed.ncbi.nlm.nih.gov/31049810/
- 17. Lu HF, Sheng WH, Liao SC, Chang NT, Wu PY, Yang YL, et al. The changes and the predictors of suicide ideation and suicide attempt among HIV-positive patients at 6-12 months post diagnosis: a longitudinal study. J Adv Nurs [Internet]. 2019 [cited 2021 Apr 03];75(3):573-84. Available from: https://onlinelibrary.wiley.com/doi/10.1111/jan.13883
- Bengtson AM, Pence BW, Mollan KR, Edwards JK, Moore RD, O'Cleirigh C, et al. The Relationship between Efavirenz® as Initial Antiretroviral Therapy and Suicidal Thoughts Among HIV-Infected Adults in Routine Care. J Acquir Immune Defic Syndr[Internet]. 2017 [cited 2021 Apr 03];76(4):402-8. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5659970/
- 19. Kalungi A, Seedat S, Hemmings SMJ, van der Merwe L, Joloba ML, Nanteza A, et al. Association between serotonin transporter gene polymorphisms and increased suicidal risk among HIV positive patients in Uganda. BMC Genet [Internet]. 2017 [cited 2021 Apr 03];18(1):71. Available from: https://bmcgenomdata.biomedcentral.com/articles/10.1186/s12863-017-0538-y
- 20. Liu Y, Niu L, Wang M, Chen X, Xiao S, Luo D. Suicidal behaviors among newly diagnosed people living with HIV in Changsha, China. AIDS Care [Internet]. 2017 [cited 2021 Apr 13];29(11):1359-63. Available from: https://pubmed.ncbi.nlm.nih.gov/28593797/
- 21. Egbe CO, Dakum PS, Ekong E, Kohrt BA, Minto JG, Ticao CJ. Depression, suicidality, and alcohol use disorder among people living with HIV/ AIDS in Nigeria. BMC Public Health [Internet]. 2017 [cited 2021 Apr 07];17(1):542. Available from: https://bmcpublichealth.biomedcentral. com/articles/10.1186/s12889-017-4467-5
- 22. Carrieri MP, Marcellin F, Fressard L, Préau M, Sagaon-Teyssier L, Suzan-Monti M, et al. Suicide risk in a representative sample of people receiving HIV care: time to target most-at-risk populations (ANRS VESPA2 French national survey). PLoS One [Internet]. 2017[cited 2021 Apr 03];12(2):e0171645. Available from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0171645
- 23. Kang CR, Bang JH, Cho SI, Kim KN, Lee HJ, Ryu BY, et al. Suicidal ideation and suicide attempts among human immunodeficiency virus-infected adults: differences in risk factors and their implications. AIDS Care [Internet]. 2016 [cited 2021 Apr 15];28(3):306-13. Available from: https://www.tandfonline.com/doi/abs/10.1080/09540121.2015.1093593
- 24. Mollan KR, Smurzynski M, Eron JJ, Daar ES, Campbell TB, Sax PE, et al. Association between Efavirenz® as initial therapy for HIV-1 infection and increased risk for suicidal ideation or attempted or completed suicide: an analysis of trial data. Ann Intern Med. 2014;161(1):1-10. https://doi.org/10.7326/M14-0293.
- 25. Chikezie UE, Otakpor AN, Kuteyi OB, James BO. Suicidality among individuals with HIV/AIDS in Benin City, Nigeria: a case-control study. AIDS Care [Internet]. 2012 [cited 2021 Apr 17];24(7):843-5. Available from: https://pubmed.ncbi.nlm.nih.gov/22272812/
- 26. McManus H, Petoumenos K, Franic T, Kelly MD, Watson J, O'Connor CC, et al. Australian HIV Observational Database. Determinants of suicide and accidental or violent death in the Australian HIV Observational Database. PLoS One. [Internet] 2014 [cited 2021 Apr 15];19;9(2):e89089. Available from: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0089089
- 27. Almeida SM, Barbosa FJ, Kamat R, Pereira AP, Raboni SM, Rotta I, et al. HNRC Group. Suicide risk and prevalence of major depressive disorder (MDD) among individuals infected with HIV-1 subtype C versus B in Southern Brazil. J Neurovirol[Internet]. 2016 [cited 2021 Apr 5];22(6):789-798. Available from: https://pubmed.ncbi.nlm.nih.gov/27431676/
- 28. López JD, Shacham E, Brown T. Suicidal Ideation Persists Among Individuals Engaged in HIV Care in the Era of Antiretroviral Therapy. AIDS Behav [Internet]. 2018 [cited 2021 Apr 19];22(3):800-5. Available from: https://pubmed.ncbi.nlm.nih.gov/28063073/
- 29. Alderete-Aguilar C, Cruz-Maycott R, Candela-Iglesias M, Rodríguez-Estrada E, Reyes-Terán G. Assessment of depression, anxiety, hopelessness and suicidal risk in HIV+ inpatients. Salud Ment[Internet]. 2017 [cited 2021 Apr 15];40(1):23-28. Available from: http://www.scielo.org.mx/scielo.php?script=sci\_arttext&pid=S0185-33252017000100023
- 30. Jaspal R, Erickson P, Nynas P. Identity, Threat and Coping among Gay Men Living with HIV in Finland. Cogent Psycology[Internet]. 2021 [cited 2021 Aug 15];8(1):e1878980. Available from: https://www.tandfonline.com/doi/full/10.1080/23311908.2021.1878980
- 31. Fernandes H, Oliveira EM, Ventura RN, Horta ALM, Daspett C. Violence and vulnerability to HIV/Aids in young homosexuals and bisexuals. Acta Paul Enferm [Internet]. 2017 [cited 2021 Jun 15];30(4):390-6. Available from: https://www.scielo.br/j/ape/a/4GmytzFPxc57q4J9nNCXYJB/?lang=en
- 32. Merril K, Campbell JC, Decker MR, McGready J, Burke VM, Mwansa JK, et al. Past-Year Violence Victimization is Associated with Viral Load Failure Among HIV-Positive Adolescents and Young Adults. Aids Behavior [Internet]. 2021 [cited 2021 Jul 10];23:1373-83. Available from: https://pubmed.ncbi.nlm.nih.gov/32761474/
- 33. Leis M, McDermott, Koziarz A, Szadkowski L, Kariri A, Beattie TS, et al. Intimate partner and client-perpetrated violence are associated with reduced HIV pre-exposure prophylaxis (PrEP) uptake, depression and generalized anxiety in a cross-sectional study of female sex workers from Nairobi, Kenya. J Int Aids Soc[Internet]. 2021 [cited 2021 Aug 28];24(sup2):e25711. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25711
- 34. Burnap P, Colombo G, Amery R, Hodorog A, Scourfield J. Multi-class machine classification of suicide-related communication on Twitter.

  Online Soc Networks Media [Internet]. 2017 [cited 2021 Aug 15];2:32-44. Available from: https://www.sciencedirect.com/science/article/pii/S2468696417300605

- 35. Roberts S, Edwards P, Mulenga D, Chelwa N, Nyblade L, Brander C, et al. Family support for adolescent girls and young women living with HIV in Zambia: benefits, challenges, and recommendations for intervention development. J Assoc Nurs AIDS Care [Internet]. 2021 [cited 2021 Sep 01];32(2):160-73. Available from: https://pubmed.ncbi.nlm.nih.gov/33332869/
- 36. Horta ALM, Fernandes H. Family and crisis: contributions of systems thinking for family care. Rev Bras Enferm [Internet]. 2018 [cited 2021 Sep 01];71(2):234-5. Available from: https://www.scielo.br/j/reben/a/nLh7HsjqYStJZvV3MwR97bb/?lang=en