Knowledge of HIV status decreases depressive symptoms among female sex workers

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Background

- The effect of knowledge of HIV status on depressive symptoms is not well understood.
- The potential for knowledge of HIV-positive status to result in depressive symptoms is often cited as a barrier to scaling HIV self-testing, which moves testing outside the health system, away from the support of trained counselors.
- Female sex workers (FSWs) are at risk of both increased HIV infection and depression; HIV self-testing has been proven to increase frequent testing among FSWs, but the effect of knowledge of HIV status (often acquired through testing) on FSWs' symptoms of depression remains unclear.

Objective

To understand the effect of knowledge of HIV status on depression among two diverse populations of FSWs in Uganda and Zambia to determine the need for interventions that support HIV testing programs.

Methods

Participant cohorts

- We used longitudinal data from two FSW cohorts: 1) in Kampala, Uganda (n=960), and 2) in three Zambian transit towns (n=963).
- The cohorts were formed as part of two cluster-randomized HIV self-testing trials (Ortblad *et al, PLoS Med* 2017; Chanda *et al, PLoS Med* 2017).
- Eligibility: (1) ≥18 years of age, (2) exchanged sex for money or goods in past month, and (3) HIV status unknown or HIV-negative at last test (>3 mos prior)
- Participants in the cohorts had at least two opportunities to test for HIV over the study, using HIV self-tests and free standard HIV testing services.

Data

- Participants completed quantitative surveys at baseline and four months
- Knowledge of HIV status: Participants were asked to mark on a 10-rung ladder scale the likelihood they were currently living with HIV. Knowledge of HIV status was categorized as: HIV negative (rungs 1-3), unknown (rungs 4-7) or HIV positive (rungs 8-10)
- Depressive symptoms: We used the PHQ-9 depression scale (0-27 points) to measure the severity of participants' depressive symptoms (continuous score) and prevalence of likely depression (scores ≥10 indicate clinical depression)

Statistical analysis

- We used linear regression models with individual-level fixed effects to measure the effect of knowledge of HIV status on FSWs' depressive symptoms. We controlled for round of data collection and calendar month, and included peer educator random effects.
- Stata 13.1 (StataCorp, College Station, TX) was used for all analyses.

Results

Table 1. Characteristics of FSW cohorts at baseline

Characteristic	Uganda, n=960	Zambia, n=963
Age (median, IQR)	28 (24 to 32)	25 (21 to 30)
Can read/write	825 (86%)	722 (75%)
No. clients per average night (median, IQR)	5 (4 to 7)	4 (3 to 5)
Inconsistent condom use with clients	388 (41%)	696 (74%)
Severity of depressive symptoms, 0-27 PHQ-9 scale (mean, SD)	9.0 (5.5)	10.1 (6.4)
Prevalence of likely depression (≥10 PHQ-9 points)	416 (43%)	441 (46%)
Tested for HIV since the start of the study	812 (94%)	859 (96%)

Figure 1. FSWs' knowledge of HIV status at baseline and four months. *Gray lines between data collection time points show FSWs' changes in response categories over time.*

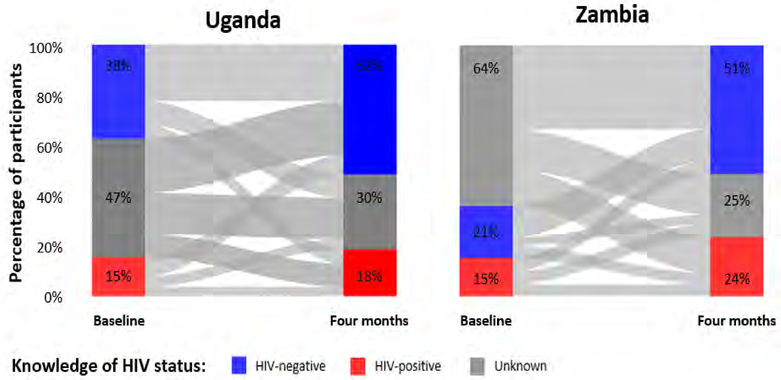
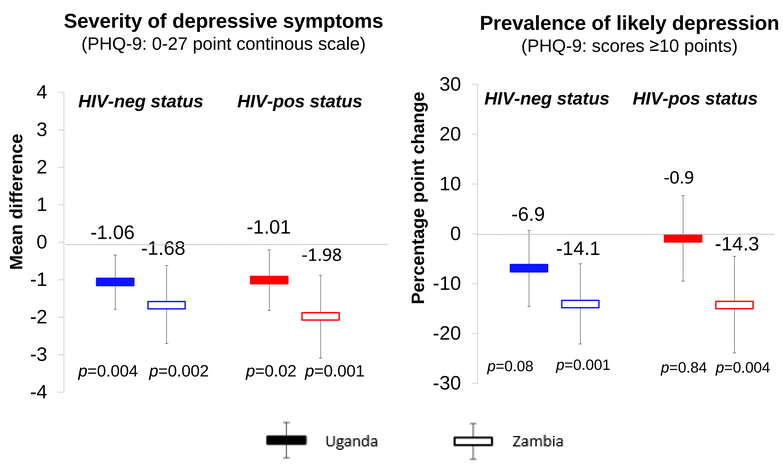


Figure 2. The effect of FSWs' knowledge of HIV status on depression



Discussion

- Our finding that knowledge of HIV-negative status reduces depressive symptoms is as expected based on theories of human emotion in the existing literature.
- In contrast, our finding that knowledge of HIV-positive status reduces depressive symptoms is contrary to the hypothesis that fear of the physical and social consequences of HIV induces depressive thoughts, but consistent with the psychology literature around the stress of uncertainty and the benefits of knowledge (even if it is unwanted).
- Knowledge of HIV-positive status many reduce depressive symptoms among FSWs for a variety of reasons including: 1) reduced uncertainty, which is stressful, 2) empowerment, as a consequence of certain HIV status knowledge, and 3) accessible HIV treatment, which reduces HIV-associated morbidity and mortality.
- To maintain an updated knowledge of HIV status and gain the mental health benefits associated with this, FSWs need to test for HIV frequently; novel routine HIV testing approaches are needed to achieve this, such as HIV self-testing and community-based or work-based HIV testing.

Conclusions

- Knowledge of HIV status, be it positive or negative, significantly decreased depressive symptoms in two diverse populations of FSWs.
- This finding is consistent with literature suggesting that certainty about a health condition is less stressful than uncertainty, even if the results are unwanted.
- Expansion of HIV testing programs, including integration of new technologies like HIV self-testing, could have mental health benefits for FSWs.

Host organizations

1. University of Washington, Seattle, USA
2. International Research Consortium, Kampala, Uganda
3. John Snow Inc., Lusaka, Zambia
4. Uganda Health Marketing Group, Kampala, Uganda
5. Harvard T.H. Chan School of Public Health, Boston, USA
6. University of California San Francisco, San Francisco, USA
7. Heidelberg University, Heidelberg, Germany
8. Africa Health Research Institute, Durban, South Africa

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