

Health Services Use and HIV Prevalence Among Migrant and National Female Sex Workers in Portugal: Are We Providing the Services Needed?

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Abstract This cross-sectional bio-behavioral survey conducted with 853 female sex workers (FSW) aimed to examine differences in use of HIV health services, testing and prevalence among migrant and national FSW. A quarter of undocumented FSW had never used National Health Service (NHS) and 15 % never tested for HIV, significantly more than nationals ($p < 0.001$ and $p = 0.024$, respectively). HIV infection was self-reported by 11.9 % of nationals, 1.8 % of documented and 0.8 % of undocumented migrants ($p < 0.001$). The HIV rapid test was reactive in 13.6 % of undocumented, 8.0 % of nationals and 2.3 % of documented. A higher proportion of migrants were unaware of their positive serostatus compared to nationals. Ever had HIV testing was less likely among undocumented, who never used the NHS and who didn't know where to go if suspected being HIV-infected. Promoting early diagnosis with linkage to care among migrant FSW should be supported, while developing health services better tailored to their needs.

Resumen Una encuesta transversal biocomportamental fue realizada con una muestra de 853 trabajadoras sexuales (TS) con el objetivo de examinar diferencias en el uso de servicios de salud del VIH, test y prevalencia entre TS migrantes y nacionales. Un cuarto de las TS indocumentadas nunca utilizaron el Servicio Nacional de Salud (SNS) y el 15 % nunca fueron testadas respecto al VIH,

porcentajes significativamente superiores a las observadas para las nacionales ($p < 0.001$ y $p = 0.024$, respectivamente). La infección por VIH fue auto reportada por 11.9 % de las nacionales, 1.8 % de las migrantes documentadas y 0.8 % de las indocumentadas ($p < 0.001$). El test rápido del VIH fue reactivo para un 13.6 % de las indocumentadas, 8.0 % de las nacionales y 2.3 % de las documentadas. Una proporción mayor de migrantes desconocía su serostatus positivo en comparación con las nacionales. El test del VIH fue menos frecuente entre las indocumentadas, quien nunca utilizó el SNS y quien no sabía dónde recurrir si sospechaba estar infectada por el VIH. Promover un diagnóstico precoz en conexión con los cuidados en TS migrantes debe ser respaldado mientras se desarrollan servicios de salud mejor adaptados a sus necesidades.

Keywords HIV infection · HIV testing · Health services use · Migrants · Sex workers

Introduction

Despite global efforts to fight HIV, the burden of infection remains disproportionately high among key populations [1–4]. Disparate, yet high levels of HIV infection among female sex workers (FSW) have been reported worldwide [1]. In Europe, HIV prevalence among sex workers is >1 % in 22 countries and >5 % in six of these countries [3]. Portugal has the second highest HIV prevalence in the European Union (EU) and a HIV prevalence of 7.9 % has been found in FSW [3].

The sex industry within the EU has constantly growing, involving an increasing number of new individuals, especially migrants [5]. Data indicate that in European

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countries the proportion of migrants among sex workers ranges between 41 and 90 % [5]. Migrant FSW have been recognized to be at increased risk of HIV [6, 7]. Factors associated with sex work (as high number of sexual partners, exposure to violence, inconsistent condom use) intersect with migration-related factors (irregular status, social exclusion, lack of knowledge on health rights and services), which pose a greater risk to this sub-population [8]. Simultaneously, FSW experience barriers to accessing HIV health services [6, 8]. Inequities in health services use between migrants and nationals have been described elsewhere, with migrants being more likely to report low rates of HIV testing and therefore high rates of undiagnosed infection [9–11]. A disincentive to HIV testing and barrier to HIV health services among migrant FSW is the ‘triple stigma’ associated with migrant status (particularly undocumented), disclosure of sex-work activity and a possible HIV-positive result [9, 12].

Despite migrant FSW high vulnerability, data on HIV infection and use of HIV health services in this population is almost non-existent [13]. This study aims to assess differences in the use of HIV health services and HIV prevalence among national and migrant (documented and undocumented) FSW in Portugal.

Methods

This cross-sectional bio-behavioral study was conducted using a participatory research approach in which governmental and non-governmental organizations working with SW actively participated in all the stages of the project [14].

Detailed methods are described elsewhere [15]. Briefly, to estimate the sample size that would be large enough for detailed analyses, we assumed a hypothetical worst case prevalence of 50 %, at 95 % confidence level with precision of 3.5 %; it was estimated that 784 SW would be required. Participants were recruited in previously mapped sex-work locations (including outdoor and indoor sex-work settings) and community-based organizations in large urban centers. Of 1013 FSW invited to participate in the study, conducted in 2011, 853 FSW accepted. Participants completed an anonymous interviewer-administered structured questionnaire on sociodemographics, sex-work setting, utilization of health services, HIV testing and reported HIV infection. Simultaneously, over a 1-month period, a HIV rapid test was offered to every respondent in sex-work venues in the highest populated urban center using a mobile unit. Logistic constraints limited the provision of HIV rapid tests in other areas of the country and for the whole study period. Of the 229 FSW who were offered a rapid test, 176 accepted. No differences were found

between participants and refusals (in both the questionnaire and the rapid test) on age and education [15]. A numerical code was used to link behavioral and biological information, maintaining participants’ anonymity. Informed consent was obtained from each participant. The study was approved by the Ethics Committee for Health of the North Regional Health Administration.

Data Analysis

Individual characteristics, health services use, HIV testing and reported HIV infection across nationals, documented and undocumented migrants were compared using Pearson’s Chi-Square test/Fisher’s exact test for categorical variables, and ANOVA test for continuous variables. A descriptive analysis of the HIV rapid test result by the three groups was performed. We then used bivariate and multivariate logistic regression analysis to examine factors associated with having ever been tested for HIV and knowing the result. Sociodemographic and health services use-related variables found to be significantly associated with ‘Ever been tested for HIV and knowing the result’ in the bivariate analysis or in similar studies were entered into the multivariate logistic regression model. A $p < 0.05$ was set to retain variables in the model. The Hosmer–Lemeshow goodness-of-fit test was used to assess the model fit. Statistical data analysis was performed using SPSS 22.0.

Results

Sociodemographic Characteristics

Overall, 853 FSW completed the questionnaire: 207 (24.3 %) documented migrants, 169 (19.8 %) undocumented migrants and 477 (55.9 %) nationals (Table 1). Of the migrant respondents, 62.7 % were Latin-American, 26.1 % were African and 11.2 % were European. Migrant FSW were significantly younger ($F = 51.07$, $p < 0.001$), had higher education ($\chi^2 = 74.83$, $p < 0.001$), higher monthly income ($\chi^2 = 33.15$, $p < 0.001$) and more frequently reported indoor sex-work ($\chi^2 = 108.05$, $p < 0.001$) than nationals.

Health Services Use and HIV Testing

Undocumented FSW reported more often having never used National Health Service (NHS) ($\chi^2 = 112.74$, $p < 0.001$), not knowing that HIV testing in Portugal is free of charge and confidential ($\chi^2 = 9.56$, $p = 0.008$) and where to go if they suspected being HIV-infected ($\chi^2 = 15.51$, $p < 0.001$) (Table 1).

Table 1 Sociodemographics, sex-work characteristics, health services use and HIV testing by migration status

	Total	National	Documented migrant	Undocumented migrant	Test statistic, p value
Total, n (%)	853 (100)	477 (55.9)	207 (24.3)	169 (19.8)	
Sociodemographic and sex-work characteristics					
Age (N = 853), Mean (SD)	35.9 (10.7)	39.0 (11.2)	32.7 (8.6)	31.1 (8.5)	F (2–850) = 51.07, p < 0.001 ^a
Education (N = 841), n (%)					
Elementary/middle school	520 (61.8)	351 (74.7)	95 (46.8)	74 (44.0)	X ² (2) = 74.83, p < 0.001 ^a
≥High school	321 (38.2)	119 (25.3)	108 (53.2)	94 (56.0)	
Professional situation (N = 724), n (%)					
Employed	163 (22.5)	87 (21.0)	43 (24.6)	33 (24.6)	X ² (2) = 1.34, p = 0.512
Non employed	561 (77.5)	328 (79.0)	132 (75.4)	101 (75.4)	
Monthly income (N = 818), n (%)					
≤1000 €	512 (62.6)	328 (71.1)	101 (52.3)	83 (50.6)	X ² (2) = 33.15, p < 0.001 ^a
>1000 €	306 (37.4)	133 (28.9)	92 (47.7)	81 (49.4)	
Sex-work setting (N = 802), n (%)					
Outdoor	460 (57.4)	321 (72.1)	83 (42.1)	56 (35.0)	X ² (4) = 108.05, p < 0.001 ^a
Indoor	301 (37.5)	98 (22.0)	103 (52.3)	100 (62.5)	
Both	41 (5.1)	26 (5.8)	11 (5.6)	4 (2.5)	
Health services use and HIV testing					
Ever use of the NHS (N = 844), n (%)					
Yes	776 (91.9)	473 (100)	177 (87.2)	126 (75.0)	X ² (2) = 112.74, p < 0.001 ^a
No	68 (8.1)	0 (0.0)	26 (12.8)	42 (25.0)	
Knowing that HIV testing in Portugal is free of charge and confidential (N = 845), n (%)					
Yes	758 (89.7)	436 (92.2)	182 (88.8)	140 (83.8)	X ² (2) = 9.56, p = 0.008 ^a
No	87 (10.3)	37 (7.8)	23 (11.2)	27 (16.2)	
Knowing where to go if suspected being HIV-infected (N = 853), n (%)					
Yes	815 (95.5)	466 (97.7)	196 (94.7)	153 (90.5)	X ² (2) = 15.51, p < 0.001 ^a
No	38 (4.5)	11 (2.3)	11 (5.3)	16 (9.5)	
Received free condoms in the last 12 months (N = 842), n (%)					
Yes	770 (91.4)	440 (93.2)	178 (87.7)	152 (91.0)	X ² (2) = 5.61, p = 0.060
No	72 (8.6)	32 (6.8)	25 (12.3)	15 (9.0)	
Ever had a HIV test (N = 848), n (%)					
Yes	767 (90.4)	439 (92.2)	186 (90.7)	142 (85.0)	X ² (2) = 7.44, p = 0.024 ^a
No	81 (9.6)	37 (7.8)	19 (9.3)	25 (15.0)	
Ever had a HIV test and know the result (N = 853), n (%)					
Yes	678 (79.5)	392 (82.2)	166 (80.2)	120 (71.0)	X ² (2) = 9.64, p = 0.008 ^a
No	175 (20.5)	85 (17.8)	41 (19.8)	49 (29.0)	

SD standard deviation, NHS National Health Service

^a Significant difference at alpha = 0.05

A lower proportion of undocumented FSW reported having been tested and knowing the result (71.0 %) compared to documented (80.2 %) and nationals (82.2 %) ($\chi^2 = 9.64$, $p = 0.008$) (Table 1). The main reasons stated by nationals for never been tested were having no risk behaviors (23.5 vs. 5.9 % of documented migrants and none undocumented migrant) and being afraid of the test result (20.6 vs. 5.9 % of documented migrants and 4.2 % of undocumented migrants), while the main reason for

migrants was not knowing where to be tested (29.4 % of documented migrants and 29.2 % of undocumented migrants vs. 2.9 % of nationals) (Fisher's exact test(12) = 24.95, $p = 0.003$) (data not shown in table). Further analysis about where the last HIV test was done showed that the hospital was more frequently reported by migrant FSW than nationals (59.3 vs. 42.9 %), while the primary healthcare service and the voluntary counselling and testing (VCT) center were more often reported by national

FSW than migrants (primary healthcare service: 31.2 vs. 18.0 %; VCT center: 26.0 vs. 22.7 %, respectively) ($\chi^2(2) = 13.33$, $p = 0.001$) (data not shown in table).

HIV Infection (Self-Reported and Rapid Test)

Of those ever tested for HIV, 11.9 % [8.6–15.1] ($n = 46$) of nationals, 1.8 % [0.0–3.9] ($n = 3$) of documented migrants and 0.8 % [0.0–2.5] ($n = 1$) of undocumented migrants reported being HIV positive ($\chi^2(2) = 26.20$, $p < 0.001$) (data not shown in table).

Of the 176 FSW who accepted the HIV rapid test (88 nationals, 44 documented and 44 undocumented), 13.6 % [3.0–24.0] ($n = 6$) of undocumented migrants, 8.0 % [2.0–14.0] ($n = 7$) of nationals and 2.3 % [1.0–7.0] ($n = 1$) of documented migrants were reactive. Of the 14 HIV-positives, all undocumented migrants ($n = 6$), all documented ($n = 1$) and four nationals had self-reported being HIV negative or not knowing their serostatus. Among these 11 HIV-positives unaware of their serostatus, four undocumented migrants, one documented and two nationals had never tested. Also, all the unaware HIV-positives who reported having never used the NHS ($n = 2$), not knowing that HIV testing in Portugal is free of charge and confidential ($n = 4$) and not knowing where to go if suspected being HIV-infected ($n = 1$) were undocumented migrants.

Factors Associated with HIV Testing

The logistic regression analysis showed that having been tested for HIV and knowing the result was less likely among undocumented migrant FSW [OR 0.60, 95 % CI 0.36–0.99] compared to nationals (Table 2). Also, HIV testing was less likely among those who never used the NHS [OR 0.35, 95 % CI 0.18–0.72] and those who didn't know where to go if suspected being HIV-infected [OR 0.33, 95 % CI 0.15–0.74].

Discussion

This study shows inequities in health services use, confirming that migrant FSW underuse HIV health services compared to their native counterparts, as found in other research [7, 16, 17]. Across migration status groups, undocumented migrants reported the lowest rates of NHS use and HIV testing (15 % of undocumented migrant FSW never tested), as well as lack of knowledge on health services available.

We confirm high levels of HIV infection among FSW, consistent with other European studies that show highly disparate levels of infection among FSW populations—e.g.

12.9 % in Ukraine, 8.1 % in Estonia and from 2 to 5 % in Spain and Italy [18–23]. Also, a finding of concern is the unawareness of HIV serostatus found among migrant groups. It is worth highlighting that, despite the relatively low numbers, an extremely high proportion of undocumented migrants had a reactive result to the rapid test (reaching a HIV prevalence rate of 13.6 %), while self-reporting much lower HIV infection (0.8 %). This finding suggests that these migrants still face barriers that limit access to HIV testing. We can speculate that migrants fear potential implications of being undocumented and HIV-positive, which may turn them reluctant to do the test, being afraid of having a positive result and jeopardizing to have that information disclosed to others [9–12]. Studies have suggested that many undocumented migrants fear deportation based on an HIV diagnosis, which hinders them to use health services and uptake the test [9]. Additionally, in a context of persistent social stigma towards HIV infection, the concern with personal and social consequences of a positive result can also act as a barrier [9]. In Portugal HIV testing can be done for free, anonymously and confidentially, and in case of a positive result individuals are entitled to free treatment and care regardless their legal status [24]. Therefore, future research aimed to explore and disentangle the barriers and its associated factors to HIV testing among immigrant groups, especially those undocumented, is needed.

Other results of our study reinforce that migrant FSW do not take advantage of available HIV health services. Never been tested for HIV was significantly associated with health services access-related factors such as undocumented status and lack of knowledge regarding availability of and entitlement to HIV health services. Sociodemographic factors commonly associated with HIV testing such as age and current work situation were not significant. A higher proportion of migrant FSW were tested for HIV in hospitals, which are primarily used for acute and emergency healthcare and where HIV screening, being non-targeted, is integrated into routine procedures, while nationals more frequently had a test in VCT centers and primary healthcare services, where HIV testing is generally patient-driven. Also, migrant FSW, mostly undocumented, lack knowledge of the HIV health services: 9.5 % of undocumented migrants didn't know where to go if they suspected being HIV-infected, 16.2 % didn't know that HIV testing in Portugal is free and confidential, and of those who were never tested, 29 % justified not knowing where to test, in contrast with nationals.

We must highlight that these findings were found in a context where migrants formally have equal access to healthcare as do Portuguese natives, and healthcare must be provided to every person irrespective of nationality, economic means or legal status. Further efforts beyond legal

Table 2 Factors associated with having ever been tested for HIV and knowing the result

	Crude OR (95% CI)	p value	Adjusted OR ^a (95% CI)	p value
Age	1.01 (0.99–1.02)	0.585	0.99 (0.98–1.01)	0.482
Migration status				
National	1		1	
Documented migrant	0.88 (0.58–1.33)	0.538	1.04 (0.64–1.69)	0.886
Undocumented migrant	0.53 (0.35–0.80)	0.002 ^b	0.60 (0.36–0.99)	0.047 ^b
Professional situation				
Employed	1		1	
Non employed	0.86 (0.56–1.34)	0.512	0.85 (0.54–1.35)	0.499
Ever use of the NHS				
Yes	1		1	
No	0.46 (0.27–0.79)	0.004 ^b	0.35 (0.18–0.72)	0.004 ^b
Knowing where to go if suspected being HIV-infected				
Yes	1		1	
No	0.42 (0.21–0.83)	0.013 ^b	0.33 (0.15–0.74)	0.007 ^b
Hosmer-Lemeshow goodness-of-fit, χ^2 (df), p value			3.2 (8), 0.919	

OR odds ratio, CI confidence interval, NHS National Health Service

^a Adjusted for all the variables listed

^b Significant difference at alpha = 0.05

enforcement of health rights are required to improve the use of HIV health services, increase the uptake of HIV testing and reduce the proportion of undiagnosed infection among migrant FSW. This is particularly troubling given that HIV early diagnosis is essential to promote the long-term health of people with HIV and can help prevent onward HIV transmission [25]. Our results reinforce the potential of the involvement of community-based partners in HIV testing initiatives. Additionally, involving cultural mediators and peer educators in outreach prevention initiatives would be valuable as they have the ability to access FSW who frequently are out of reach of formal healthcare services. They have trust relations with those communities and hold exclusive knowledge of their contexts, thus they can play a key role in increasing awareness of HIV infection, promoting HIV testing and improving migrants' health literacy on services available and where to do the HIV test [25].

Limitations of this study must be acknowledged. The sampling approach used due to the impossibility of obtaining a probabilistic sample of FSW [26] may have led to selection bias. This together with the high mobility of FSW implies that it is not possible to determine the representativeness of the sample and thus the generalizability of the results. Nevertheless, with the collaboration of the community partners we were able to reach and approach participants in different sex-work contexts, as outdoor and indoor sex-work settings, which allowed achieving a large

and heterogeneous sample of FSW. Self-reporting information on HIV infection may have been affected by possible reporting bias; nevertheless, the data obtained make us confident of the validity of the responses. In the worst-case scenario, the burden of infection in FSW population is under-represented. Finally, this study was based on a project on SW, so data on the migration process is limited. Additional studies are needed to further understand the influence of migration-related factors on the use of health services and the barriers to HIV testing.

In conclusion, strategies to enhance effective use of HIV health services and thereby increase early diagnosis with linkage to care among migrant FSW should be supported. As our results were obtained in a context conducive of free access to health services, undertaking these strategies in contexts with highly constrained access policies for undocumented migrants is even more relevant. There is a need to overcome barriers faced by migrants and to develop health services better tailored to their needs.

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Compliance with Ethical Standards

Conflict of interest All the authors declare that have no conflict of interest.

Ethical approval All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed consent Informed consent was obtained from all individual participants included in the study.

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