Mental Health, Quality of Life, and Accessibility to Care Among Virally-Suppressed People Living With HIV in the United States

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Introduction

- The life expectancy of people living with HIV (PLHIV) in the United States (US) has improved dramatically in the last 25 years, and more PLHIV than ever are virally suppressed (VS).
- However, HIV is a complex chronic condition associated with a myriad of concurrent conditions including mental illness.
- Mental illness has been associated with poor medication adherence and quality of life (QoL) among PLHIV.[1,2]
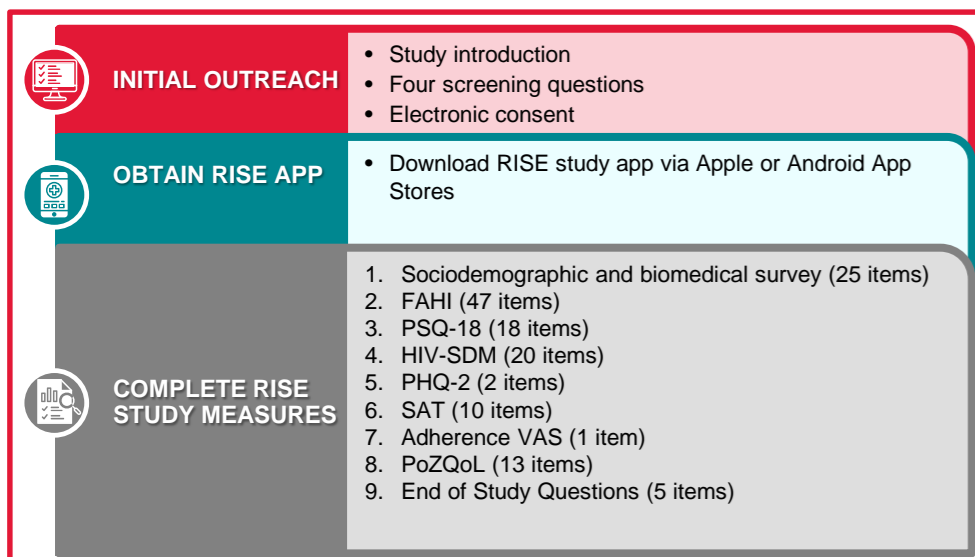
Objective

The "**R**eal-word **I**nsights of PLHIV **S**hared through **E**lectronic devices" (RISE) study was a cross-sectional survey designed to obtain an up-to-date understanding of the unmet needs in VS PLHIV, especially health-related quality of life (HRQoL) associated with HIV becoming a chronic, long-term disease.

Methods

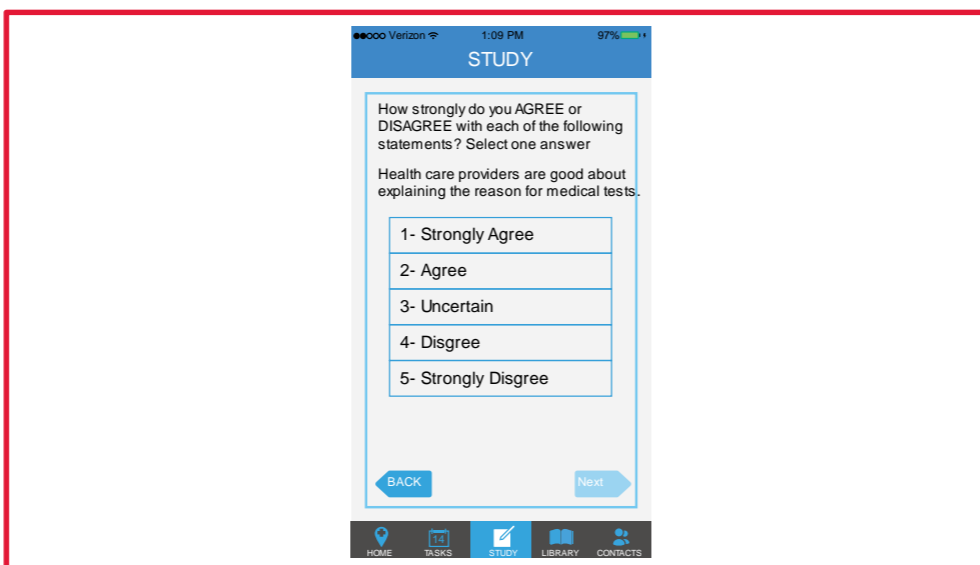### Participant Recruitment and Study Measures

- Participants were recruited via social media and patient clinic referrals before they completed the survey on a mobile application that was downloaded directly to their device after screening for eligibility.
- Key eligibility criteria included:
  - Being at least 21 years of age
  - Self-reported diagnosis of HIV infection by healthcare provider (HCP)
  - Possessing a smartphone with internet access
- Participants completed the RISE study via the event schedule shown in **Figure 1**. An example screenshot of the mobile app is shown in **Figure 2**.

Figure 1. RISE Study Event Schedule

INITIAL OUTREACH	• Study introduction • Four screening questions • Electronic consent
OBTAIN RISE APP	• Download RISE study app via Apple or Android App Stores
COMPLETE RISE STUDY MEASURES	1. Sociodemographic and biomedical survey (25 items) 2. FAHI (47 items) 3. PSQ-18 (18 items) 4. HIV-SDM (20 items) 5. PHQ-2 (2 items) 6. SAT (10 items) 7. Adherence VAS (1 item) 8. PoZQoL (13 items) 9. End of Study Questions (5 items)

Methods (cont.)

Figure 2. Example Screen from RISE Mobile App

Analyses

- Study measures were summarized using descriptive statistics. Frequencies and percentages were reported for categorical variables; means, medians, and standard errors for continuous variables.
- Differences in respective scores were evaluated using two-tailed t-tests. In addition, a two-point difference in the FAHI domain scores and a five-point difference in the total score are generally considered clinically meaningful and were used as benchmarks for comparisons.[3]

  Multiple regression models were conducted to evaluate the impact of mental health on QoL. A full model with all predictors and covariates as well as a reduced model, where specific variables were removed due to non-significance and/or collinearity were conducted.
- All subsequent analyses were conducted for virally suppressed PLHIV only.

Results

- A total of 1,226 PLHIV completed the RISE survey; 92% of the sample self-reported being VS (n=1,134). VS participant demographics are outlined in **Table 1**.
- The relationship between QoL and mental health was assessed among VS participants. VS participants with a mental health condition reported significantly lower QoL than participants without a mental health condition, except on the FAHI social well-being and cognitive functioning scores **(Figure 3)**.
- Furthermore, VS participants with depression reported lower QoL even when controlling for key demographic variables (F= 278.3; p-value<0.0001; R2=.77) **(Table 2)**. Depression was defined by the total score on the PHQ-2, a two-item depression screener.

Results (cont.)

Table 1. Virally-Suppressed Sample Demographics

Sociodemographic Characteristics	Virally Suppressed (n=1,134)
Gender	
Male	933 (82.3%)
Female	184 (16.2%)
Transgender	13 (11.5%)
Other	4 (0.4%)
Age	
Less than 50 years old	641 (56.5%)
≥ 50 years old	489 (43.1%)
Missing	4 (0.4%)
Sexual Orientation	
Heterosexual/Straight	188 (16.6%)
Homosexual/Gay/Lesbian	883 (77.9%)
Bisexual	53 (4.7%)
Asexual	3 (0.3%)
Other	6 (0.5%)
Prefer not to say	1 (0.1%)
Ethnicity/Race	
Black, Non-Hispanic	286 (25.2%)
White, Non-Hispanic	617 (54.4%)
Hispanic or Latino	181 (16.0%)
Other	50 (4.4%)
Month since Diagnosed with HIV (n=1,122)	
Mean (SD)	172.2 (115.0)
Range (min-max)	1 – 436
Key Comorbiditiesa	
Anxiety	963 (84.9%)
Depression/Bipolar disorder	522 (46.0%)

SD =standard deviation
a Not mutually exclusive

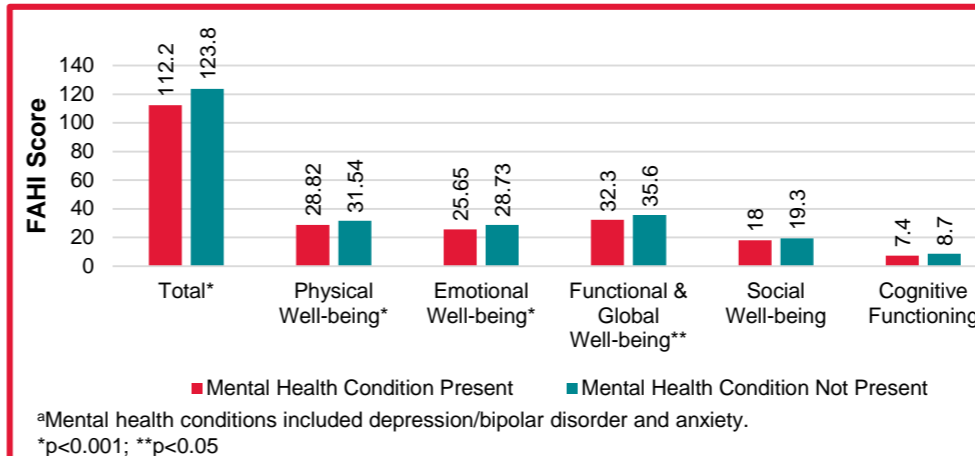### Figure 3. Impact of Mental Health[a] on QoL for VS Participants

[a]Mental health conditions included depression/bipolar disorder and anxiety.
*p<0.001; **p<0.05

Results (cont.)

Table 2. Association of Key Characteristics and QoL in VS Sample

	Reduced Model (n=1,007)	
Parameters	**Estimate (SE)**	**p-value**
Intercept	163.3 (3.32)	<.0001
Income (Ref: <$10,000)		
$10,000-$29,999	2.1 (1.52)	0.1593
$30,000-$49,999	4.5 (1.76)	0.0102
$50,000-$69,999	6.9 (2.13)	0.0011
$70,000-$89,999	6.8 (2.41)	0.0048
$90,000 or more	8.2 (2.16)	0.0002
Type of Insurance (Ref: Private Insurance)		
Medicare	-4.8 (1.47)	0.0012
Medicaid	-3.2 (1.64)	0.0498
Ryan White	0.7 (1.77)	0.7024
HIV-SDM Symptom Count	-1.7 (0.12)	<.0001
PROs		
ISAT total score	-1.0 (0.06)	<.0001
PHQ-2 score	-7.1 (0.30)	<.0001
PSQ-18 General Satisfaction Score	3.0 (0.49)	<.0001

HIV-SDM =HIV Symptom Index; ISAT= ???; PHQ-2 = 2-Item Patient Health Questionnaire; PRO= Patient-reported outcomes; PSQ-18 = 18-Item Patient Satisfaction Questionnaire; SE =standard error

Conclusions

- This study highlights the remaining unmet needs surrounding QoL and mental health conditions for PLHIV.
- As PLHIV live longer and struggle with multiple, chronic comorbid conditions, it is important that HCPs have discussions with their patients regarding mental health in order to help reduce the bur-den on QoL and lower the risk of poor medication adherence.
- Future studies should continue to explore the relationship between comorbidities and QoL in PLHIV and barriers to access to HIV treatment.

Limitations

- Participants self-reported all sociodemographic and clinical characteristics, including HIV diagnosis.
- Participants were recruited via social media and the survey experienced substantial non-completion rates throughout the study events. While this recruitment method and non-response rate is commonplace for this type of electronic data capture study, some consideration should be given to the generalizability of the study.

References

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2. Cook JA, Cohen MH, Burke J, et al. Effects of Depressive Symptoms and Mental Health Quality of Life on Use of Highly Active Antiretroviral Therapy Among HIV-Seropositive Women. *J Acquir Immune Defi. Syndr.* 2002; 30: 401-409.
3. Brucker PS, Yost K, Cashy J, Webster K, Cella D. General population and cancer patient norms for the Functional Assessment of Cancer Therapy-General (FACT-G). *Eval Health Prof.* 2005. 28(2), pp: 192–211.