

Patricia de los Rios,¹ Brent Allan,² Chinyere Okoli,³ Benjamin Young,¹ Erika Castellanos,⁴ Garry Brough,⁵ Anton Eremin,⁶ Giulio Maria Corbelli,⁷ Marvelous Muchenje,⁸ Marta Mc Britton,⁹ Nicolas Van de Velde³

¹ViiV Healthcare, Research Triangle Park, NC, USA; ²The International Council of AIDS Service Organizations (ICASO), Toronto, Canada; ³ViiV Healthcare, Brentford, Middlesex, UK; ⁴Global Action for Trans* Equality (GATE), New York, NY, USA; ⁵Positively UK, London, UK; ⁶AIDS Center Foundation, Moscow, Russia; ⁷European AIDS Treatment Group, Rome, Lazio, Italy; ⁸ViiV Healthcare, Quebec, Canada; ⁹Instituto Cultural Barong, São Paulo, Brazil

Introduction

- Despite effectiveness of antiretroviral therapy (ART), some people living with HIV (PLHIV) still face barriers to daily oral ART adherence¹
- Some of these barriers include inconvenient scheduling, food requirements with ART, adverse effects, and privacy concerns
- We characterized treatment-related physical, emotional, and psychosocial challenges among PLHIV from 25 countries

Methods

- We analyzed data from the 2019 Positive Perspectives Study of PLHIV, a global, web-based survey conducted in 25 countries (n = 2389). Inclusion criteria for the survey were: (1) Be willing and able to provide informed consent, (2) aged 18 to 84 years, (3) self-identify as having been diagnosed with HIV, (4) currently on ART, and (5) resident of a participating country. Methodology is described elsewhere^{1,2}
- The survey assessed for presence of specific treatment challenges and experiences:
 - Viral suppression was defined as a response of "Undetectable" or "Suppressed" to the question, "What is your most recent viral load?"
 - "Optimal health" was assessed within the past 4 weeks; self-rating of health as "Good" or "Very good" was classified as "optimal" (vs "Neither good nor poor," "Poor," or "Very poor")
 - Concerns toward HIV treatment as well as interactions with healthcare providers (HCPs): Responses of "Agree" or "Strongly agree" were classified as a positive indication that the concern existed (vs "Strongly disagree," "Disagree," or "Neither agree nor disagree")
 - Suboptimal adherence was defined as having missed HIV medication ≥ 5 times in the past month because of ≥ 1 reason
 - Difficulty swallowing pills was defined as scores ≥ 3 (on an ordinal scale from 1 to 5) in response to the question: "In general, how easy or difficult do you find it to swallow pills?" Scores of 1 or 2 were classified as absence of difficulty
 - Respondents were classified as having treatment satisfaction if they scored ≥ 4 (on an ordinal scale from 1 to 5) in response to the question: "Overall, how satisfied are you with your current HIV medication?"
 - A report of being comfortable discussing health concerns with HCP was defined as a response of "Very comfortable" or "Comfortable" (vs "Neither comfortable nor uncomfortable," "Uncomfortable," or "Very uncomfortable")
- Analyses: prevalence estimates computed and compared with χ^2 tests at $P < 0.05$

Results

Figure 1. Characteristics of the Study Population in 25 Countries

Variable	Categories	Distribution
Self-reported virologic status	Indeterminate (114)	5%
	Nonsuppressed (505)	21%
	Suppressed (1770)	74%
Age	<50 (1690)	71%
	50+ (699)	29%
Gender	Men (1623)	68%
	Other gender (70)	3%
	Women (696)	29%
Year of HIV diagnosis	2017 to 2019 (548)	23%
	2010 to 2016 (913)	38%
	Pre-2010 (928)	39%
Region	Northern America (520)	22%
	Europe (1119)	47%
	Latin America (221)	9%
	Asia (230)	10%
	Australia (120)	5%
	South Africa (179)	7%

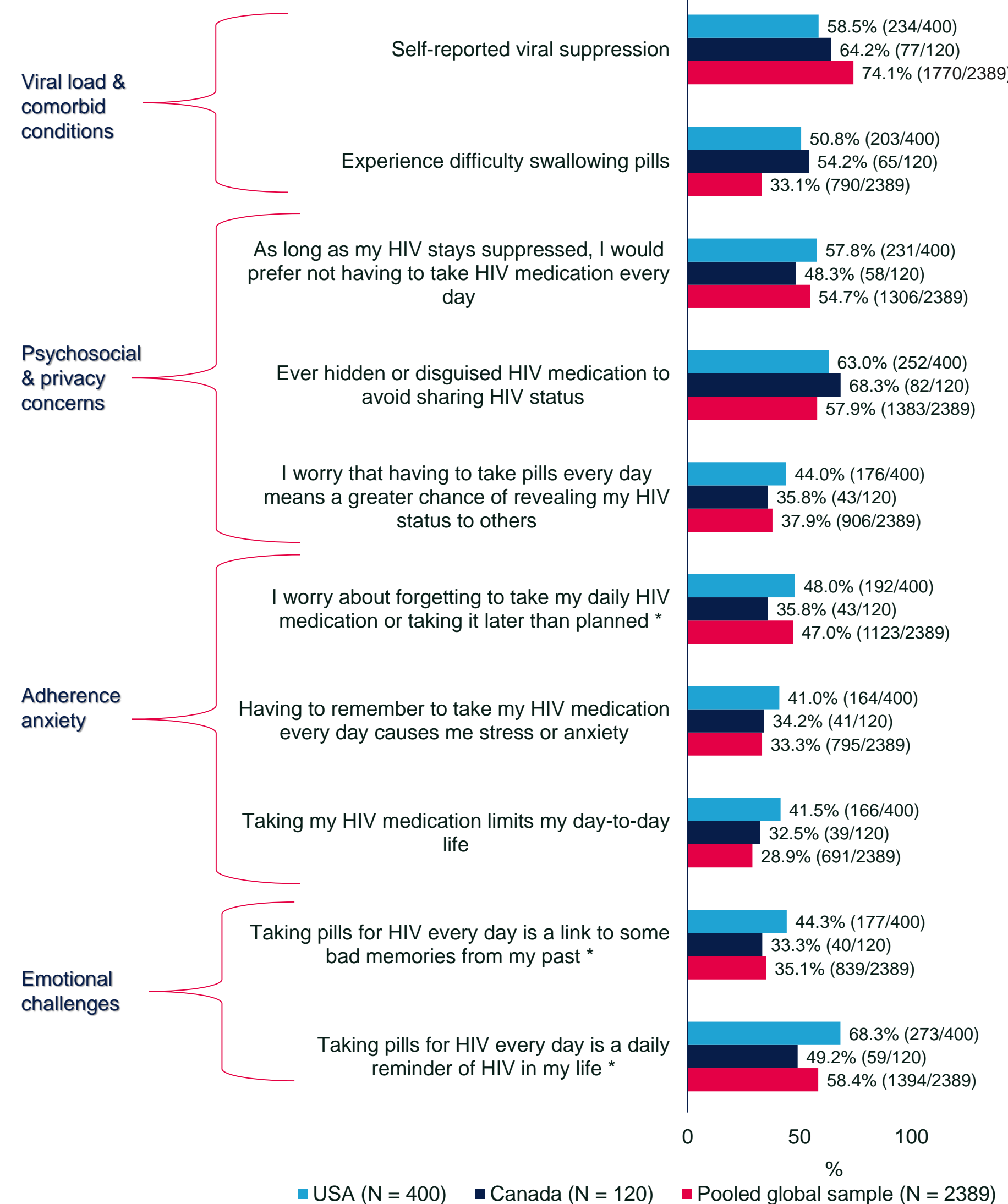
Mean (SD) of age was 41.2 (12.2) years in the pooled sample from 25 countries

Most of the study population reported being:

- Virally suppressed (74%)
- Younger (age <50 y, 71%)
- Men (68%)
- Diagnosed prior to 2017 (77%)
- White (58.3%)

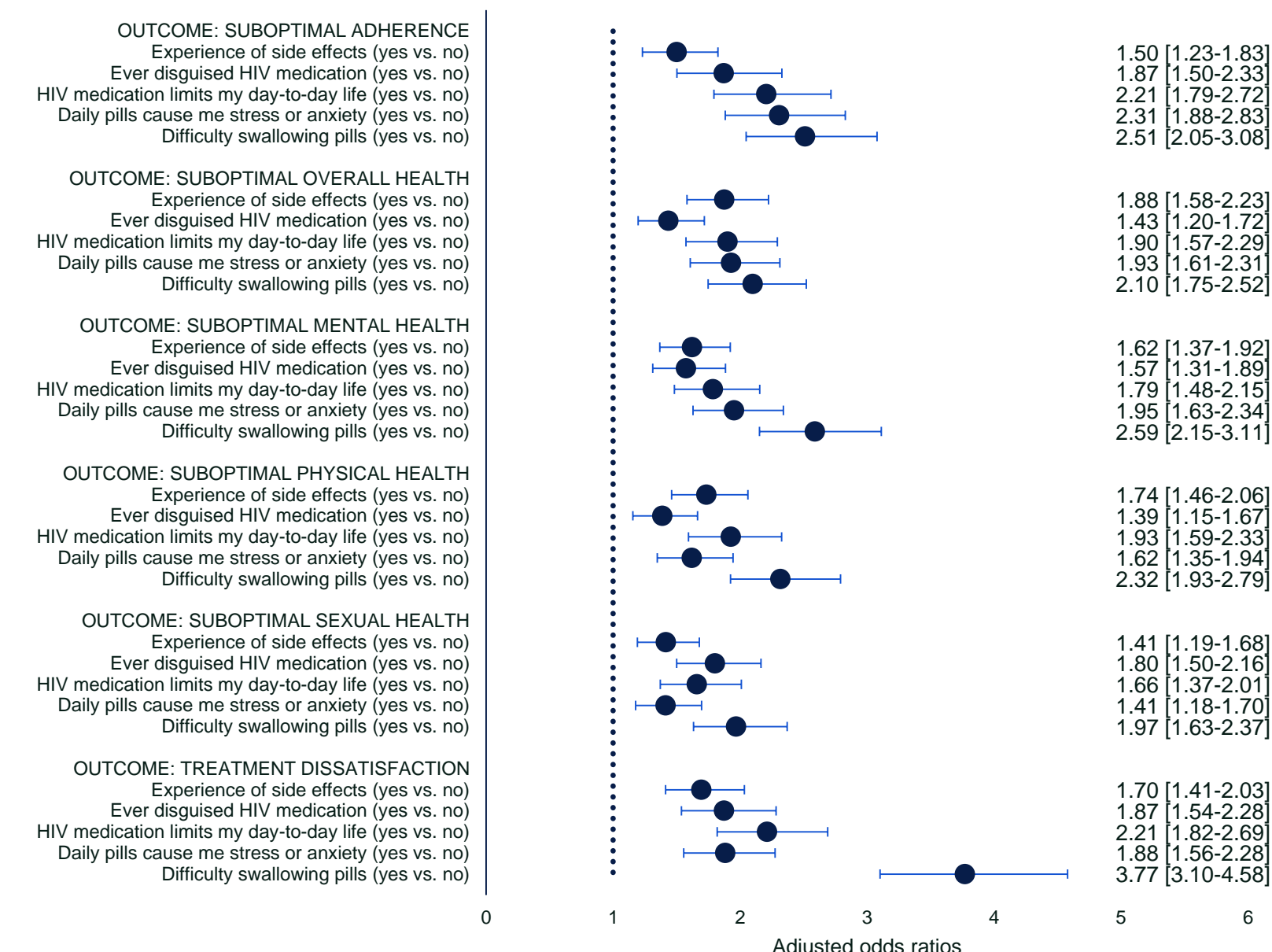
Figure 2. Percentage of PLHIV From 25 Countries Who Reported Various Treatment Challenges

* $P < 0.05$ between the United States and Canada.



- ART-related challenges included difficulty swallowing pills (33.1%), adherence anxiety (33.3%), pills as daily reminder of HIV (58.4%), and fear of disclosure (57.9%)
- Privacy and emotional challenges were generally similar in the North American subpopulation

Figure 3. Adjusted Odds Ratios of the Relationship Between Various Treatment Challenges and Poor Health Outcomes Among PLHIV From 25 Countries, Adjusted for Age, Gender, Education, Ethnicity, Region, and HIV Duration (N=2389)



- There was a positive association between the various treatment challenges and negative self-reported outcomes. Difficulty swallowing pills, for example, increased the odds of all negative outcomes assessed by about 2 to 3 times
- Side effects, disguising/hiding HIV medications, the perception HIV medication limits day-to-day life, and perceived stress from daily dosing schedule, all were associated with poorer health outcomes among PLHIV

Strengths and Limitations

- This study's strength is its use of a standardized instrument to collect information from PLHIV with verified diagnoses across 25 countries, covering every continent
- Major limitations include non-probabilistic sampling and use of online questionnaires, which may limit generalizability. Only associations can be inferred from the cross-sectional design

Conclusions

- Despite the majority reporting undetectable viral loads, participants also reported several challenges with daily oral ART
- Difficulty swallowing, side effects, and emotional concerns, such as fear of disclosure, adherence anxiety, and the daily reminder of HIV, were all associated with poorer health outcomes
- Increased flexibility of ART delivery may help meet diverse patient needs and improve aspects of quality of life

Acknowledgments: We deeply thank survey participants and community groups that helped with enrolment. Statistical analyses and medical writing were supported by Zatum LLC.

References: 1. Okoli et al. *Prev Chronic Dis.* 2020;17:190359. 2. de Los Rios et al. *Popul Med.* 2020;2:23.