

A Systematic review of risk factors for suicide among persons living with HIV (1996-2020)

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INTRODUCTION

Persons living with HIV (PWH) are at elevated risk for suicide. With antiretroviral therapy (ART), HIV transitioned from a terminal diagnosis to a chronic disease and the rate of suicide declined. Despite improved prognosis, the risk of suicide remains 3 - 9 times higher for PWH than for the general population.

PWH are at elevated risk for suicide despite the improved prognosis that has come with ART. We sought to improve our understanding of the risk factor driving this increased risk by exploring the following:

1. Identify key risk factors for suicide among PWH, including those specific to HIV infection: CD4, HIV-1 viral load, and ART.
2. Identify gaps in the literature.
3. Provide recommendations for future research.

METHODS

PROTOCOL

We followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses Protocols (PRISMA-P) guidelines.

ELIGIBILITY CRITERIA

Eligibility criteria included: death by suicide as an outcome, study population inclusive of individuals with HIV, study population aged 18 years or older, longitudinal study design, publication in English language, peer-reviewed journals from 01/01/1996 through 10/01/2020.

INFORMATION SOURCES AND SEARCH STRATEGY

Electronic Databases: Medline, EMBASE, PsycINFO, Web of Science, Scopus, and CINAHL.

Search Terms: suicide* suicide attempt*, self-harm*, self-injurious behavior*, HIV, AIDS, PWH, persons with HIV.

Data were extracted into the following seven domains:

Demographic, psychopathology, psychopharmacology, substance use, physical health, HIV-specific risk factors, psychosocial factors.

RESULTS

Figure 1: PRISMA Flow Diagram

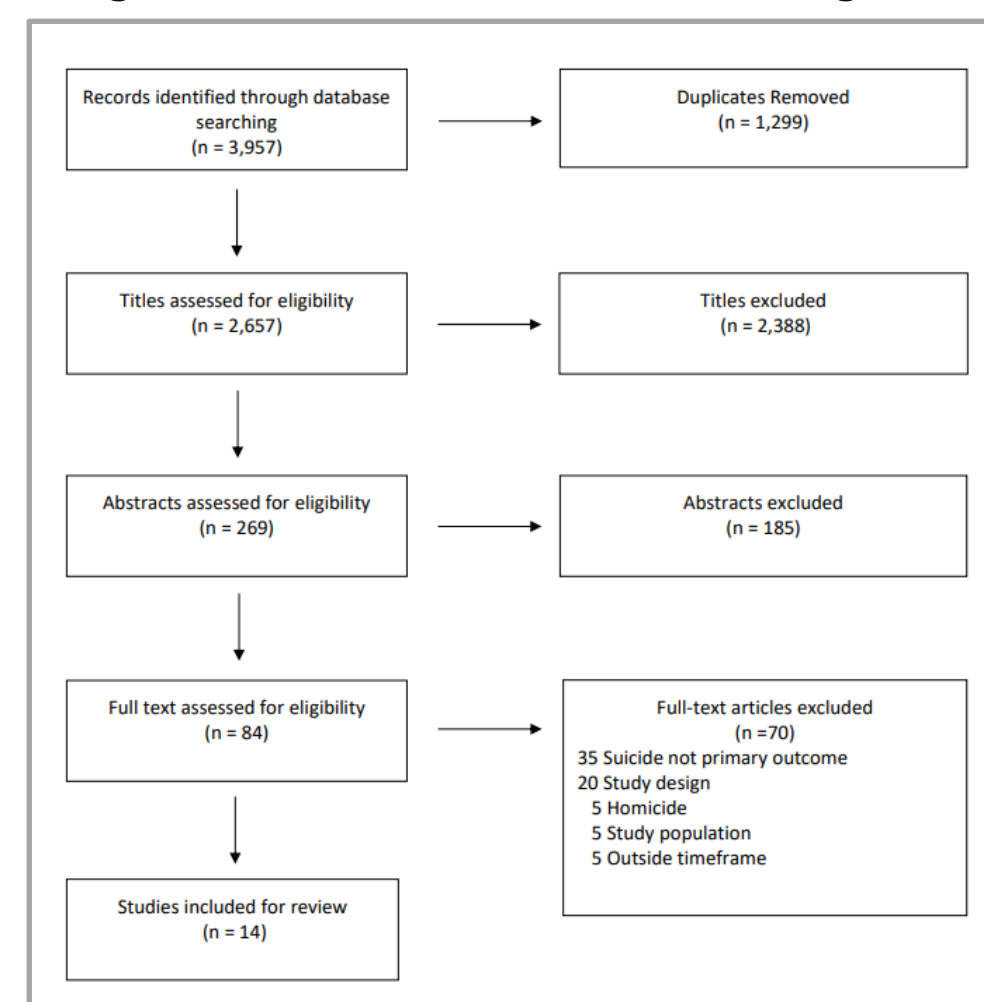
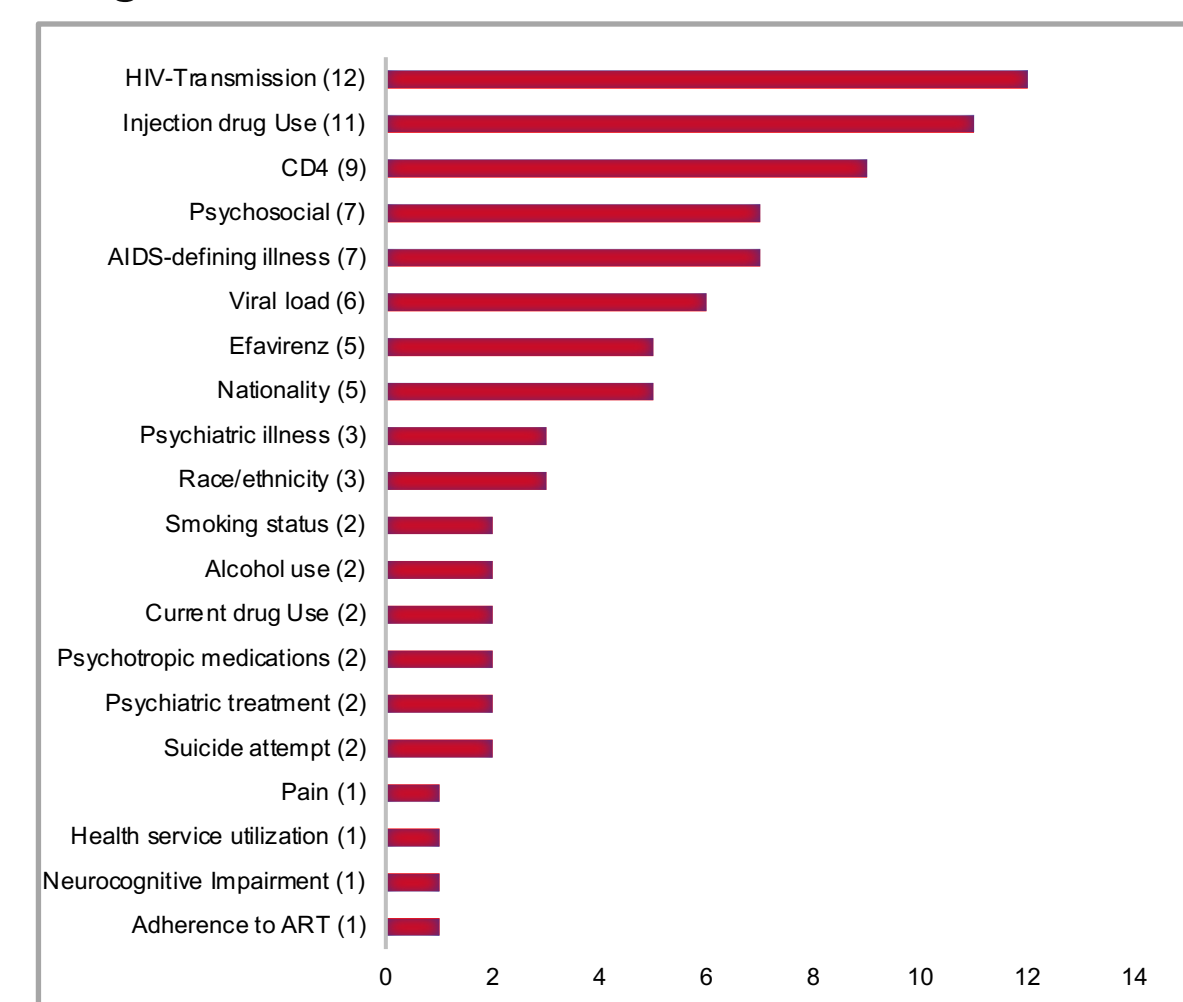


Figure 2: Covariates included in studies



Fourteen studies met the inclusion criteria (Fig. 1)

- Suicide accounted for 2.6–8.5% of deaths
- Standardized mortality ratio (SMR) 2.1–9.6

Studies considered a variety of risk factors (Fig. 2)

- No risk factor included in all 14 studies

Table 1: Risk and protective factors for suicide

Domains	Included Covariates	Adjusted
Demographics	Female	OR=0.21 (0.07-0.67) [6]
	Swiss National	aHR = 2.70 (1.07-6.80) [8]
	Previous Suicide Attempt	aRR= 5.93 (1.58–22.24) [5]
Psychopathology	Hx of Depressive Disorder	aRR = 3.76 (1.49–9.50) [5]
	Hx of Psychiatric illness	aIRR = 11.32 (6.26–20.48) [7]
	Psychiatric Treatment	aHR = 2.42 (1.32-4.43) [12] aRR 3.21 (1.64 - 6.27) [8]
Psychopharmacology	Hx Psychotropic Medication	aRR = 6.37 (2.56–15.85) [5]
Substance Use	History IDU	aHR = 2.09 (1.03 – 4.23) [14] aHR = 2.65 (1.09 – 6.42) [12] aHR = 3.95 (1.99 – 7.86) [4]
	Active Drug Use	aHR = 6.50 (1.51 - 28.03) [13]
	ETOH Current	aRR 3.29 (1.10–9.85) [5]
	> 20 g/day	aRR = 3.56 (1.43–8.88) [5]
Physical Health	Inpatient Hospitalizations	aIRR 5.90 (3.63–9.58) [7]
	Hospitalization < 1 year	aIRR 8.53 (4.82–15.09) [7]
	> 3 Hospital Contacts	aIRR 6.07 (3.02–12.18) [7]
HIV-Specific	per 100 cells/mm ³ decrease	aHR = 0.81 (0.67–0.99) [14]
	per 100 cells/mm ³ increase	aRR= 0.89 (0.81-0.98) [8]
	>= 500 cells/mm ³	aOR= 0.15 (0.03 - 0.70) [9]
	Diagnosis < 2 years	aIRR = 8.10 (4.21–15.61) [7]
Psychosocial	Diagnosis 2-5 years	aIRR = 4.38 (2.12–9.04) [7]
	AIDS Defining Illness	No AIDS defining illness aHR = 4.45 (1.62–12.25) [4]
	Living Alone	aOR = 4.66 (1.59 - 13.68) [9]
	Having Children	aRR = 0.26 (0.10–0.70) [5]
	Unemployed	aOR 14.25 (1.49 - 136.17) [9]

DISCUSSION

PWH remained at elevated risk of suicide despite advances in treatment.

Risk factors for suicide were similar to the general population:

- Psychiatric illness
- Previous suicide attempt
- Psychotropic medication
- Recent and frequent hospitalization
- Drug and alcohol misuse
- Psychosocial stressors

HIV-specific risk factors associated with increased risk:

- Recent diagnosis of HIV < 2 years
- Transmission from injection drug use
- Low CD4 count

Most HIV-specific risk factors were not associated with suicide:

- Viral Load
- Antiretroviral Therapy
- Efavirenz
- Presence of AIDS-defining Illness

Few studies examined chronic illness, multimorbidity or polypharmacy. These factors will become relevant as PWH age. While most HIV-related risk factors were not associated with suicide, these factors merit further examination as low power likely reduced detecting an association.

STRENGTHS

- Research librarian consulted in designing the search strategy
- Several bibliographic databases queried

LIMITATIONS

- Studies limited to Europe, North America, Australia, and Japan
- Selection of risk factors and operationalization of these factors varied across studies, limiting strong comparison across studies