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Recent im/migration to Canada linked to unmet health needs among sex workers in Vancouver, Canada: Findings of a longitudinal study

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ABSTRACT

Despite universal health care in Canada, sex workers (SWs) and im/migrants experience suboptimal health care access. In this analysis, we examined the correlates of unmet health needs among SWs in Metro Vancouver over time. Data from a longitudinal cohort of women SWs (An Evaluation of Sex Workers Health Access [AESHA]) were used. Of 742 SWs, 25.5% reported unmet health needs at least once over the 4-year study period. In multivariable logistic regression using generalized estimating equations, recent im/migration had the strongest impact on unmet health needs; long-term im/migration, policing, and trauma were also important determinants. Legal and social supports to promote im/migrant SWs' access to health care are recommended.

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Globally, it is estimated that there are over 240 million international migrants worldwide ('United Nations Population Fund, n.d.), with women representing almost half of all migrants internationally (International Organization for Migration [IOM], 2015b). Women are migrating for purposes of seeking new economic and social opportunities, family reunification, and improved health and security (Goldenberg, Liu, Nguyen, Chettiar, & Shannon, 2014; Platt et al., 2013; Zimmerman, Kiss, & Hossain, 2011). However, resettlement in destination countries often results in a number of barriers to health for women including language barriers, discrimination, and limited access to services; and migrant women are consequently disproportionately represented within precarious forms of work, including sex work (Goldenberg, 2017; MacDonnell, Dastjerdi, Khanlou, Bokore, & Tharao, 2016).

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Previously, international researchers have shown that immigrant populations, notably women, within immigrant-receiving countries can face elevated health and social vulnerabilities related to higher rates of unmet health needs (Bryant, Leaver, & Dunn, 2009; Casey, Blewett, & Call, 2004; Schoevers, Loeffen, Muijsenbergh, & Lagro-Janssen, 2010; Wu, Penning, & Schimmele, 2005). Health is regarded as a fundamental human right by international laws and policies (World Health Organization, 2015), and although many immigrant-receiving countries aim to provide both legal and undocumented residents with access to health services (Asanin & Wilson, 2008; Casey et al., 2004; Schoevers et al., 2010), unmet health needs may be persistent and rising in countries such as Canada (Bryant et al., 2009; Sanmartin, Houle, Tremblay, & Berthelot, 2002). In particular, immigrants and migrants (im/migrants), women, and those of low socioeconomic status may face increased risk for unmet health needs (Bryant et al., 2009; Chen & Hou, 2002; Wu et al., 2005).

Unmet health needs can be defined as the difference between services deemed necessary to deal with a defined health problem and the services actually received (Carr & Wolfe, 1976). This definition includes subjective aspects such as patient perception of quality of care (Allin, Grignon, & Le Grand, 2010) and differing social contexts that shape help-seeking behavior (Wu et al., 2005), rather than regarding unmet health needs as merely barriers to health care access. Reasons for unmet health needs can therefore be conceptualized as availability (e.g., lengthy waits, insufficient supply), accessibility (e.g., cost, language, transportation barriers), and acceptability (e.g., attitudes, preferences) of health services (Chen & Hou, 2002; Levesque, Harris, & Russell, 2013).

Among im/migrants, defined as both legal immigrants as well as migrants who move from one country to another but lack legal status (IOM, 2015a), women often face greater difficulty accessing health care than men (Chen & Hou, 2002; Newbold, 2005a; Wu et al., 2005). Reasons for this difference may include overlapping social determinants of health such as gender roles, social class, employment options, and legal status that differentially influence access to services for women (Chen & Hou, 2002; Newbold, 2005a; Wu et al., 2005). In Canada, women outnumber men in "dependent" categories of immigration (i.e., are most often the sponsored family member), and have been shown to face pervasive challenges accessing conventional labor markets in Canada resulting in overrepresentation in informal sectors of work such as sex work (Goldenberg, 2017; Oxman-Martinez et al., 2005). Despite facing acute health inequities and pervasive barriers to health access, patterns of health access and unmet health needs among im/migrant sex workers (SWs) remain poorly understood (Goldenberg, 2017; Platt et al., 2013).

Globally, researchers have documented that SWs frequently experience unmet health needs including suboptimal preventive care (e.g., sexually transmitted infection (STI) testing and cervical screening) and inadequate treatment following abuse, rape, or assault (Duff et al., 2016; Jeal & Salisbury, 2004, 2007; Scorgie et al., 2013; Socías et al., 2015). Canadian researchers have also suggested that SWs have

inadequate access to sexual and reproductive health services and cervical screening (Kim et al., 2015). As many of these unmet health needs are persistent in settings where high-quality health care is available and contact with general practitioners is frequently reported in the general population (Jeal & Salisbury, 2004, 2007; Socías et al., 2016), health care barriers faced by SWs can be attributed to negative attitudes of health care providers, fear of being judged within health-care settings, as well as the broader stigma and criminalization that shape SWs' everyday lives (Deering et al., 2014; Duff et al., 2016; Socías et al., 2016).

Researchers in Vancouver, Canada have found that im/migrant SWs are more likely to face reduced access to certain health-related and preventive services, including HIV and Hepatitis C Virus (HCV) testing, as compared to their Canadian-born counterparts (Deering et al., 2014; Socías et al., 2015). In addition to sex work-related barriers to health access, im/migrants in sex work may face additional barriers related to language differences, unfamiliarity with or lack of information regarding local health systems, concerns regarding legal immigration status, lack of insurance coverage for recent arrivals, financial barriers, isolation from health services, and differing cultural perceptions of health (Asanin & Wilson, 2008; Campbell, Klei, Hodges, Fisman, & Kitto, 2012; Deering et al., 2014; Goldenberg et al., 2014; Kalich, Heinemann, & Ghahari, 2015; Mc Grath-Lone, Marsh, Hughes, & Ward, 2014; Wu et al., 2005).

Currently, limited attention has been directed to the type or duration of migration, gender, or occupation-specific experiences in im/migrant health research (including im/migrant SWs)—researchers have historically regarded im/migrants as fairly homogeneous (Platt et al., 2013; Zimmerman et al., 2011). However, im/migrant populations are diverse and evidence suggests that dynamic changes in legal status (e.g., temporary to permanent resident status), access to housing, social networks, and social integration experienced over the course of migration are highly linked to changes in health status (Acevedo-Garcia, Sanchez-Vaznaugh, Viruell-Fuentes, & Almeida, 2012; Zimmerman et al., 2011). For example, the "healthy migrant effect" proposes that some types of im/migrants are often healthier than non-migrants at the time of migration and increasingly adopt behaviors and health outcomes that are more similar to non-migrants over time (Newbold, 2005b). At the same time, however, theories on the disruptive effects of migration (e.g., social isolation, unfamiliarity with health systems, lack of insurance, socioeconomic deprivation) posit that disruptions can take place immediately following arrival in a new destination, and can attenuate for some im/migrant groups over time (Ng & Nault, 1997; White, Moreno, & Guo, 1995).

These hypotheses have rarely been examined among im/migrant SWs internationally, with a particular paucity of evidence within North American settings; moreover, the majority of studies to date have been cross-sectional and qualitative in nature. Investigating patterns of health access and unmet health needs among SWs, particularly in relation to im/migration experiences, remains critically needed in order to inform SW and im/migrant-tailored approaches to health service delivery in immigrant-receiving countries internationally. Findings have important

policy and programming implications for health care providers, public health specialists, and policy makers in immigrant-receiving countries, given trends toward increasing patterns of immigration and globalization worldwide (IOM, 2015b; Zimmerman et al., 2011). As such, we seek to investigate the relationship between im/migration experience and other socio-structural factors (e.g., policing, violence) on unmet health needs among SWs in Metro Vancouver over time.

Methods

Participants

We drew on data from "An Evaluation of Sex Workers Health Access" (AESHA), an open prospective cohort of street and indoor SWs, from January 2010 to February 2014. Study participants were women (cis- and transgender), 14 years of age and older, and had exchanged sex for money within the last 30 days. All participants provided written informed consent. Participant recruitment was conducted through time-location sampling by day and late-night outreach teams to outdoor/public sex work locations (e.g., streets, alleys), indoor sex work venues (e.g., massage parlors, micro-brothels, and in-call locations), and online solicitation spaces across Metro Vancouver. As previously described, outdoor solicitation spaces ("strolls") and indoor sex work venues were identified through community mapping with current and former SWs (Shannon et al., 2007).

Data collection

SWs completed interview-administered questionnaires by a trained interviewer (both SWs and non-SWs) and HIV/STI/HCV serology testing by a project nurse at enrolment and biannually. The main questionnaire elicited responses related to socio-demographics, sex work patterns, physical work environment factors, and social/ interpersonal and structural environment factors. Geographic data (e.g., work locations, place of health service access) were also collected to understand spatial trends in health patterns. Biolytical INSTI rapid tests were used for HIV screening, urine samples were collected for gonorrhea and chlamydia, and blood samples were tested for syphilis, herpes simplex virus-2 (HSV-2) antibody, and HCV. All participants received an honorarium of $40 CAD at each biannual visit for their time, expertise, and travel.

The study received ethical approval through Providence Health Care/University of British Columbia Research Ethics Board and continues to be monitored by a Community Advisory Board comprised of more than 15 community agencies (Shannon et al., 2007).

Dependent variable

Unmet health need was assessed based on the question: "How often can you get health care services when you need it, in the last 6 months?" Answers included:

always (100% of the time), usually (>75% of the time), sometimes (25–75% of the time), occasionally (<25% of the time), never, and non-applicable (N/A). Responses were grouped into binary categories of having experienced unmet health needs: "yes" (i.e., sometimes, occasionally, never, and N/A) versus "no" (i.e., always and usually).

Independent variables

Time-fixed demographic and individual-level variables measured at baseline included: age (continuous), gender/sexual minority (i.e., lesbian, gay, bisexual, transgender, transsexual, or two-spirited), Indigenous (First Nations, Métis, and Inuit), im/migration experience ("non-migrant"—born in Canada; "recent im/migrant"—moved to Canada ≤5 years prior to baseline interview; "long-term im/migrant"—moved to Canada >5 years), high school completion or greater (yes versus no), and duration of sex work (continuous). Time-updated (in last 6 months) individual and biological factors included injection and non-injection drug use, and HIV seropositivity. Interpersonal factors considered were: physical and sexual intimate partner violence (i.e., whether participants experienced physical or sexual violence by a male intimate partner, boyfriend, or spouse) and lifetime abuse/trauma (i.e., yes versus no to an aggregate of verbal, physical, or sexual assault by a pimp/manager, dealer, stranger, police, working women, etc.).

Time-updated socio-structural variables with occurrences in the past 6 months included: homelessness; current unstable/transitional housing status; police harassment including arrest; poor treatment by health care professional; and community threats/assaults (i.e., yes versus no to verbal harassment/threats or physical violence by community residents or business in the main place(s) of sex work). Work environment factors considered were social cohesion and primary place of servicing clients (i.e., "outdoor/public space"—street, park; "informal indoor"—hotel, bar; and "formal indoor"—brothel/quasi-brothel).

Statistical analyses

Baseline descriptive statistics including frequencies and proportions for categorical variables or measures of central tendency and variability (i.e., mean, median and interquartile range [IQR]) were calculated for all variables and stratified by whether participants reported unmet health need in the past 6 months. Differences between SWs who reported unmet health need and those who did not at baseline were assessed using Pearson's chi-square test (Fisher's exact test for small cell counts) for categorical variables and the Mann–Whitney *U* test for continuous variables.

Bivariate and multivariable generalized estimating equations (GEEs) with a logit link function and exchangeable correlation structure, that account for repeated measures by the same respondents, were used to prospectively examine independent correlates of events of unmet health need over the 4-year observation period.

Potential confounders as described in previous literature, factors hypothesized *a priori* to be related to unmet health needs (e.g., recent and long-term im/migration), and variables with a significance level of less than 5% in bivariate analyses were considered for inclusion in the multivariable model. Model selection was done using a backward process, with the final model being selected as the one with the lowest quasi-likelihood under the independence model criterion value, as previously described by our group (Shannon et al., 2007). Analyses were performed using the SAS software version 9.4 (SAS, Cary, NC). All *p* values were two-sided.

Results

Among 742 street and indoor SWs, a quarter ($n = 189$, 25.5%) reported unmet health needs at least once over the 4-year study period, contributing to 255 reports of unmet health needs out of 2602 observations included. Of the 742 participants, 559 returned for at least one follow-up visit, with a median of 3 follow-up visits (IQR: 1–5) and median of 21.2 months (IQR: 5.7–36.2) under follow-up. The median age of participants at baseline was 35 years (IQR, 28–42) (Table 1). Approximately one-quarter (24.3%) were im/migrants to Canada, with 10.5% of the cohort being recent im/migrants (i.e., ≤5 years) and 13.8% being long-term im/migrants (i.e., >5 years) at baseline.

In bivariate GEE analyses over the 4-year period, elevated odds of unmet health needs were significantly associated with recent im/migration (odds ratio [OR] = 2.52; 95% confidence interval [CI] = 1.53–4.15), long-term im/migration (OR = 1.54; 95% CI = 1.00–2.37), police harassment including arrest (OR = 1.48; 95% CI = 1.13–1.94), and lifetime abuse/trauma (OR = 1.45; 95% CI = 1.10–1.92). Participants with a shorter duration in sex work (OR = 0.98; 95% CI = 0.97–1.00), who used non-injection drugs (OR = 0.64; 95% CI = 0.48–0.85), were living with HIV (OR = 0.55; 95% CI = 0.31–0.99), and experiencing unstable/transitional housing (OR = 0.74; 95% CI = 0.55–0.99) (Table 2) were less likely to experience unmet health needs.

In the final multivariable GEE model (Table 2), recent im/migration (adjusted odds ratio [AOR], 3.23; 95% CI = 1.93–5.40), long-term im/migration (AOR = 1.90; 95% CI = 1.22–2.96), police harassment including arrest (AOR = 1.57; 95% CI = 1.15–2.13), and lifetime abuse/trauma (AOR = 1.45; 95% CI = 1.05–1.99) remained significantly and independently associated with elevated odds of unmet health needs in the last 6 months.

Discussion

Our results reveal that recent and long-term im/migration, historical violence and trauma, and policing were linked to enhanced unmet health needs among SWs in Vancouver, Canada. Recent im/migration (≤5 years) to Canada had the strongest independent effect on unmet health needs among SWs, with a three-fold increased odds of unmet health needs as compared to non-migrants. Long-term im/

Table 1. Individual and socio-structural characteristics of sex workers ($n = 742$) who had unmet health needs in Metro Vancouver, BC at baseline, 2010–2014.

Characteristic	Total (%) ($n = 742$)	Unmet health needs: Yes (%) ($n = 97$)	Unmet health needs: No (%) ($n = 645$)	p value
Individual and interpersonal factors:				
Age (med, IQR)	35 (28–42)	34 (28–42)	35 (28–42)	.966
Gender/ sexual minority				
Yes	187 (25.2)	23 (23.7)	164 (25.4)	.717
No	555 (74.8)	74 (76.3)	481 (74.6)	
Indigenous				
Yes	261 (35.2)	32 (33.0)	229 (35.5)	.629
No	481 (64.8)	65 (67.0)	416 (64.5)	
Im/migration experience				
Recent (≤5 years)	78 (10.5)	18 (18.6)	60 (9.3)	.002
Long-term (>5 years)	102 (13.8)	16 (16.5)	86 (13.3)	.137
Non-migrant (ref)	531 (71.6)	56 (57.7)	475 (73.6)	
High school completion or greater				
Yes	397 (53.5)	52 (53.6)	345 (53.5)	.982
No	345 (46.5)	45 (46.4)	300 (46.5)	
Non-injection drug use*				
Yes	502 (67.7)	53 (54.6)	449 (69.6)	.003
No	240 (32.4)	44 (45.4)	196 (3.4)	
Injection drug use*				
Yes	291 (39.2)	27 (27.8)	264 (4.9)	.014
No	451 (60.8)	70 (72.2)	381 (59.1)	
HIV seropositivity				
Yes	81 (10.9)	6 (6.2)	75 (11.6)	.109
No	653 (88.0)	90 (92.8)	563 (87.3)	
Duration of SW, years (med, IQR)	10 (3–17)	5 (2–17)	10 (3–18)	.021
Socio-structural factors:				
Homeless*				
Yes	229 (30.9)	29 (29.9)	200 (31.0)	.825
No	513 (69.1)	68 (70.1)	445 (69.0)	
Currently in unstable/transitional housing				
Yes	507 (68.3)	56 (57.7)	451 (69.9)	.016
No	235 (31.7)	41 (42.3)	194 (3.1)	
Barriers to health care – poor treatment by health care professional*				
Yes	106 (14.3)	20 (20.6)	86 (13.3)	.056
No	636 (85.7)	77 (79.4)	559 (86.7)	
Primary place of service*				
Informal indoor venue	194 (26.2)	25 (25.8)	169 (26.2)	.242
Formal/in-call establishment	234 (31.5)	42 (43.3)	192 (29.8)	.005
Outdoor/public space (ref)	314 (42.3)	30 (30.9)	284 (44.0)	
Social Cohesion Scale (med, IQR)	0.2 (−0.5–0.9)	0.4 (–0.4–−1.2)	.1 (−.5–.9)	.084
Police harassment, including arrests*				
Yes	292 (39.4)	39 (40.2)	253 (39.2)	.854
No	450 (60.7)	58 (59.8)	392 (6.8)	
Arrested or charged for solicitation in public spaces*				
Yes	15 (2.0)	2 (2.1)	13 (2.0)	1.000
No	727 (98.0)	95 (97.9)	632 (98.0)	
Had been threatened/verbally assaulted by community residents or businesses*				
Yes	105 (14.2)	14 (14.4)	91 (14.1)	.932
No	637 (85.9)	83 (85.6)	554 (85.9)	
Any physical/ sexual violence by intimate partner*				
Yes	109 (14.7)	16 (16.5)	93 (14.4)	.590
No	633 (85.3)	81 (83.5)	552 (85.6)	
Lifetime trauma/abuse				
Yes	547 (73.7)	60 (61.9)	487 (75.5)	.004
No	195 (26.3)	37 (38.1)	158 (24.5)	

*All variables using last 6 months as reference point.

Table 2. Bivariate and multivariable GEE analyses of factors associated with unmet health needs of SWs ($n = 742$) in Metro Vancouver, 2010–2014.

	Unadjusted		Adjusted	
Characteristic	Odds ratio (95% CI)	*p* value	Odds ratio (95% CI)	*p* value
Individual and interpersonal factors				
Age (per year older)	0.99 (0.97–1.01)	.222		
Im/migration experience*				
Recent vs. none	2.52 (1.53–4.15)	<.001	3.23 (1.93–5.40)	<.001
Long-term vs. none	1.54 (1.00–2.37)	.049	1.90 (1.22–2.96)	.005
High school completion or greater*				
(Yes vs. no)	1.11 (0.81–1.51)	.517		
Duration of SW (per year increase)	0.98 (0.97–1.00)	.034		
Non-injection drug use†				
(Yes vs. no)	0.64 (0.48–0.85)	.003		
HIV seropositivity†				
(Yes vs. no)	0.55 (0.31–0.99)	.047		
Socio-structural factors				
Currently in unstable/transitional housing				
(Yes vs. no)	0.74 (0.55–0.99)	.039		
Primary place of service†				
Informal indoor vs. outdoor	0.97 (0.72–1.31)	.835		
Formal indoor vs. outdoor	1.45 (0.98–2.16)	.066		
Police harassment, including arrests†				
(Yes vs. no)	1.48 (1.13–1.94)	.004	1.57 (1.15–2.13)	.004
Had been threatened/verbally assaulted by community residents or businesses†				
(Yes vs. no)	1.42 (0.94–2.12)	0.093		
Lifetime trauma/abuse				
(Yes vs. no)	1.45 (1.10–1.92)	0.009	1.45 (1.05–1.99)	.023

*Time-fixed.
†Time-updated (serial measures at each study visit using last 6 months as reference point).

migration (>5 years) was also associated with an almost two-fold greater odds of unmet health needs. Our findings are consistent with conclusions drawn by Vancouver-based researchers who show connections between policing and workplace violence with reduced access to health services for SWs (Shannon et al., 2008, 2009). We are one of the first groups to examine unmet health needs within the context of im/migration experience among SWs.

The influence of recent and long-term im/migration on unmet health needs suggests the need for increased attention to barriers to health access faced by im/migrant SWs, which may arise from both im/migration-related barriers (e.g., language barriers, legal status) as well as the barriers faced by SWs more generally (e.g., stigma, criminalization). While some researchers have documented that immigrants typically report no difference or a decreased risk for unmet health needs in comparison with non-migrant populations (Chen & Hou, 2002; Wu et al., 2005), our findings are in line with international qualitative and epidemiological research elucidating the disruptive impacts of im/migration on health care access for marginalized women (Asanin & Wilson, 2008; Bauer, Rodriguez, Quiroga, & Flores-Ortiz, 2010; Campbell et al., 2012; Kalich et al., 2015; Marshall, Urrutia-Rojas, Mas, & Coggin, 2005; Nandi et al., 2008).

The effect of im/migration experience on unmet health needs of SWs (i.e., recent im/migration having a stronger effect) is likely related to changes in the social and structural determinants of health over time. For example, im/migrants may adopt health behaviors of the local-born population over time—with health profiles and health care access of im/migrants becoming more similar to non-migrants as the duration of residence in the destination country increases (Newbold, 2005b). Greater unmet health needs experienced by recent im/migrants may be explained by a combination of concerns regarding low socioeconomic status, precarious legal status and working conditions, loss of social networks, unstable housing, and language barriers (Allin et al., 2010; Newbold, 2005b; Dastjerdi, Olson, & Ogilvie, 2012; Mulvihill, Mailloux, & Atkin, 2001; Murray & Skull, 2005; Oxman-Martinez et al., 2005; Shannon et al., 2008).

Among im/migrant SWs, these inequities may be magnified by macrostructural determinants related to sex work, including stigma, discrimination, and criminalization of sex work (Goldenberg et al., 2014; Shannon et al., 2014). Specifically, institutional barriers that may affect obtainment of health services for im/migrant SWs include fear of disclosing sex work to health providers, foregoing care in order to continue earning income, denial or delay of public health insurance, high cost of private health insurance, and ineligibility for social assistance and subsidized housing (Anderson et al., 2015; Goldenberg, Duff, & Krusi, 2015; Oxman-Martinez et al., 2005). Not having a provincial health insurance card was strongly correlated with reporting institutional-level barriers to health care among SWs, as determined by a researcher in Vancouver (Socías et al., 2016). This is especially relevant among recent im/migrants awaiting the approval of provincial health insurance and those with precarious status (Caulford & D'Andrade, 2012).

Additionally, our findings may relate to shifting gendered power dynamics in relation to immigration status. Women who move to Canada are twice as likely to be classified as "dependent" immigrants (i.e., sponsored by spouse, family member, or employer who is required to financially support the duration of sponsorship) (Citizenship and Immigration Canada, Research and Evaluation Branch, 2014). Classification as a "dependent" immigrant may relate to specific health-related social determinants (e.g., financial or emotional dependence on partner) (Oxman-Martinez et al., 2005) that have been linked to increased barriers to accessing services and adverse effects on physical and mental health (Mulvihill et al., 2001). We recommend further research that investigates the intersections between legal status over the course of migration, unmet health needs, and health outcomes in order to examine how these dynamics change over time—for example, as im/migrant women improve their language abilities, build social networks, and potentially gain enhanced access to health care services.

Finally, our results illustrate the importance of the broader determinants of im/migrant and non-migrant SWs' unmet health needs, including lifetime violence/trauma and policing. Researchers studying SWs' health have documented that law enforcement approaches to sex work exacerbate HIV risk and barriers to health services by isolating

and displacing SWs, effectively pushing SWs away from accessible health and support services (Goldenberg et al., 2014; Shannon et al., 2008). For example, due to police activity, street-based SWs who inject drugs avoid health facilities and syringe exchange services, thereby interrupting treatment and prevention efforts (Aitken, Moore, Higgs, Kelsall, & Kerger, 2002; Shannon et al., 2008). Police presence has also been linked to SWs' mistrust of authorities and fear of arrest under criminalized sex work contexts that may then discourage obtainment of health services (Anderson et al., 2015; Kurtz, Surratt, Kiley, & Inciardi, 2005). Findings of our study reveal links between partner, client, and community-level violence to barriers and reduced access to health services (Shannon et al., 2008, 2009; Socías et al., 2016).

Recommendations

We found that the disruptive effects of im/migration may affect health care access, thus contributing to unmet health needs of im/migrant SWs. As such, we find it important to promote integrated health models that include community and social support services—strategies that enhance culturally appropriate, community-based delivery of health services for im/migrant SWs. Examples include SW-only drop-in centers and other low-threshold services tailored toward im/migrant SWs, as well as outreach to hard-to-reach women (e.g., recent and undocumented im/migrant SWs). Language-specific counselling and support services that address sexual, physical, and emotional abuse as a result of violence and trauma should be made available. We also recommend policy reform in the area of immigrant health to ensure that im/migrant women are connected to care upon arrival to Canada and receive continued care during the transitions of im/migration.

Additionally, attention to broader social determinants that shape health access for all SWs, at the macrostructural (i.e., criminalization and stigma of sex work) and work environment levels (i.e., violence, policing), is needed (Shannon et al., 2014). There is a continued call to remove punitive measures against SWs and clients (e.g., Protection of Communities and Exploited Persons Act in Canada) in order to increase support and implementation of health and social interventions for all SWs, as well as to improve police relations (Krusi et al., 2014).

Limitations

While researchers have previously established that health-seeking behaviors are different among individuals with different immigration statuses (Campbell et al., 2012), our analysis did not include information on legal immigration status due to limitations on currently available data. To achieve a more nuanced understanding of im/migrants' experiences in sex work, we recommend that future studies of unmet health needs and health access among im/migrant SWs should focus on changes in legal status over the course of migration.

A major strength of our study is the prospective longitudinal design and GEE analysis as it accounts for repeated measures by the same respondent. While our study

findings may not be fully generalizable to other sex work settings (e.g., settings without universal health care), our sample included SWs from a wide range of sex work environments, including street-based, indoor, and online spaces. Since our analysis included a series of sensitive topics (i.e., violence, trauma, drug use), cases of underreporting may have occurred as a result of social desirability bias. However, questionnaires were conducted in safe spaces by experiential (former and current SWs) and non-experiential outreach staff where a strong community rapport exists as a result of weekly outreach to outdoor and indoor sex work environments.

Conclusion

We found that im/migration experience has differential effects on unmet health needs of SWs and suggest that accessible and consistent health services during the early years of migration are crucial to ensure that SWs' health needs are met. Our findings underscore the importance of comprehensive structural interventions for both im/migrant and non-migrant SWs, including changes across immigration, health and sex work policy (e.g., decriminalization). At the community and institutional levels, cultural and language-specific health and support services should be made available for and developed in partnership with im/migrant SWs. While our study is situated in the Canadian context, findings have the potential to inform immigration policy that promote equitable and adequate access to health care in Canada and other immigrant-receiving countries.

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