Social Science & Medicine 211 (2018) 261–273

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Review article

The effect of mobility on HIV-related healthcare access and use for female sex workers: A systematic review

Calum Davey[a,*], Frances Cowan[b], James Hargreaves[a]

[a] London School of Hygiene and Tropical Medicine, London, UK
[b] Liverpool School of Tropical Medicine, Liverpool, UK

ARTICLE INFO

Keywords:
Sex work
Migration
Mobility
Healthcare
HIV

ABSTRACT

Female sex workers (FSW) experience a high HIV burden and are often mobile. FSW access to HIV-related healthcare is essential for equitable welfare and to reduce new HIV infections. We systematically reviewed the literature on mobility and HIV-related healthcare access and use among FSW. Outcome measures included: HIV/STI testing, STI treatment, PrEP (initiation or adherence), and ART (initiation or adherence). We summarised the results with a narrative synthesis. From 7417 non-duplicated citations, nine studies from Canada (3), Guatamala, Honduras (2), India, South Africa, and Vietnam were included. Only one of the studies was designed to address mobility and healthcare access, and only six reported adjusted effect estimates. Mobility was measured over four time-frames (from 'current' to 'ever'), as having lived or worked elsewhere or in another town/province/country. Three studies from Canada, Guatemala, and India found mobility associated with increased odds of poor initial access to healthcare (adjusted odds ratios (AOR) from 1.33, 95% CI 1.02, 1.75, to 2.27, 95% CI 1.09, 4.76), and one from Vietnam found no association (odds ratio (OR): 0.92, 95% CI 0.65, 1.28). The study from South Africa found no association with initiating ART (risk ratio: 0.86, 95% CI 0.65, 1.14). Two studies from Canada and Honduras found increased odds of ART interruption (AOR 2.74, 95% CI 0.89, 8.42; 5.19, 95% CI 1.38, 19.56), while two other studies from Canada and Honduras found no association with detectable viral load (OR 0.84, 95% CI 0.08, 8.33; AOR 0.79, 95% CI 0.41, 1.69). We found that mobility is associated with reduced initial healthcare access and interruption of ART, consistent with literature from the general population. Discordance between effects on adherence and viral load may be due to measurement of mobility. Future research should carefully construct measures of mobility and consider a range of HIV-related healthcare outcomes.

1. Background

Female sex workers have a high burden of HIV, including in countries with generalised epidemics (Baral et al., 2012). Achieving UNAIDS' 90:90:90 goal to 'end the AIDS epidemic by 2030' will require treatment programmes that include sex workers. Since a substantial proportion of the overall burden of HIV is sustained by sex-work networks (Alary and Lowndes, 2004), reaching female sex workers with effective antiretroviral therapy (ART) could also reduce prevalence in the general population (Grinsztejn et al., 2014). Mobility has been described as a "crucial aspect" of sex work (Siegel, 2011) (see for examples Ferguson and Morris, 2007; Duncan et al., 2010; Patel et al., 2016; Weir et al., 2012), but many programmes do not adequately address the needs of mobile sex workers (Wilson, 2015).

Controlling HIV in sex-work networks using prevention and treatment technologies requires regular contact with health services and social support (Gupta et al., 2008). In an era where highly-effective ART is available, access to quality healthcare may be as important for overall health of female sex workers as HIV prevalence, which has been the focus of most prior research. Equality of access to healthcare free from discrimination is a human right (Susser, 1993); however, sex workers are often denied care because of stigma, prosecution, and harassment (Wolffers and Beelen, 2003). Factors that negatively affect use of healthcare and allied services limit the ability to address health needs and reduce the transmission of HIV (Beyrer et al., 2015). Engagement with HIV-related healthcare has been conceptualised using care and prevention 'cascades'. The HIV care cascade is a model for the steps that people living with HIV should take to control the virus (Mountain et al. 2014b), which are: HIV testing and counselling, linkage to care, immediate ART provision, and adherence to treatment to achieve viral suppression (Giordano et al., 2005) – all of which can require social and psychological support (Chakrapani et al., 2009). The HIV 'prevention cascade' describes conditions needed to reduce the risk of HIV infection (Garnett et al., 2016). For female sex workers, who make a living by

* Corresponding author. London School of Hygiene and Tropical Medicine, 15-17 Tavistock Place, London, WC1H 9SH, UK.
E-mail addresses: Calum.Davey@lshtm.ac.uk (C. Davey), Frances.Cowan@lstmed.ac.uk (F. Cowan), James.Hargreaves@lshtm.ac.uk (J. Hargreaves).

https://doi.org/10.1016/j.socscimed.2018.06.017
Received 22 November 2017; Received in revised form 9 May 2018; Accepted 19 June 2018
Available online 20 June 2018
0277-9536/

having many sexual partners, controlling risk means knowing their status and being sufficiently informed, motivated, and supported to access and use technologies such as condoms or pre-exposure prophylaxis (PrEP) in a way that is non-stigmatising, non-discriminatory, convenient, and affordable (Hargreaves et al., 2016). Although primarily about access to and use of condoms, prevention can require access to healthcare for HIV testing, STI testing and treatment, and, increasingly, access to PrEP. Interventions can help create enabling conditions to support STI treatment (Saggurti et al., 2013), PrEP (Bekker et al., 2015) and interventions to reduce violence and increase self-efficacy in condom negotiation with clients (Kerrigan et al., 2015; Reza-Paul et al., 2012).

Mobile temporary migrants have been conceived of since the beginning of formal research on population movement. In 1885, Ravenstein wrote that "temporary migrants are an important class [who] constitute the floating element of the population" (Ravenstein, 1885). UNAIDS distinguishes between mobile and migrant populations (Joint United Nations Programme on HIV/AIDS, 2001): *mobile* populations move from one place to another, while *migrant* populations "take up residence or remain for an extended stay" (Joint United Nations Programme on HIV/AIDS, 2001). Put simply: being 'mobile' means to move; both migrants and non-migrants can be mobile. While migrants must have once moved, the movement may have been long in the past. The distinction between mobility and migration has also been made based on the intention to stay (Odimegwu and Kekovole, 2015), or as "the complement of permanent migration", mobility being any form of movement that is not permanent (Bell and Ward, 2000). Mobility has many dimensions, including the frequency, distance, transit mode, reason, seasonality, and duration of journeys (Brown and Bell, 2004). By these definitions, mobility includes "circulatory migration" (Zelinsky, 1971) as well as higher frequency movement for work (Cresswell et al., 2016; Haan et al., 2014; Williams et al., 2012), and unstable housing. To distinguish mobility from other non-permanent movement, such as commuting, mobility is often conceived of as involving at least one overnight stay (Smith, 1989). Thus defined, mobility is common: according to one estimate in India, for example, mobility is seven times larger than permanent migration nationally (Keshri and Bhagat, 2013). The distinction between mobility and migration has also been made in the study of sex work (Reed et al., 2012). While a substantial literature has focused on trafficking, for the purposes of this review, we do not included trafficking in the definition of mobility although we recognize that there can be difficulties making a clear distinction (Butcher, 2003; Loff and Sanghera, 2004). For deprived populations, neither mobility or stasis deserve an "unwarranted veneer of free choice" (Wood, 1982) from failure to recognize the importance of inequities that dictate degrees of mobility in, among other things: incomes, political freedoms, gender relations, and social capital (Hagen-Zanker, 2008; Massey et al., 1993).

Previous work on structural determinants of health for sex work has identified mobility and migrant status as determinants of HIV risk (Shannon et al., 2015). However, the association between mobility and HIV has been shown to be dependent on context (Deane et al., 2010). For example, a review of the sexual health and health related harms of migrant sex workers relative to non-migrant sex workers found that in low-income settings migrant status was associated with poorer health outcomes, but not in high-income settings (Platt et al., 2013). It is unclear how much migrant's mobility affected health risks, relative to the effects of migrant status, or how risks associated with HIV acquisition relate to risk associated with sex-worker access to healthcare. A recent review of sex-worker access to healthcare (ART use and adherence) did not identify migrant status or mobility as important cofactors (Mountain et al., 2014a). However, there is evidence that migrant status can influence use of healthcare by female sex workers; for example, Richter et al. found that cross-border-migrant sex workers in South Africa were approximately 40% less likely to have accessed services while being otherwise better educated and earning more money per client than local women (Richter, 2013; Richter et al., 2014). Migrant status is not equivalent to mobility, and the relationship between migrant status and mobility can be complex; for example, migrants may travel long distances to their country of origin while moving relatively infrequently over short distances within the destination country (Bartel and Koch, 1991; Jones and Murray, 1986). In contrast, migrants may experience higher levels of mobility than local populations because of weaker ties to specific places, higher job insecurity, and demographic differences such as younger age (Trevena et al., 2013). Migrant status and mobility cannot be used interchangeably for exploring effects on health and healthcare access.

For understanding healthcare access, various conceptual frameworks have been proposed (Ricketts and Goldsmith, 2005). The behavioural model conceptualises access to be determined by predisposing characteristics, enabling resources, and need at the contextual and individual level (Andersen, 1995). The model has been adapted for vulnerable populations and identifies mobility as a predisposing characteristic among the homeless (Gelberg et al., 2000). Mobility was not included in models of access to social safety net or ART among vulnerable groups in the US (Andersen et al., 2000; Davidson et al., 2004). Applications of the behavioural model have under-explored the role of context and the environment (Babitsch et al., 2012; Phillips et al., 1998), although the model has been updated to emphasize these factors (Andersen et al., 2013). An ecological perspective may be conceptually more consistent with the structural determinants of health frameworks developed for sex-worker health (Bronfenbrenner, 1979; McLeroy et al., 1988) (see for example Baral et al., 2013 for an application of the ecological model to HIV risk), and attempts have been made to combine this conceptually with the behavioural model (Ryvicker, 2017). A useful insight from the ecological perspective is that systems are operating a number of scales, and dynamically interact to define and change each other over time. This dynamism is helpful when considering mobility, which is dynamic by definition, in how it relates to and constructs other aspects of the system (e.g. risk environments in urban centres). Finally, another model of access can be helpful for thinking about how healthcare can respond to the mobility of the sex work population and the degree to which sex workers are able to accommodate the restrictions of the system (Penchansky and Thomas, 1981). The model proposes that access is the extent of the 'fit' between features of the healthcare system and the population of potential patients along five dimensions: availability, accessibility, accommodation of patients to the requirements of the services, affordability, and acceptability of both the services offered to the clients and also the client demographics to the service providers.

There are a number of ways that mobility could affect healthcare access and use among female sex workers that have been observed in other populations. The often-observed association between mobility and acquiring HIV (Brockerhoff and Biddlecom, 1999; Deane et al., 2010; Decosas et al., 1995; Parker et al., 2000) has been explained by "the situations encountered and the behaviours possibly engaged in during mobility" (Joint United Nations Programme on HIV/AIDS, 2001); likewise, the effects of mobility on healthcare use can be differentiated into those that occur before, during, and after moving (Gushulak and MacPherson, 2004). As recognised in the behavioural model, health status prior to moving will determine healthcare need. Healthcare use before moving may also affect how mobility influences on-going access. Structural, socioeconomic, conditions may affect resilience to the effects of moving, through the availability of savings, chronic mental health conditions, substance use, self-stigma associated with sex work, and social capital (Buttram et al., 2014). The reasons for moving and the ability to plan ahead may also be important, reflecting different individuals' predisposing factors and also the wider structural determinants of mobility. During the journey itself, treatment routines can be disrupted and safe spaces unavailable (Taylor et al., 2014), affecting the enabling environment for healthcare use by increasing the risk of disclosure and stigma. On arrival, the social context, such as the