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Background

- Remarkable, global scale-up of antiretroviral treatment (ART) has seen 20.7 million people living with HIV (PLHIV) on treatment, accelerating attainment of UNAIDS' target to end AIDS as a public health threat by 2030^{1,2}
- PLHIV should be supported in their efforts to remain on ART
- The evidence-based informational campaign, “Undetectable Equals Untransmittable” (U=U), is an empowering discussion that may help motivate and incentivize PLHIV to reach and maintain and sustain viral suppression^{3,4}
- Study objective:** We investigated the percentage of PLHIV informed of “U=U” by their healthcare provider (HCP) and measured associations with health-related outcomes

Methods

- We analyzed data from the 2019 Positive Perspectives (PP2) survey of PLHIV in 25 countries (N=2389)⁵
- This was a web-based survey conducted between April 2019 and January 2020 to capture attitudes, perceptions, and knowledge about ART
- A combination of different non-probability-based sampling approaches was used to recruit participants, including snowball sampling, targeted sampling within patient advocacy groups, patient support groups or HIV charities; and use of existing panels of PLHIV
- Inclusion criteria for PP2 were as follows:
 - Be willing and able to provide electronic/verbal informed consent to participate
 - Male or female, aged 18 to 84 years
 - Self-identify as having been diagnosed by a doctor or other HCP as being HIV seropositive
 - Currently being treated with ART (self-reported)
 - Resident of a country participating in the survey
 - Able to read, speak, and understand English or other languages that the survey is available in

Key Measures and Approach

- Participants indicated their agreement with the statement: “My provider has told me about ‘undetectable = untransmittable’ (U=U)” (“agree” or “strongly agree”)

Outcome Variables

- Optimal overall, sexual, physical, or mental health (“good” or “very good”)
- Self-reported viral suppression (report of “undetectable” or “suppressed”)
- Treatment satisfaction (“satisfied” or “very satisfied” with current medication)
- Optimal adherence (report of having missed ART for ≥5 times in the past month for any reason classified as suboptimal adherence)

Analyses

- Overall and stratified prevalence estimates computed
- Chi squared tests used for comparisons at $P < 0.05$
- HIV-related knowledge, attitudes, and behaviors compared between those informed vs not informed of “U=U”

Results

- Of the study population, 71% were aged <50 years, 68% were men, and 23% were recently diagnosed during 2017 to 2019 (Figure 1)

Figure 1. Characteristics of the Study Population (N=2389)

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%
Sexual orientation	Heterosexual (984)	41%
	Homosexual (1094)	46%
	Other sexual orientation (311)	13%
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%

- Overall, 66% were informed of “U=U” by their HCP
- Some of the highest prevalence estimates for receipt of “U=U” information from an HCP were seen among men who have sex with men (MSM; 71%; Figure 2) and PLHIV in Switzerland (87%; Figure 3); notably, individuals who “preferred not to say” their sexual identity reported a prevalence of 85%
- There were no significant differences by age, year of diagnosis, or metropolitan status

Figure 2. Percentage of PLHIV Told of U=U by Their HCP, by Selected Characteristics (N=2389)

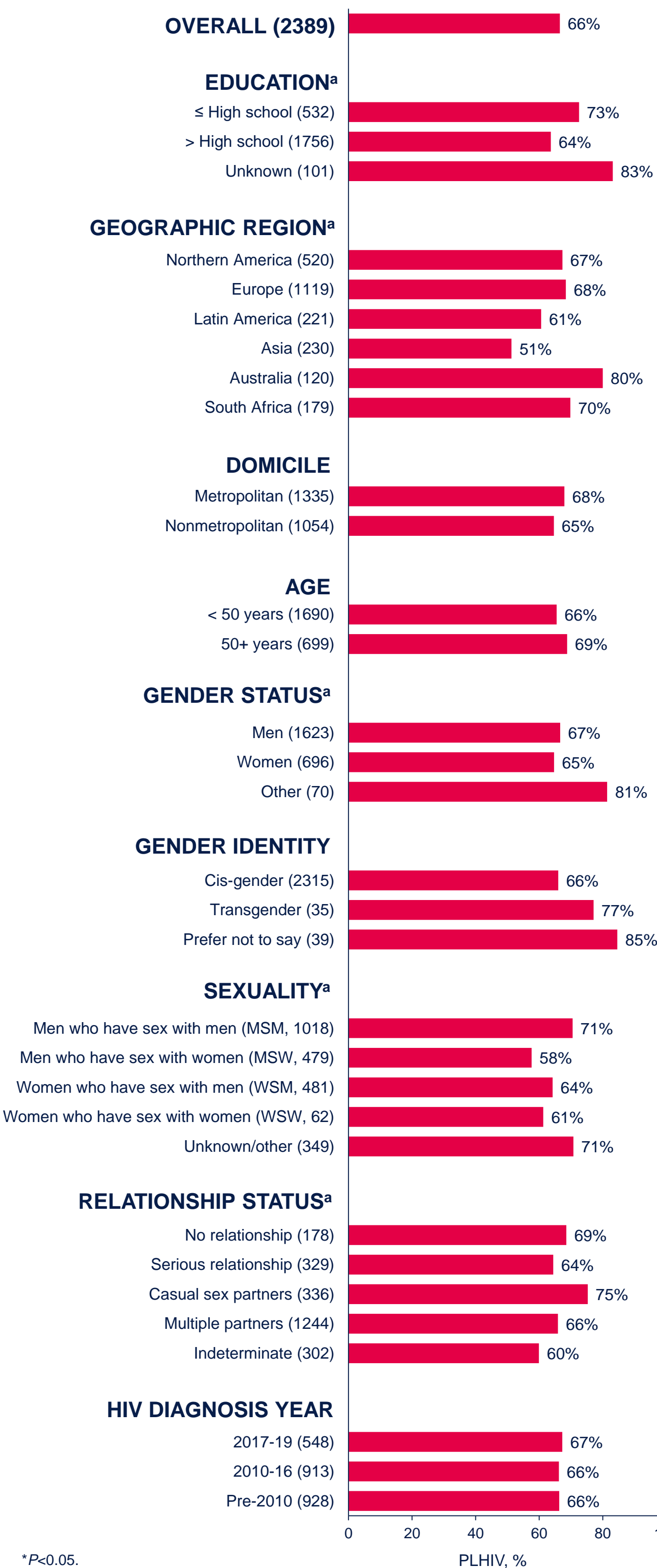
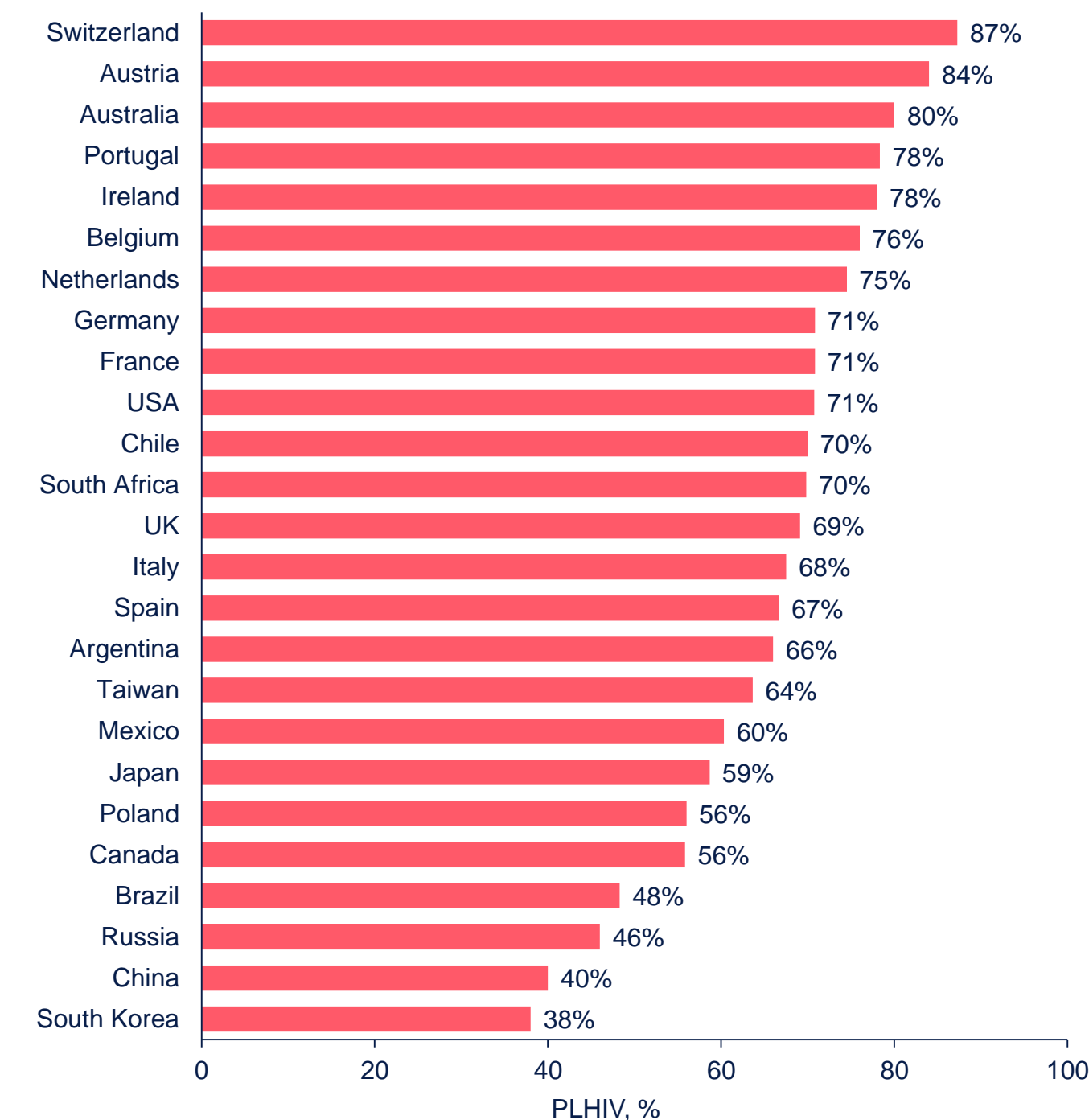
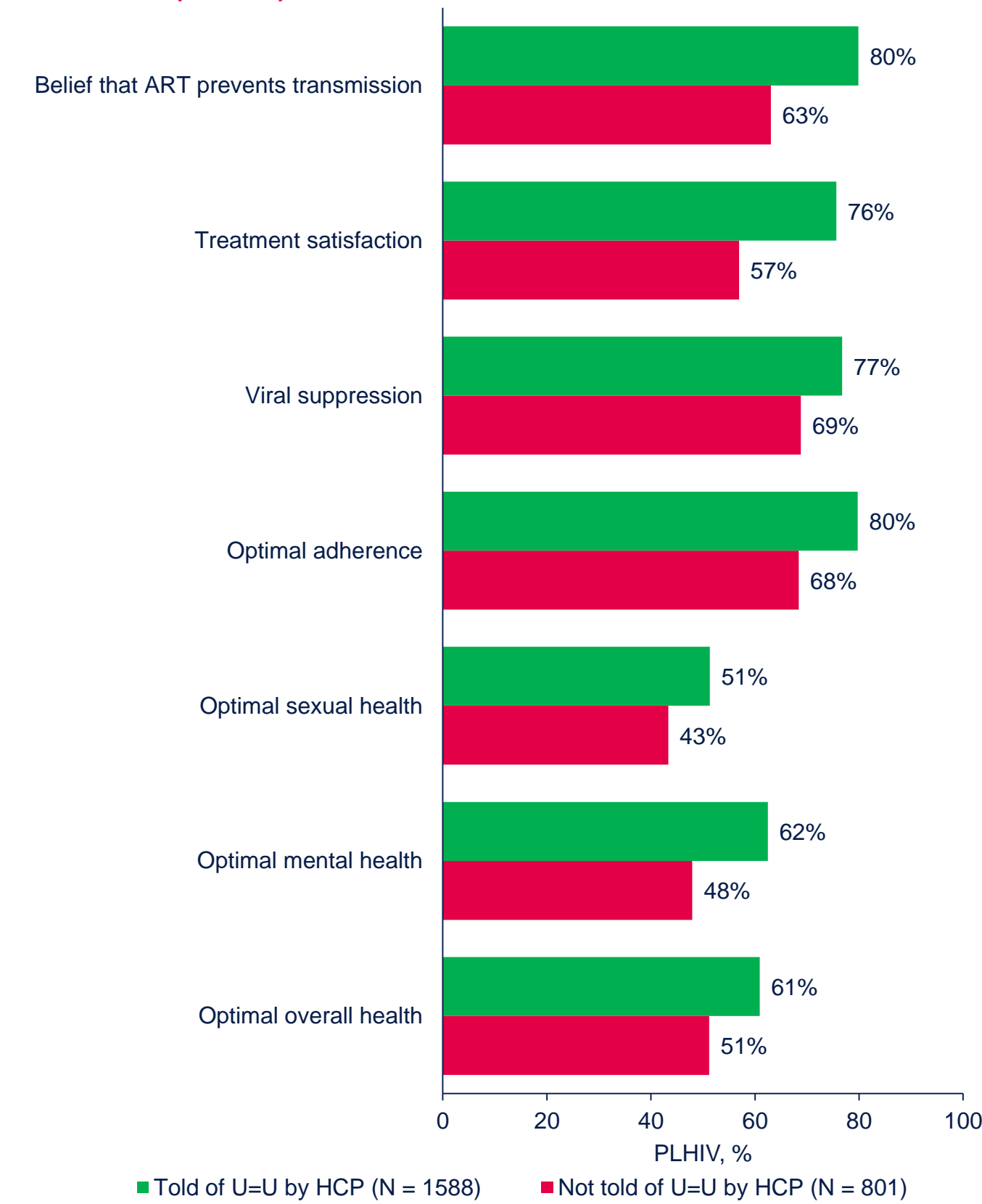


Figure 3. Percentage of PLHIV Told of U=U by Their HCP, by Country



- By country, the percentage told of U=U by their HCP ranged from 38% in South Korea to 87% in Switzerland

Figure 4. Relationship Between Exposure to U=U Information and Health Outcomes (N=2389)



- PLHIV not aware of U=U consistently had the poorest outcomes, whereas those told by their HCP of U=U had more favorable outcomes

Summary of Findings

- Overall, 66% were informed of “U=U” by their HCP
- Those informed (n=1588) were significantly more likely than those not informed (n=801) of reporting (all $P < 0.001$; Figure 4):
 - Awareness that antiretrovirals prevent transmission (80% vs 63%)
 - Treatment satisfaction (76% vs 57%)
 - Optimal adherence (80% vs 68%)
 - Self-reported virologic control (77% vs 69%)
 - Optimal overall health (61% vs 51%)
 - Optimal mental health (62% vs 48%)
 - Optimal sexual health (51% vs 43%)
- By gender/sexual orientation, percentage informed of U=U by their HCP was 71%, 65%, and 58% among MSM, women, and heterosexual males respectively
- Statistically significant differences by gender/sexual orientation in receipt of U=U information from an HCP were observed in only 4 of the 25 countries (Germany, Portugal, Taiwan, and the United States)
- Prevalence was highest among women in the United States but highest among MSM in Germany, Portugal, and Taiwan
 - Germany (84%, 56%, and 65% for MSM, men who have sex with women [MSW], and women, respectively; $P = 0.035$)
 - Portugal (83%, 33%, and 73% for MSM, MSW, and women, respectively; $P = 0.030$)
 - Taiwan (77%, 60%, and 23% for MSM, MSW, and women respectively; $P = 0.003$)
 - United States (72%, 53%, and 90% for MSM, MSW, and women, respectively; $P < 0.001$)

Conclusions

- PLHIV that reported being informed of U=U by their HCP had more favorable health outcomes than those not informed
- Switzerland was the first country to endorse the message that PLHIV who were virally undetectable could not transmit disease in 2008⁶
 - This may explain why PLHIV from Switzerland reported the highest percentage of those informed of U=U by their HCP
- One-third of all PLHIV were not told about U=U by their HCPs
 - In particular, heterosexual males and PLHIV in Asia were by far the least likely to be given this information
- The association between U=U discussion and health outcomes suggests opportunities exist to improve the healthcare experience of PLHIV
- As gatekeepers of essential information, intensified efforts by HCPs to better engage patients can benefit public health
 - HCPs should not rely on external sources to educate patients on crucial issues such as U=U
- Patient-HCP U=U discussions should be considered in care guidelines to help improve the quality of life of PLHIV

Acknowledgments: Authors would like to thank all the PLHIV who participated in this study. Data analyses provided by Zatum LLC. This study was funded by ViiV Healthcare. Editorial assistance and graphic design support for this poster were provided under the direction of the authors by MedThink SciCom and funded by ViiV Healthcare.

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