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ORIGINAL ARTICLE

Linked factors to access to sexual health checkups of female sex workers in the metropolitan region of Chile

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Abstract

Objectives To describe and compare the profile of female sex workers (FSWs) that access or do not access sexual health checkups (SHC). The research question was what are the factors linked to access to SHC for FSWs in the metropolitan region (RM) of Chile?

Methods A cross-sectional study was conducted in the RM with FSWs over the age of 18. A sample of 370 FSWs was selected by using the time-location sampling method in closed venues and at street-level locations. A survey was applied, validated, and included clinical-epidemiological, behavioral and socio-demographic variables.

Results 38.6% (n = 140) of FSWs that answered the question never used SHC and 37.6% (n = 84) received checkups in a specialized health center for FSWs. FSWs with no SHC were younger, prone to have more group sex, preferably with occasional or no stable partner, and did not know where to get an HIV test.

Conclusions FSWs have had uncertain access to sexual health controls. FSWs with no SHC and young FSWs presented higher-risk behaviors.

Keywords Sexual health checkups · Female sex workers · Behavioral profile · Chile

Introduction

The scientific community and public opinion have traditionally associated sex work with a higher prevalence of HIV and other sexually transmitted infections (STIs). Due to social stigma, predominant criminalization of sex work globally and vulnerability that female sex workers (FSWs) find themselves (Wahed et al. 2017), limited access to sexual health checkups (SHC) has been reported. Limited access to SHC is perpetuated by other barriers, including discrimination, ill-treatment, inadequate locations and operating hours, among others (Phrasisombath et al. 2012; Jeal and Salisbury 2004; Ghimire and van Teijlingen 2009; Wahed et al. 2017).

Chile has two legal bodies that refer to sex work: criminal code (Ministry of Justice of Chile 1874) and the sanitary code of 1968 (Ministry of Public Health of Chile 1968). While the former does not prohibit sex work, unless it involves minors or human trafficking, the latter prohibits sex work in closed brothels and "casas de tolerancia" (Houses of tolerance). Therefore, sex work in the adult population can be exercised independently, provided it does not affect public order and complies with the regulations established by the authorities.

The sanitary code together with the Rules and Technical Guidelines for STIs by the Ministry of Health of Chile (Ministry of Health of Chile 2007; Ministry of Health of Chile 2008) acts as regulatory agent for SHC. They have made available specialized SHC for sex workers (SWs), which is free of charge and voluntary, must be performed in specialized STI units in each health center of the Public Health Network.

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These units are called *Unidades de Atención y Control de Salud Sexual* (UNACESS) (SHC and attention units) and are integrated as specialized outpatient units that work in coordination with hospitals and primary health care centers (in Chile referred to as APS, *Atención Primaria de Salud*). They provide services to walk-in and referred clients and treat STIs. Checkup appointments are periodical, bimonthly and are based on a biopsychosocial approach, centered on sexual and reproductive health, with special emphasis on prevention, detection and early treatment of STIs. It is worth mentioning that FSWs have access, just like any other woman resident in Chile, to gynecological appointments provided at an APS. However, these appointments focus mainly on reproductive health and do not have the battery of tests or specialized counsel for FSWs.

According to data from the Ministry of Health for the metropolitan region (RM) (Ministry of Health of Chile 2015), during 2007, 2558 SWs attended their checkups. Afterward, the number of SWs fell dramatically, reaching 506 (20 men and 486 women) during the year 2016 (Ministry of Health of Chile 2016). Although there are no formal studies that can account for the decline in SHC use, the probable contributing factors are two: the Ministry of Health passed in 2007 the decree no. 206 (Ministry of Health of Chile 2007), ending mandatory SHC and rescinding the use of public force to accompany FSWs to health centers, and between the years 2003 and 2008, different outreach and awareness programs for HIV and STIs prevention ended. The prohibition of sex work in closed venues, social stigma and social discrimination suffered by FSWs also contributed to the decrease in adherence to SHC (Jeal and Salisbury 2004).

Updated scientific evidence regarding FSW's access to SHC in Chile is scarce. As part of a biobehavioral study performed with FSWs in the RM, the objectives of this sub-analysis were to describe and compare the socio-demographic, clinical-epidemiological and behavioral profile and level of knowledge of FSWs that either access or do not access SHC.

Methods

A cross-sectional study was performed in 2016 with resident FSWs in the RM of Chile, over the age of 18, that had had penetrative intercourse with men in exchange for money during the previous 12 months. The results presented in this article correspond to the sub-analysis of that larger study that includes all FSWs who answered the question "How often do you go to sexual health Controls?" which corresponded to 98.1% of the initial sample.

According to a previously described typology (Belmar et al. 2017), the RM has seven types of venues or locations for FSW: nightclubs/topless bars/cabarets; *Casa de tolerancia (type of brothel);* hotels; private apartments; *Café con piernas* (Coffee with legs); massage parlors; and street/highway.

Through a formative research process, different sex work venues (typology) were identified. An extensive list was created that included the meeting points for each typology, except for massage parlors and private apartments, due to the absence of key informants that would have allowed us to access this information. With this information in hand, in addition to identifying days and open hours of the venues, availability of space to perform the study, authorizations and number of FSWs per shift allowed us to establish a sample framework. The time-location sampling (TLS) (Raymond et al. 2007) method was used to randomly assign venues (V), days (D) and the time slots (T) (VDT) that had been visited. This assignment was performed monthly, during the recruitment period, maintaining a formal calendar with alternatives for possible last-moment access problems. Within each VDT, every FSW was surveyed.

Sample size

Considering a population size of 3000 FSWs in the RM, estimated during the formative research stage, with an expected dropout rate of 8.0%, a confidence level of 95%, precision of ± 1.2 percentage units, an HIV population percentage of about 1% (Barrientos et al. 2007; Ministerio de Salud de Chile y ONUSIDA 2014) and a design effect of 1.5, the minimum sample size necessary was 368 FSWs.

Data collection methods

A behavioral survey was validated for second-generation HIV surveillance in FSWs in the RM before fieldwork was conducted (Carvajal et al. 2017). The validated survey was applied in Spanish by field staff and contained behavioral variables that included questions relating to clients, stable and occasional partners, lifestyle during the previous year and last 6 months (drug use, sex work, sexual practices, etc.), socio-demographic (age, country of origin, educational level, etc.), clinical-epidemiological characteristics (STIs, access to health services, access to social services, among others) and knowledge (where to get tested, HIV transmission routes, health status recognition of clients). The place for conducting the survey was the sex work venues/locations that included closed venues (nightclubs, topless bars and cabarets; hotels, *casa de tolerancia, café con piernas*) and streets and highways. Fieldwork was conducted by four previously trained interviewers, who

additionally were sex workers belonging to the MARGEN foundation, a sex worker foundation in Chile. These women were accompanied by two clinical researchers specifically trained for on-site work. All fieldwork personnel were adequately trained in formative sessions, and an interviewer manual was created. For their participation, each FSW received incentives consisting of $ 8 USD, a kit with preventive materials, condoms and lubricants.

Access to SHC was measured by attendance frequency, categorized by never, once every year, two–three times per year and more than three times per year. For analytical purposes, this variable was recoded to never (no checkup) and attended at least once during their life (with checkup).

Data analysis

Qualitative variables were described using percentages and their confidence intervals at 95% (95% CI), and quantitative variables were described using median and interquartile range. The distribution differences among woman with and without SHC were compared with the χ^2 Pearson test and Fisher's exact test when the expected frequencies were under 5. The nonparametric Mann–Whitney U test was used to compare quantitative variables.

Univariate and multivariate logistical regression models were used for the analysis of associated factors to the nonattendance to SHC. Odds ratio (OR) was calculated and their 95% CI. Possible confounding factors and variables with a non-adjusted significant OR at level 0.10 were included in the initial multivariate model. The best multivariate model was obtained comparing the likelihood ratio of the models. For data analysis, we took into account the multistage sample design, considering the following stages: (1) stratification by sampling month; (2) venue sampling, giving rise to conglomerates; and (3) VDT selection. Lastly, no FSW selection was performed but instead, all women present at the moment of the visit were interviewed.

Ethical considerations

The project (including participant information sheets and informed consent forms) was approved by the Committee of Ethics of the Faculty of Medicine of the Universidad de Chile (N175-2014). Each FSW signed an informed consent before participating in the study.

Results

370 FSWs were interviewed and 363 answered the question regarding SHC frequency. Table 1 shows that 29.8% (108) were foreign-born, predominately Colombian (42; 38.9%) and Dominican (37; 34.3%). The average participant age

Table 1 Socio-demographic characteristics and access to sexual health checkups of the sample of female sex workers in the metropolitan region of Chile, 2015

Variables	Frequency (%) total (n = 363)
Place where sex work is performed	
Café con piernas	78 (21.5%)
Nightclub/topless bar	135 (37.2%)
Street/highway	115 (31.7%)
Casa tolerancia[a]	23 (6.3%)
Quinta de recreo[b]	12(3.3%)
Age	
19–25	85 (23.4%)
25–31	107 (29.5%)
31–38	78 (21.5%)
Over 38	93 (25.6%)
Country of origin	
Chile	255 (70.2%)
Other	108 (29.8%)
Name of country of origin (n = 108)	
Colombia	42(38.9%)
Dominican Republic	37(34.3%)
Ecuador	11(10.2%)
Paraguay	1(0.9%)
Perú	17(15.7%)
Educational level	
Primary	70 (19.3%)
Secondary	265 (73.0%)
Higher	28 (7.7%)
Frequency for attending SHC[c] (n = 363)	
Never	140 (38.6%)
Once a year	65 (17.9%)
Two–three times a year	55 (15.2%)
> three times a year	103 (28.4%)
Place for SHC among group that attends (n = 223)	
Public consult/CESFAM/APS[d]	76 (34.1%)
UNACESS[e]	84 (37.7%)
Hospital or CDT[f]	43 (19.3%)
Private sector	19 (8.5%)
Does not know/does not answer	1 (0.5%)

[a]*Casas de tolerancia* (House of tolerance): is one of the oldest type of venues for SWs that exist in Chile. These establishments have a main hall for drinking, talking and dancing, and with rooms for sexual intercourse. The FSWs live at the venue, under very precarious conditions

[b]Quinta de recreo: similar to a house of tolerance, but located in rural areas

[c]SHC: sexual health checkups

[d]UNACESS: Unidades de atención especializada en salud sexual (SHC and attention units)

[e]CESFAM: Centro de Salud familiar/APS: Atención primaria en salud

[f]Hospitals or CDT: at hospital and specialized CDT centers, specialized gynecological attention is provided but not orientated at female sex workers

Table 2 Socio-demographic characteristics, sexual practices, health status and alcohol/drug consumption of female sex workers according to female sex workers access to sexual health checkups in the metropolitan region of Chile, 2015

	FSWs[a] without checkup (n = 140)		FSWs with checkup (n = 223)		p value
	n	% (95% CI)	n	% (95% CI)	
Place where sex work is performed					
Cafés con piernas (coffee with legs)	30	21.4 (9.5–41.4)	48	21.5 (10.7–38.4)	0.32
Nightclub/topless bar	60	42.8 (23.0–65.2)	75	33.6 (18.1–53.6)	
Street/highway	41	29.2 (12.7–54.0)	74	33.1 (14.9–58.3)	
Casa tolerancia	6	4.2 (0.5–26.7)	17	7.6 (1.7–28.1)	
Quinta de recreo	3	2.1 (0.4–9.5)	9	4.0 (0.9–15.9)	
Age					
19–25	53	37.8 (28.3–48.4)	32	14.3 (8.2–23.7)	**< 0.01**
25–31	38	27.1 (21.3–33.8)	69	30.9 (23.9–39.0)	
31–38	29	20.7 (12.7–31.8)	49	21.9 (17.3–27.4)	
Over 38	20	14.2 (7.2–26.3)	73	32.7 (23.4–43.6)	
Country of origin					
Chile	101	72.1 (58.6–82.5)	154	69.0 (57.1–78.9)	0.05
Other	39	27.8 (17.4–41.3)	69	30.9 (21.0–42.8)	
Educational level					
Primary	29	20.7 (12.6–32.0)	41	18.4 (13.8–24.1)	0.34
Secondary	97	69.3 (59.3–77.7)	168	75.3 (68.4–81.2)	
Higher	14	10.0 (56.6–17.2)	14	6.3 (4.0–9.8)	
Health care/health insurance (n = 138)					
With health care	106	76.8 (64.7–85.6)	184	84.0 (78.9–88.0)	0.15
Without health care	32	23.1 (14.3–35.2)	35	15.9 (11.9–21.0)	
Non-client relationship status					
Stable partner/live together	46	32.8 (24.3–42.7)	73	32.7 (25.0–41.5)	0.07
Stable partner/live separate	29	20.7 (15.2–27.4)	75	33.6 (23.6–45.2)	
Occasional partners	5	3.5 (1.6–7.7)	4	1.7 (0.6–5.0)	
Single	60	42.8 (34.7–51.4)	71	31.8 (25.0–39.5)	
SW starting age					
Median (RI)	21	(19–27)	24	(20–30)	**0.01**
Used condom in last penetrative intercourse with client					
Yes	133	95.0 (84.7–98.4)	220	99.1 (96.2–99.7)	**0.01**
No	7	5.0 (1.51–15.3)	2	0.9 (0.2–3.7)	
Used condom during last sexual intercourse with stable male partner (n = 134)					
Yes	42	31.3 (22.6–41.5)	58	26.9 (20.3–34.7)	0.37
No	92	68.6 (58.4–77.3)	157	73.0 (65.2–79.6)	
Received free condoms during last 12 months					
Yes	78	55.7 (40.2–70.1)	174	78.7 (66.6–87.2)	**< 0.01**
No	62	44.2 (29.8–59.7)	47	21.2 (12.7–33.3)	
Place where free condoms were received during last 12 months (n = 137)					
Purchased at pharmacy	69	50.3 (36.9–63.7)	76	35.1 (24.3–47.8)	**< 0.01**
Public consult	11	8.0 (4.414.11)	19	8.8 (4.6–15.9)	
UNACESS/SHC[c]	2	1.4 (0.3–5.9)	63	29.1 (19.9–40.4)	
Association/group	39	28.4 (15.4–46.4)	48	22.2 (13.1– 35.1)	
At work	16	11.6 (6.6–19.6)	10	4.6 (2.2–9.3)	

Table 2 (continued)

	FSWs[a] without checkup (n = 140)		FSWs with checkup (n = 223)		p value
	n	% (95% CI)	n	% (95% CI)	
Group sex during last 6 months (n = 139)					
Yes	37	26.6 (19.03–35.8)	36	16.2 (11.5–22.4)	**< 0.01**
No	102	73.3 (64.1–80.9)	185	83.7 (77.5–88.4)	
Used drugs at any time during their life					
Yes	96	68.5 (59.1–76.6)	121	54.2 (43.8–64.3)	**< 0.01**
No	44	31.4 (23.3–40.8)	102	45.7 (35.6–56.1)	
Daily alcohol consumption[e] (n = 99)					
Moderate or does not drink	56	56.6 (42.7–69.5)	116	72.5 (65.0–78.9)	**0.05**
Risk consumption	13	13.1 (6.3–25.4)	17	10.6 (5.9–18.4)	
Harmful consumption	30	30.3 (21.2–41.3)	27	16.9 (11.6–23.8)	
Time since last PAP[d] smear					
Never	55	39.2 (30.3–.49.0)	34	15. (10.5–21.7)	**< 0.01**
Less than a year	61	43.5 (35.2–52.3)	144	64.86 (59.2–70.1)	
Between 1 and 3 years	15	10.7 (6.2–17.7)	36	16.2 (12.0–21.4)	
More than 3 years	9	6.4 (2.4–15.8)	8	3.6 (1.7–7.3)	
Results from last PAP smear					
Normal	73	93.5 (82.5–97.8)	170	96.0 (91.7–98.1)	0.45
Abnormal	5	6.4 (2.1–17.4)	7	3.9 (1.8–8.2)	
STI "any time" (n = 137)					
Yes	15	10.9 (5.6–20.1)	29	13.0 (8.6–19.1)	0.51
No	122	89.0 (79.8–94.3)	194	87.0 (80.–91.38)	
STI "last year" (n = 15)					
Yes	4	2.9 (0.9–8.8)	5	2.2 (0.9–5.5)	0.09
No	11	7.9 (4.2–14.2)	24	0.8 (7.3–15.7)	

[a]FSW: female sex worker

[b]SW: sex work

[c]UNACESS/SCH: Unidades de atención especializada en salud sexual (SHC and attention units)/sexual control health

[d]PAP: Papanicolau smear

[e]Moderate consumption: 0–24 g/day; risk consumption: 25–40 g/day; HARMFUL consumption: > 40 g/day

Bold values represent statistically significant

was 31 (19–79). The predominant education level was secondary (265; 73.0%). The majority of women worked at nightclubs (135; 37.2%) or on streets/highways (115; 31.7%).

Of the total of FSWs that were interviewed, 38.6% (140) declared never attending SHC and 61.4% (223) reported attendance of differing frequencies. Among those that did attend SHC, 37.7% (84) visited specialized FSW centers (UNACESS) and 46.2% (103) visited more than three times per year, approaching the recommended number of SHC visits.

As shown in Table 2, the only statistically significant variable was age, where it was observed that FSWs without SHC were younger than those that did attend. In more detail, among FSWs without SHC, the predominant age group was 19–31 years (91; 64.9%), while FSWs with SHC were predominantly over the age of 31 (122; 54.6%).

Regarding the issue of sexual practices, differences were observed in SW starting age, condom use during last penetrative sexual intercourse with a client, access to free condoms during the previous 12 months and group sex practice. Specifically, FSWs without SHC showed lower average SW starting age (21 years) than FSWs with SHC (24 years; $p = 0.01$). A lower percentage of FSWs without SHC received free condoms during the previous 12 months, in comparison to those that did attend checkups (78; 55.7% vs. 174; 78.7%; $p < 0.01$). A higher percentage of women without SHC declared purchasing condoms at pharmacies (69; 50.3% vs. 76; 35.1%). The percentage that declared receiving condoms at UNACESS was 29.2% (63). Moreover, FSWs without SHC declared having used

Table 3 Level of knowledge in sexual health of female sex workers according to female sex workers access to sexual health checkups in the metropolitan region of Chile, 2015

	FSWs without checkup		FSWs with checkup		*p* value
	n	% (95% IC)	*n*	% (95% IC)	
Knows where to go to get HIV test ($n = 138$)					
Yes	108	78.2 (67.4–86.2)	215	96.8 (92.9–98.6)	**< 0.01**
No	30	21.7 (13.7–32.5)	7	3.1 (1.37–7.0)	
HIV is transmitted by sharing needles ($n = 139$)					
Yes	133	95.6 (91.3–97.9)	208	94.5 (90.5–96.9)	0.14
No	6	4.3 (2.0–8.7)	12	5.4 (3.08–9.4)	
HIV is transmitted by unprotected vaginal sex ($n = 139$)					
Yes	139	100 (100–100)	220	99.1 (96.8–99.7)	0.16
No	0	0 (0–0)	2	0.9 (0.25–3.19)	
HIV is transmitted by unprotected anal sex ($n = 139$)					
Yes	133	95.6 (91.0–97.9)	202	92.2 (87.9–95.1)	**0.02**
No	6	4.3 (2.0–8.9)	17	7.7 (4.9–12.0)	
HIV is transmitted by unprotected oral sex ($n = 137$)					
Yes	123	89.7 (83.0–94.0)	185	84.8 (79.1–89.2)	**< 0.01**
No	14	10.2 (5.9–16.9)	33	15.1 (10.7–20.8)	
HIV is transmitted from having been born from a mother with HIV ($n = 137$)					
Yes	124	90.5 (85.3–94.0)	179	82.4 (76.2–87.3)	**< 0.01**
No	13	9.4 (5.9–14.7)	38	17.5 (12.6–23.7)	

Bold values represent statistically significant

condoms fewer times during their previous penetrative sexual intercourse with a client (133; 95.0% vs. 220; 99.1%, respectively; $p = 0.01$). Lastly, we observed that FSWs without SHC had a higher percentage that declared having practiced group sex during the previous 6 months (37; 26.6% vs. 36; 16.2%; $p \leq 0.01$).

Regarding health status and drug use, a higher proportion of FSWs without checkups declared having used drugs at some time during their life (96; 68.5% vs. 121; 54.2%; $p = 0.05$). No significant differences were reported regarding prevalence of reported STIs, neither during their life nor during the previous 12 months. The time since the last PAP smear presented significant differences, 39.2% (55) of FSWs without SHC having never had a PAP smear.

Finally, regarding knowledge on sexual health issues, presented in Table 3, a lower proportion of women without SHC knew where to get an HIV test (108; 78.2% vs. 215; 96.8%; $p = 0.01$). Moreover, a higher percentage of FSWs without checkups identified oral sex without a condom and vertical transmission (123; 89.7% and 124; 90.5%, respectively) as HIV transmission mechanisms.

Multivariate analysis

Table 4 shows that FSWs under the age of 38 had a higher probability of not accessing SHC than those of older age (OR 2.8; $p = 0.03$). FSWs with occasional or no partner were at a higher risk of not accessing SHC than those in a stable relationship (OR 3.83; $p = 0.001$). FSWs that had had group sex (OR 2.2; $p = 0.006$) and FSWs that did not know where to get an HIV test (OR 10.6; $p = 0.001$) were also at a higher risk of not accessing SHC. On the other hand, FSWs that had received condoms at specialized FSW centers (UNACESS) rather than at SW community groups were observed to be at a lower risk of not attending checkups (OR 0.04; $p = 0.002$).

Discussion

The results show a high percentage of FSWs that do not access SHC in the RM (38.6%), which coincides with the low number of FSWs that have been accessing SHC

Table 4 Associated factors to non-access to sexual health checkups in female sex workers in the metropolitan region of Chile, 2015

	Multivariate[a]	
	OR (95% CI)	*p* value
Age (years)		
19–25 versus over 38	2.8 (1.2–6.5)	**0.03**
25–31 versus over 38	2.0 (0.9–4.2)	
31–38 versus over 38	3.9 (1.5–10.4)	
Non-client relationship status		
Stable partner/lives with her versus stable partner does not live with her	2.2 (0.9–4.9)	**< 0.01**
Occasional partners/single versus stable partner does not live with her	3.8 (1.9–7.4)	
Where condoms were obtained during last 12 months		
Purchased at pharmacy versus association/group	0. (0.3–1.8)	**< 0.01**
At a public consult versus association/group	0.9 (0.37–2.5)	
UNACESS[b]/sexual health center versus association/group	0.0 (0.0–0.1)	
At work versus association/group	1.6 (0.5–4.6)	
Group sex during last 6 months		
Yes versus no	2.2 (1.2–3.9)	**< 0.01**
Knows where to get an HIV test		
Yes versus no	10.6 (2.8–39.6)	**< 0.01**

[a]Analysis adjusted by "number of children," "time since last Papanicolau smear"

[b]UNACESS: Unidades de atención especializada en salud sexual (SHC and attention units)

Bold values represent statistically significant

establishments since 2007 in the RM and with international data that report that between 25% and 40% FSWs have not visited any health center (Phrasisombath et al. 2012; Ghimire and van Teijlingen 2009; Lafort et al. 2017). Data from the Ministry of Health of Chile show that in 2016, only 486 FSWs were attending checkups (Ministry of Health of Chile 2016).

Among those that do access SHC, there is an insufficient number of visits in relation to the requirement of six annual visits established in the national guidelines for FSWs (Ministry of Health of Chile 2008), as well as the lack of access to specialized centers for SWs such as UNACESS. Our findings show that only 37.7% of interviewed FSWs attend checkups at this type of centers, followed by family healthcare centers (CESFAM) of the primary care centers (APS) and hospitals or diagnosis and treatment centers (CDT) in third place. These last two establishments do not take into account the specific needs of this population and therefore do not perform specific tests or educate in prevention of HIV and other STIs, regardless of the FSWs declared their profession or not (Jeal and Salisbury 2004; Davis et al. 2016).

Coinciding with the results of a qualitative study conducted with FSWs in Chile focused on determining the typology of sex work in the RM (Belmar et al. 2017), FSWs that declared never having accessed SHC had a higher proportion of women under 25 than those that declared accessing them (37.8% vs. 14.3%) which could be explained by fact that for older FSWs, SHC was mandatory for many years. It is worth mentioning that international studies that analyze the effect that socio-demographic factors have on access to sexual health services and/or identified barriers to access (Ghimire et al. 2011; Phrasisombath et al. 2012; Socías et al. 2016; Lafort et al. 2017) do not report significant differences in the age variable, which underlines that the lack of access to SHC and information in young women is a characteristic of FSWs working in Chile.

Consistent with this situation, FSWs without SHC present some high-risk behaviors for HIV and STIs such as group sex and lack of information on where to get an HIV test, presenting higher levels of labor and health vulnerability.

However, the prevalence of self-reported STIs "at some time during my life" reached 12.2% and "last year" 2.9%, presenting no significant differences between women with or without SHC. International studies report a broad range of results on issues of STIs prevalence with regard to the type of infection, as well as the different labor contexts of FSWs. For example, higher STIs prevalence is observed in migrant and street-level FSWs (Jeal et al. 2008; Del Amo et al. 2005; Li et al. 2013). A study performed in Germany,

a country with regulated sex work, reports a 3.1% STI prevalence in FSWs (Bremer et al. 2016), while in the Netherlands, a study reports 9.5% prevalence of STIs in the same population (Verscheijden et al. 2015).

Moreover, the inexistence of differences in STIs prevalence among FSWs, with (predominantly FSWs over the age of 30) and without SHC, contrasts with the high percentage of women who have never had PAP smear (25.0% approx.), and international studies that state that women over 30 and women without SHC are at higher risk of being infected with an STI (Hakre et al. 2013; Yanli et al. 2017). This situation makes us reflect on the preventive strategies that FSWs develop in their work and the role that social organizations have as an important part of society, with regard to preventive measures and advocacy of labor rights.

An additional relevant finding of this study is the high use of condoms with clients declared by FSWs, in both women that attend SHC and those who do not. More than 95% of FSWs that participated in the study declared to consistently use condoms, with both regular and occasional clients. These results match data found in numerous international studies where condom use oscillates between 75 and 95% (Andrews et al. 2015; Fehrenbacher et al. 2016). It should be noted that in both women with or without access to SHC, the main source for obtaining condoms is pharmacies, where they have to purchase them, which shows the interest that FSWs have in using condoms, but also the situation of vulnerability that they find themselves. Moreover, questions remain as to why, despite attending controls where condoms are given away, some women also decide to purchase them on their own. Possible reasons could be the quantity dispensed, perceived quality or inadequate assortment. A study performed in a different region in Chile (Madrid 2015), where sexual health centers work in the same way as in the metropolitan region, clearly describes that FSWs consider that the number of condoms provided monthly (40 per person) is insufficient, and therefore, FSWs must acquire additional condoms through other channels.

In contrast to what occurs when FSWs are with clients, consistent condom use of FSWs with their partners is very low, at only around 30%. This result matches international studies that demonstrate how FSWs are at higher risk from their partners regarding HIV and STIs, and that infections are generally the result of having unprotected sex with them. Therefore, it is key to implement preventive measures aimed at this area of their lives. (Deering et al. 2011; Robertson et al. 2013).

Among the limitations of this study, we encountered difficulties in recruiting FSWs in hard-to-reach work places such as private apartments, which were left aside from this characterization. Moreover, as part of being a cross-sectional study, we could not establish cause–effect relations between the studied variables.

In conclusion, the study shows that Chile has a high percentage of FSWs that do not access to SHC, observing that those who do not, present higher-risk behaviors.

According to the results of the study, at least three interesting lines of investigation are open to explore: (1) the perception of risk that FSWs manage and the connection it has when seeking reproductive health services; (2) the differences in availability of services between Chilean and foreign-born FSWs, considering the important percentage of migrants in Chile; and (3) the type of services that are required, taking into consideration the characteristics of sex work and FSWs in Chile. Regarding this last point, and in consideration of the epidemiological and sociocultural reality of SWs in Chile, it is necessary to assess the pertinence of the services that are offered to different women groups (young women, migrants, night workers, etc.) and then design new strategies focused on workplace outreach, would allow to provide informative/preventive information, perform STIs screening, among other activities.

In fact, the methodology used in this study was very well received by FSWs, either to receive information and clarify doubts, or to receive specific tests. Moreover, and given the great reception from community outreach organizations, we recommend that these initiatives be included in public policies and be incorporated as part of their institutional activities.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

Andrews CH, Faxelid E, Sychaerun V, Phrasisombath K (2015) Determinants of consistent condom use among female sex workers in Savannakhet, Lao PDR. BMC Womens Health 15(1):63. https://doi.org/10.1186/s12905-015-0215-0

Barrientos J, Bozon M, Ortiz E, Arredondo A (2007) HIV prevalence, AIDS knowledge, and condom use among female sex workers in Santiago, Chile. Cad Saude Publica 23(8):1777–1784

Belmar J, Stuardo V, Folch C, Carvajal B, Clunes MJ, Montoliu A, Casabona J (2017) A typology of female sex work in the metropolitan region of Santiago, Chile. Cult Health Sex (TCHS) 20:428–441

Bremer V, Haar K, Gassowski M, Hamouda O, Nielsen S (2016) STI tests and proportion of positive tests in female sex workers attending local public health departments in Germany in 2010/11. BMC Public Health 16(1):1175. https://doi.org/10.1186/s12889-016-3847-6

Carvajal B, Stuardo V, Manríquez JM, Belmar J, Folch C (2017) Adaptación de una encuesta bioconductual para la vigilancia del VIH en mujeres trabajadoras sexuales chilenas. Gac Sanit. https://doi.org/10.1016/j.gaceta.2016.10.010

Davis A, Meyerson BE, Aghaulor B, Brown K, Watson A, Muessig KE, Yang L, Tucker JD (2016) Barriers to health service access among female migrant Ugandan sex workers in Guangzhou, China. Int J Equity Health 15(1):170. https://doi.org/10.1186/s12939-016-0453-2

Deering KN, Bhattacharjee P, Bradley J, Moses SS, Shannon K, Shaw SY, Washington R, Lowndes CM, Boily MC, Ramesh BM, Rajaram S, Gurav K, Alary M (2011) Condom use within non-commercial partnerships of female sex workers in southern India. BMC Public Health 11(Suppl 6):S11. https://doi.org/10.1186/1471-2458-11-S6-S11

Del Amo J, Gonzalez C, Losana J, Clavo P, Muñoz L, Ballesteros J, García-Saiz A, Belza MJ, Ortíz M, Menendéz B, del Romero J, Bolumar J (2005) Influence of age and geographical origin in the prevalence of high risk human papillomavirus in migrant female sex workers in Spain. Sex Transm Infect 81(1):79–84. https://doi.org/10.1136/sti.2003.008060

Fehrenbacher AE, Chowdhury D, Ghose T, Swendeman D (2016) Consistent condom use by female sex workers in Kolkata, India: testing theories of economic insecurity, behavior change, life course vulnerability and empowerment. AIDS Behav 20(10):2332–2345. https://doi.org/10.1007/s10461-016-1412-z

Ghimire L, van Teijlingen ERV (2009) Barriers to utilisation of sexual health services by female sex workers in Nepal. Glob J Health Sci. https://doi.org/10.5539/gjhs.v1n1p12

Ghimire L, Smith WC, van Teijlingen ER (2011) Utilisation of sexual health services by female sex workers in Nepal. BMC Health Serv Res 11:79. https://doi.org/10.1186/1472-6963-11-79

Hakre S, Arteaga G, Núñez AE, Bautista CT, Bole A, Villarroel M, Peel SA, Paz-Bailey G, Scott PT, Psacale JM, Panama HIV EPI Group (2013) Prevalence of HIV and other sexually transmitted infections and factors associated with syphilis among female sex workers in Panama. Sex Transm Infect 89:156–164

Jeal N, Salisbury C (2004) Self-reported experiences of health services among female street-based prostitutes: a cross-sectional survey. Br J Gen Pract 54(504):515–519

Jeal N, Salisbury C, Turner K (2008) The multiplicity and interdependency of factors influencing the health of street-based sex workers: a qualitative study. Sex Transm Infect 84:381–385

Lafort Y, Greener R, Roy A, Greener L, Ombidi W, Lessitala F, Skordis-Worrall J, Beksinska M, Gichangi P, Reza-Paul S, Smit JA, Chersich M, Delva W (2017) Sexual and reproductive health services utilization by female sex workers is context-specific: results from a cross-sectional survey in India, Kenya, Mozambique and South Africa. Reprod Health 14(1):13. https://doi.org/10.1186/s12978-017-0277-6

Li J, Chen XS, Merli MG, Weir SS, Henderson GE (2013) Systematic differences in risk behaviors and syphilis prevalence across types of female sex workers: a preliminary study in Liuzhou, China. Sex Transm Dis 39(3):195–200. https://doi.org/10.1097/OLQ.0b013e31823d2e2a.Systematic

Madrid R (2015) Percepción, gestión de riesgo, y vulnerabilidad de las trabajadoras sexuales en el contexto del comercio sexual en Rancagua

Ministerio de Salud de Chile, ONUSIDA (2014) Informe nacional de Progreso sobre SIDA en Chile GARPR 2014, 2014, 188

Phrasisombath K, Thomsen S, Sychareun V, Faxelid E (2012) Care seeking behaviour and barriers to accessing services for sexually transmitted infections among female sex workers in Laos: a cross-sectional study. BMC Health Serv Res 12(1):37. https://doi.org/10.1186/1472-6963-12-37

Raymond, HF, Ick T, Grasso M, Vaudrey J, McFarland W (2007) Resource guide: time location sampling (TLS). Choosing a sampling method. 2nd edn

Robertson AM, Syvertsen JL, Rangel MG, Staines HS, Morris M, Patterson TL, Ulibarri M, Strathdee SA (2013) Concurrent sexual partnerships among female sex workers and their non-commercial male partners in Tijuana and Ciudad Juarez, Mexico. Sex Transm Infect 89(4):330–332. https://doi.org/10.1136/sextrans-2012-050693

Socías ME, Shoveller J, Bean C, Nguyen P, Montaner J, Shannon K (2016) Universal coverage without universal access: institutional barriers to health care among women sex workers in Vancouver, Canada. PLoS ONE 11(5):1–15. https://doi.org/10.1371/journal.pone.0155828

Verscheijden MA, Woestenberg PJ, Götz HM, van Veen MG, Koedijk FD, van Benthem BHB (2015) Sexually transmitted infections among female sex workers tested at STI clinics in the Netherlands, 2006–2013. Emerg Themes Epidemiol 12(1):12. https://doi.org/10.1186/s12982-015-0034-7

Wahed T, Ala A, Sultana S, Rahman M, Alam N, Martens M, Somrongthong R (2017) Barriers to sexual and reproductive healthcare services as experienced by female sex workers and service providers in Dhaka city, Bangladesh. PLoS One 12(7):e0182249. https://doi.org/10.1371/journal.pone.0182249

Yanli G, Xiaoguo X, Gengfeng F, Xiping H, Ning J, Yueping Y, Xiangsheng Ch (2017) Risk behaviours and prevalences of HIV and sexually transmitted infections among female sex workers in various venues in Changzhou, China. Int J STD AIDS 28(11):135–1142. https://doi.org/10.1177/0956462416689763