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Worsened health and increased sexual risk among internally displaced Ukrainian sex workers post-Russian invasion

EPIDEMICS 10

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BACKGROUND

FEBRUARY 2022: Russia launches a full-scale invasion of Ukraine, leaving millions internally displaced and at increased risk of infectious diseases, including sexually transmitted infections.

Sex workers who have been displaced face even greater challenges.

OBJECTIVE

We used ordinal and logistic regression approaches to compare the extent of these changes among three groups of sex workers:

- Those who reported being internally displaced after the invasion
- Those who had relocated since the invasion, but who did not report being displaced
- Sex workers who had neither relocated nor been displaced

METHODS

Peer-driven intervention (PDI) was implemented in Kyiv, Kharkiv, Kryvyi Rih, and Odesa, Ukraine, between **September 2023 to January 2024**.

PDI used a modification of respondent-driven sampling to interview SWs, test for HIV, and engage in HIV prevention services (**n=2,098**).

Interviews asked about sexual and injection drug-use behaviors, health, and access to care at the time of the survey, and changes post-2022.

We applied **logistic regression analyses** to compare consistent condom use with vaginal or anal sex and riskier sexual behavior between the three groups and applied **ordinal regression analyses** to compare the degree of change in physical health, mental health, and feeling of belonging to the Ukrainian people.

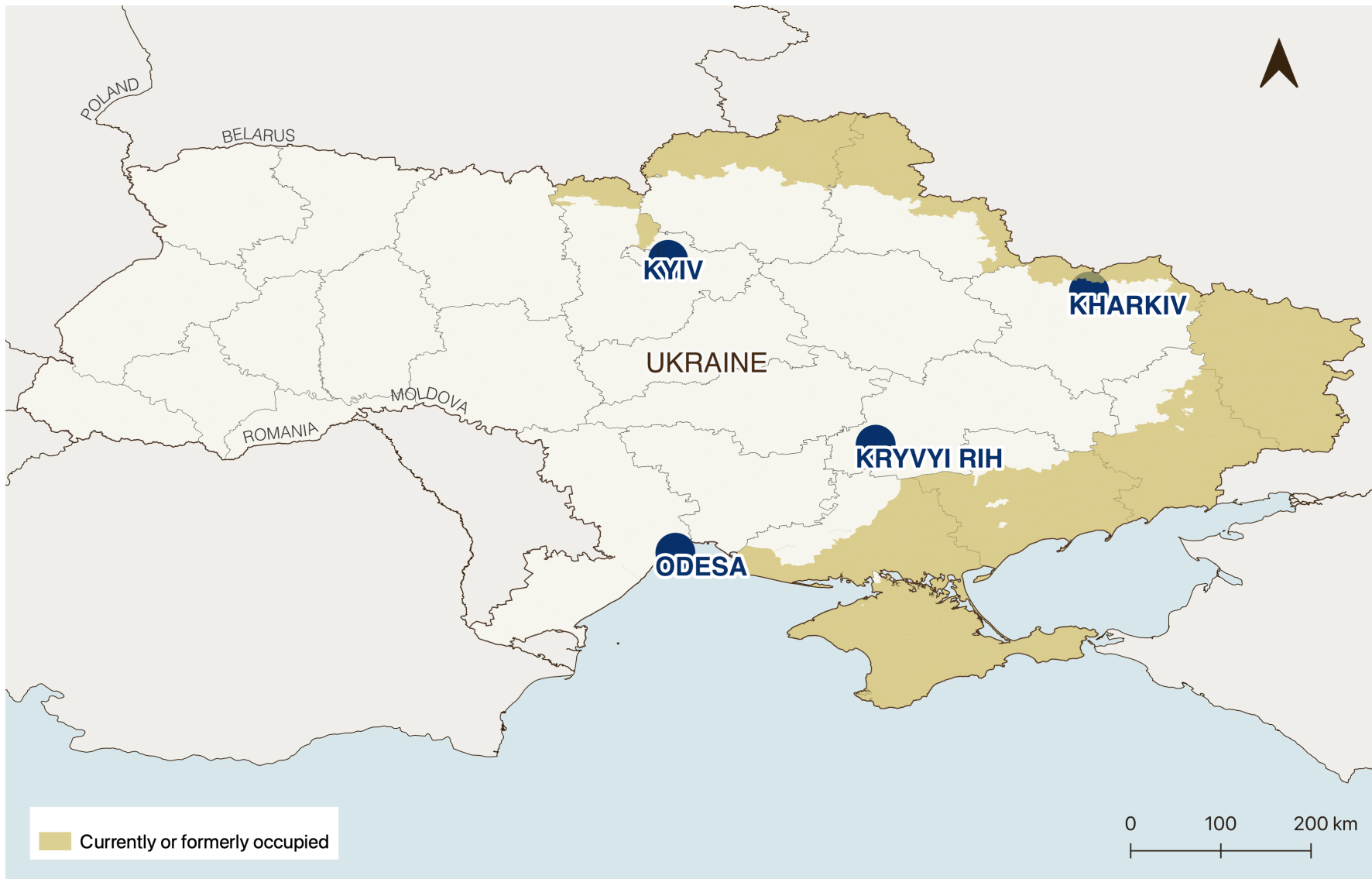


Figure 1: Map of the locations of the four study sites and their proximity to currently and formerly occupied territories

RESULTS

Displaced participants had **43%** decreased odds of inconsistent condom use, but **83%** increased odds of reporting that their sexual behavior had become riskier since the invasion, compared to those who did not relocate

Participants who sought clients through other sex workers had **2.05** times greater odds of inconsistent condom use, but **31%** decreased odds of reporting their behavior becoming riskier, compared those who sought clients through other clients

Figure 2: Forest plot for odds of inconsistent condom use in the last 30 days

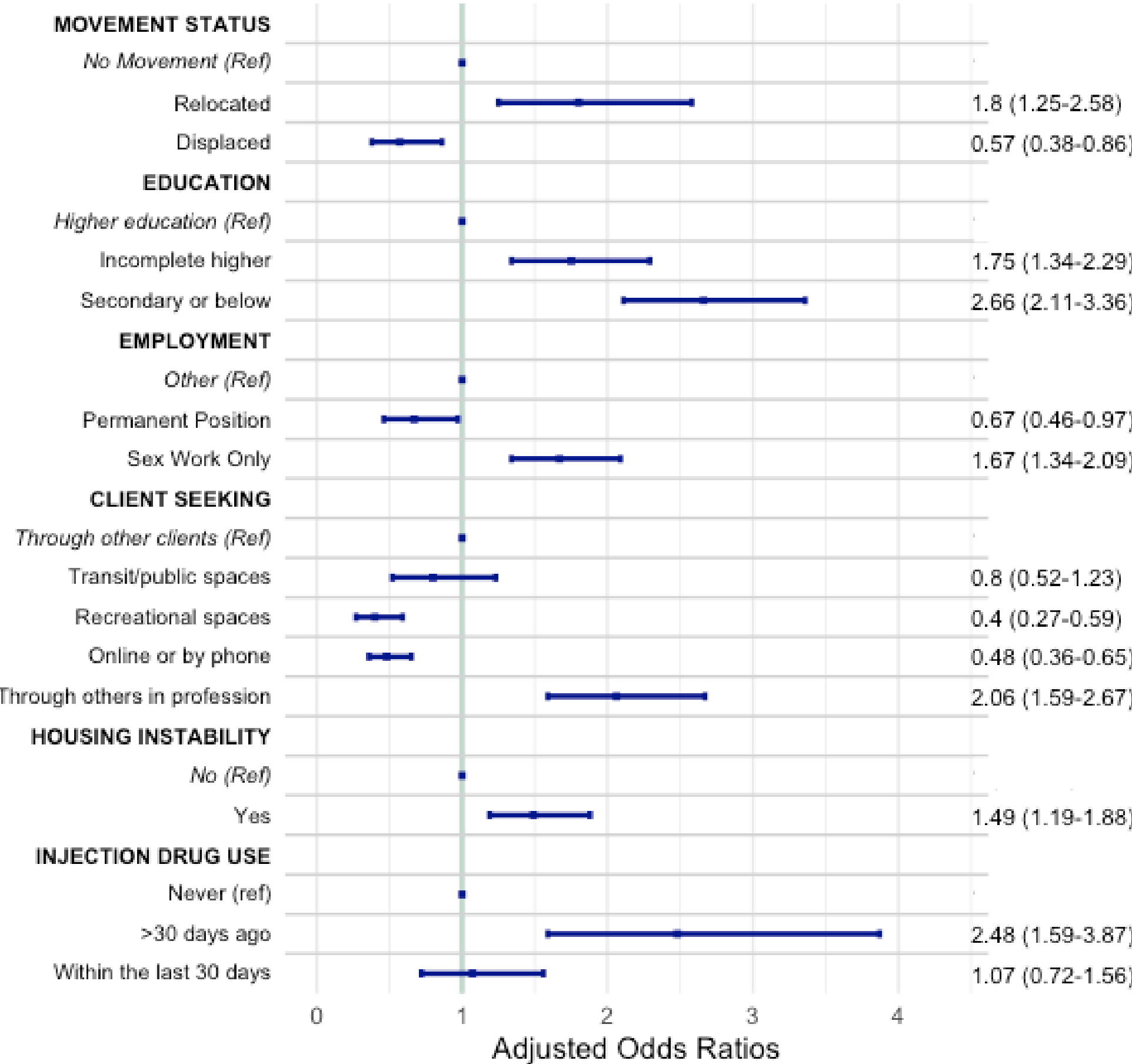
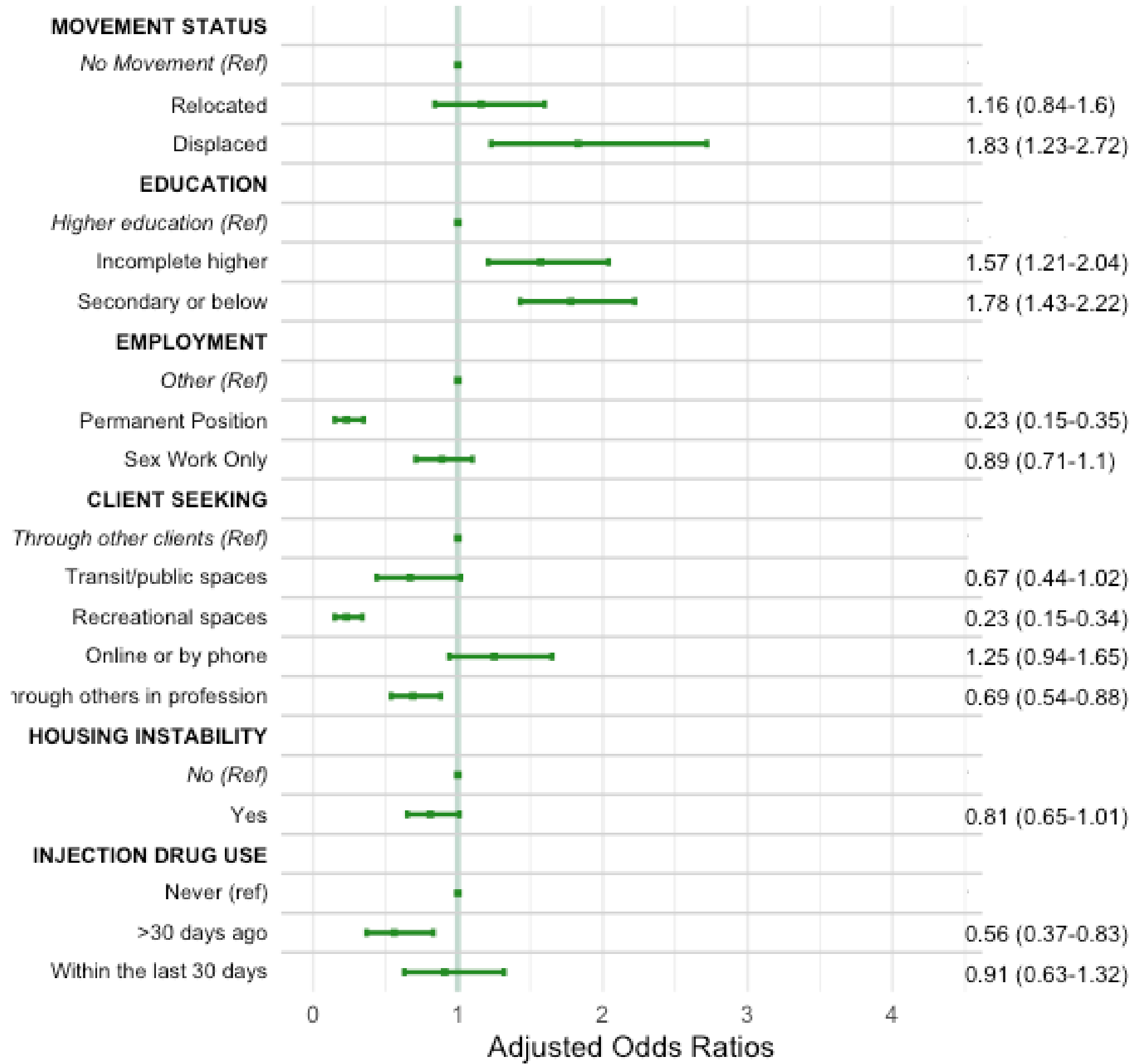


Figure 3: Forest plot for odds of reporting sexual behavior becoming riskier since the invasion



For those who were displaced, the odds of their **physical health** deteriorating since the invasion was **2.42** times greater than for those who did not move

For those who were displaced, the odds of their **mental health** deteriorating since the invasion was **2.31** times greater than for those who did not move

For those who were displaced, the odds of **belongingness** improving since the invasion was **76%** greater than for those who did not move

Table 1: Ordinal regression results predicting post-invasion changes for 2,098 sex workers as a function of post-invasion movement status. Each outcome variable represents a separate regression.

Outcome Variable	Movement Status	Adjusted Odds Ratio ^a	P-value
Deterioration of Physical Health ^b	No movement	1.00 (ref)	-
	Relocated	1.01 (0.72, 1.39)	0.963
	Displaced	2.42 (1.65, 3.56)	<0.001
Deterioration of Mental Health ^b	No movement	1.00 (ref)	-
	Relocated	0.78 (0.57, 1.06)	0.111
	Displaced	2.31 (1.54, 3.46)	<0.001
Feeling of Belonging to the Ukrainian People ^c	No movement	1.00 (ref)	-
	Relocated	1.06 (0.78, 1.44)	0.712
	Displaced	1.76 (1.23, 2.52)	0.002

^a Adjusted for participants' age, educational level, employment status, housing instability, history of injection drug use, and venue for seeking clients

^b This ordinal outcome has three levels: Improved, no change, and deteriorated

^c This ordinal outcome has five levels: Significantly deteriorated, somewhat deteriorated, no change, somewhat improved, and significantly improved

DISCUSSION

Displacement was associated with more consistent condom use in the last 30 days, but greater perception of increased sexual risk.

Displaced individuals were more likely to report worsened physical and mental health since the onset of the invasion, compared to those who did not relocate.

Participants who were displaced after the 2022 invasion were more likely to have improved feeling of belonging to the Ukrainian people, compared to those who did not relocate.

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