

# Associations Between Stigma and Physical and Mental Health in the U.S. Military HIV Natural History Study

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## INTRODUCTION

- HIV-related stigma is commonly reported, associated with adverse mental and physical health, and a significant barrier to care
- The majority of research on HIV-related stigma, to date, has focused on civilians
- Despite increasing attention to HIV-related stigma within the Department of Defense, little research has assessed this population
- The current study, therefore, assessed experienced and internalized stigma, and associations with mental and physical health among service members, retirees, and dependents living with HIV

## METHOD

- The current study utilized cross-sectional data collected within the U.S. Military HIV Natural History Study, a longitudinal cohort study
- Participants completed the following measures:
  - Center for Epidemiologic Studies Depression scale (CES-D)
    - Clinical depression defined as scores  $\geq 16$
  - Short Form Health Survey (SF-36)
    - Physical Component Summary Score (PCSS)
    - Mental Component Summary Score (MCSS)
  - HIV Stigma Scale
    - Internalized (continuous)
    - Experienced (dichotomized)
    - Experienced in healthcare (dichotomized)
- Linear and logistic regressions were used to examine associations between internalized stigma and physical health, mental health, and depression
- All analyses were adjusted for age, race, sex, marital status, military rank, and duty status

## RESULTS

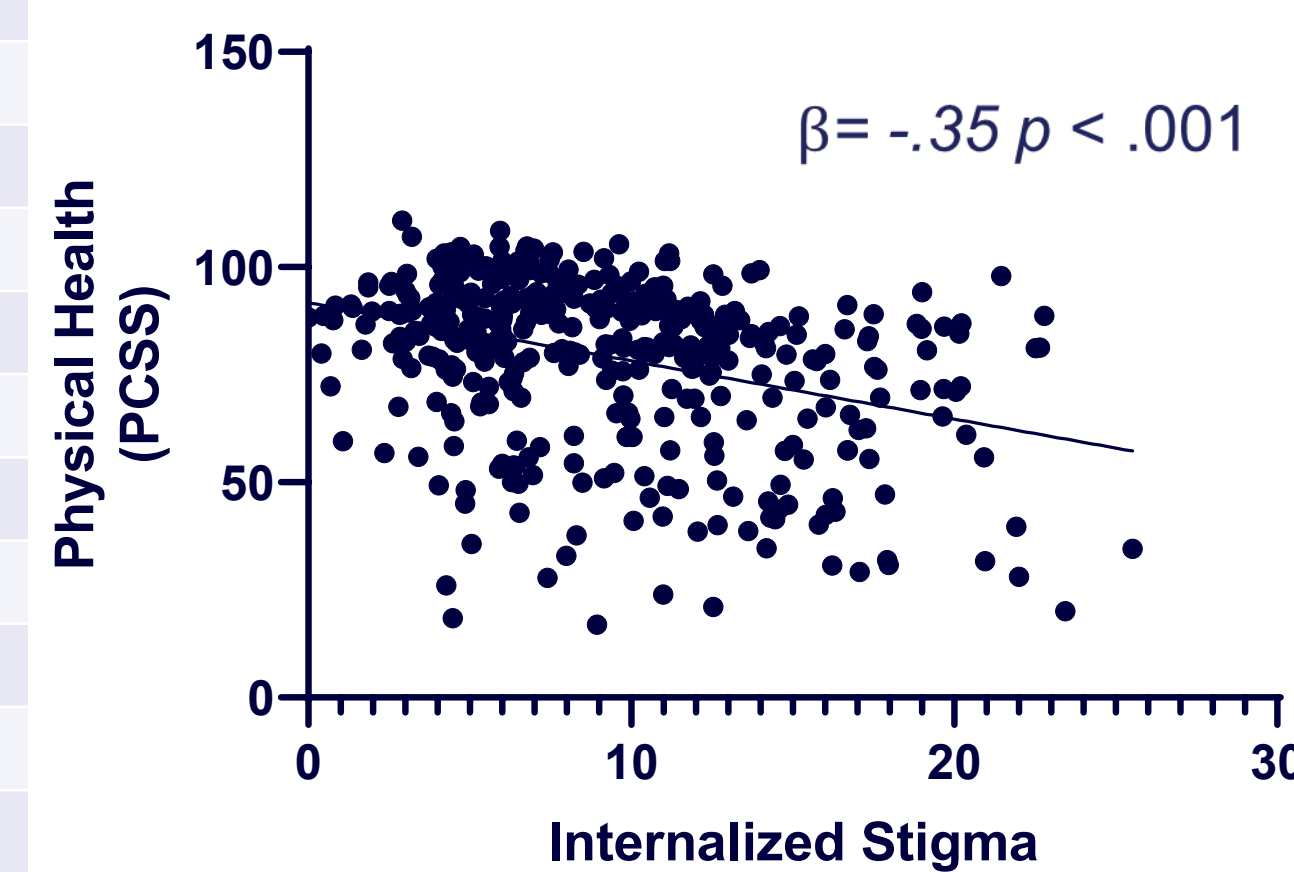
**Table 1. Participant Characteristics (n = 399)**

	Mean $\pm$ SD or %(n)
Sex	
Male	93.5 (373)
Female	6.5 (26)
Age at Visit (years)	50.81 $\pm$ 13.16
Age at HIV Diagnosis (years)	31.71 $\pm$ 8.03
Race/Ethnicity	
White/Caucasian	36.7 (146)
Black/African American	46.0 (183)
Hispanic/Latinx	11.8 (47)
Asian/Pacific Islander	2.8 (11)
Other Race/Ethnicity	2.8 (11)
Service Branch	
Army	28.3 (113)
Navy	44.6 (178)
Air Force	16.5 (66)
Marine Corps	7.3 (29)
Other (e.g., Coast Guard, PHS, National Guard)	3.3 (13)
Current Duty Status	
Active Duty	31.3 (125)
Retired (Permanent or Temporary)	65.4 (261)
Dependent/Other	3.3 (13)
Rank	
Officer/Warrant	16.8 (67)
Enlisted	78.4 (313)
Not Listed or Not Applicable	4.8 (19)
Reported HIV-Related Stigma in Past Year	14.1 (390)
Reported HIV-Related Stigma in Healthcare in Past Year	7.7 (30)
Internalization of HIV-Related Stigma (0 – 21)	5.90 $\pm$ 5.20

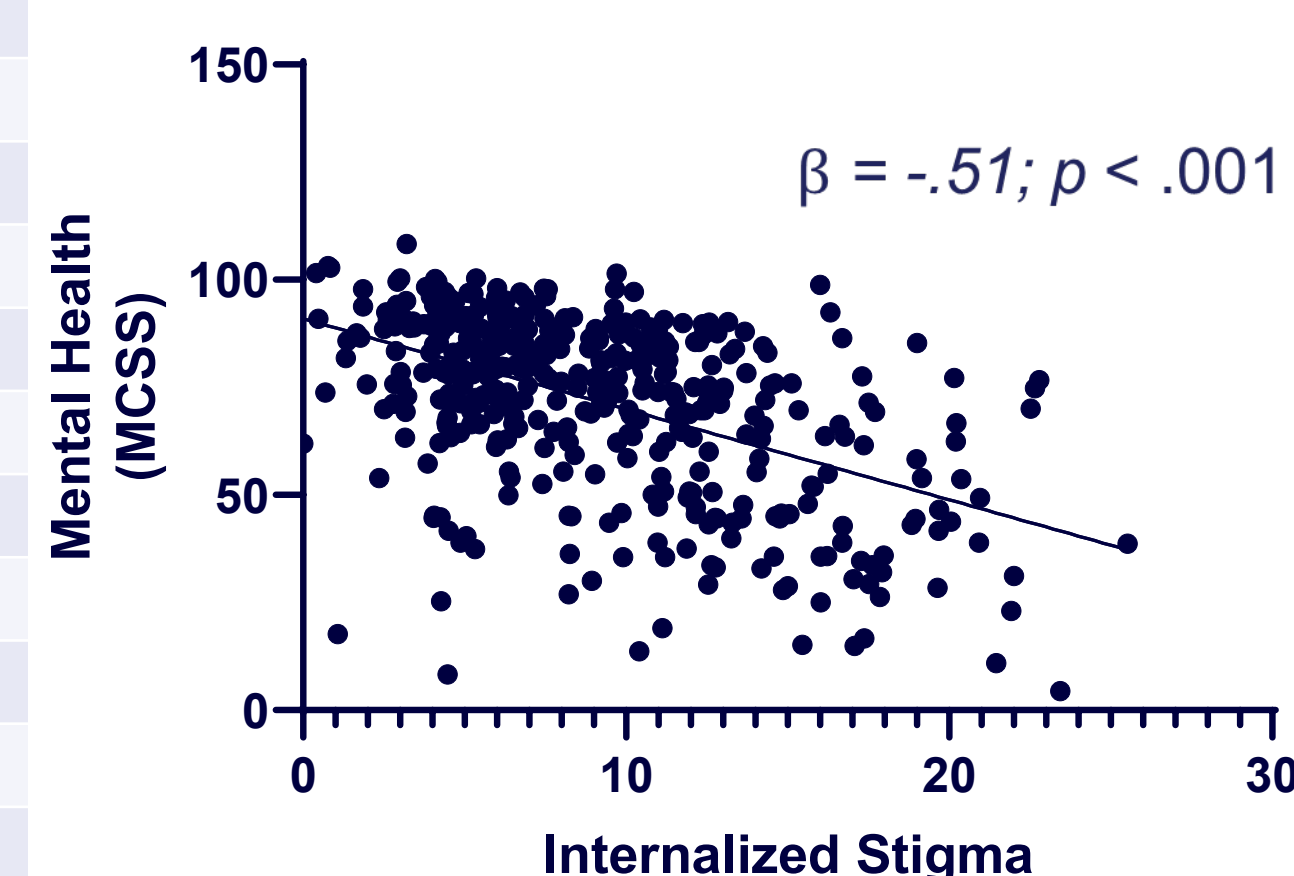
**Table 2. The Association of Internalized HIV-Related Stigma with the Likelihood of Clinical Depression**

	Odds Ratio (95%CI)	p-value
<b>Internalized Stigma</b>	<b>1.26 (1.19 – 1.34)</b>	<b>&lt; .001</b>
Age at visit	0.98 (0.94 – 1.01)	0.19
Sex	1.89 (0.49 – 7.31)	0.36
Race	0.85 (0.46 – 1.57)	0.60
Rank	0.66 (0.29 – 1.50)	0.33
Marital Status	1.03 (0.58 – 1.82)	0.92
Duty Status	0.48 (0.19 – 1.23)	0.13

**Figure 1a. The Association of Internalized Stigma with Physical Health**



**Figure 1b. The Association of Internalized Stigma with Mental Health**



Figures are adjusted for age, race, sex, marital status, military rank, and duty status

## SUMMARY

- Within the U.S. Military HIV Natural History Study:
  - 14% reported experiencing HIV-related stigma
  - 7% reported HIV-related stigma in healthcare
- The internalization of HIV-related stigma was significantly associated with:
  - Poorer physical health
  - Poorer mental health
  - Greater odds of reporting clinically significant depression

## CONCLUSION

- A small but significant minority of participants reported experiencing stigma – both generally as well as within healthcare settings
- Internalized stigma was associated with poorer physical and mental health, and depression
- Future research is needed to:
  - Explore associations between stigma and ART adherence and CD4 count
  - Elucidate temporal associations using prospective designs
  - Evaluate and address sources of stigma in the military setting
- Results signal a need for continued efforts to assess experienced and internalized stigma among service members and retirees with HIV

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