Literature study: The effects of community empowerment on the health and human rights of sex workers, people who use drugs and LGBT people

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Executive summary

Background: Sex workers, people who use druse and LGBT people are at an increased risk of acquiring HIV compared to the general population. Social, legal and structural factors such as criminalization, stigma, discrimination, poverty and violence increase the vulnerability of these key populations and limit their access to HIV services. Evidence from practice as well as scientific literature shows that community empowerment is a promising approach in improving the health and human rights of these three key populations. The research question of this study was: What are the most effective community empowerment strategies for decreasing the HIV prevalence, increasing the access to HIV/STI-related services, and increasing the fulfillment of the human rights of sex workers, people who use drugs and LGBT people?

Methods: A systematic search strategy was used. Peer-reviewed articles were identified through database searching and grey literature was identified through manual searching.

Results: Of 405 records screened, 22 peer-reviewed articles and 11 grey literature reports met the inclusion criteria. Most studies were conducted in Asian countries, focused on female sex workers and combined several community empowerment strategies with non-community empowerment strategies such as outreach and clinical services. With regard to the HIV prevalence, the results were very inconclusive, with only 50% of the studies reporting a decrease in the HIV prevalence. Different reasons were given by the studies for not finding an effect, such as a small sample size, observational design, low coverage of the programme, lack of funding, lack of support, or police interference. Regardless of which and how many strategies were used, community empowerment was always found to be effective in increasing the access to HIV/STI-related services and increasing the fulfilment of human rights.

Conclusion: In conclusion, the greatest effect in HIV prevention is achieved when different community empowerment strategies are combined with outreach and clinical services. Especially among FSWs and Asian countries there is sufficient evidence to support the scale up of community empowerment interventions. Further rigorous research in the Eastern European and Sub-Saharan African regions, and research among PWUD and LGBT people, is needed.

1. Introduction

Human Immunodeficiency Virus (HIV) remains a serious global health challenge, affecting 36.7 million people worldwide and causing 2.1 million new infections each year (UNAIDS, 2016). Especially sex workers, people who inject drugs (PWID), transgender people, and men who have sex with men (MSM), are at an increased risk of acquiring HIV compared to the general population (UNAIDS, 2014; WHO, 2014). It is estimated that key populations and their sexual partners account for 40% to 50% of all new HIV infections among adults worldwide (WHO, 2014). Social, legal and structural factors such as criminalization, stigma, discrimination, poverty and violence increase the vulnerability of these key populations and limit their access to HIV services (UNAIDS, 2014; WHO, 2014). There is an increasing awareness that in order to end the HIV epidemic, a human rights and community-based response is needed (Barr *et al*., 2011; Beyrer *et al*., 2015). "Community actions are fundamental to combatting stigma, discrimination and raising awareness of HIV and human rights, and for delivering programmes for prevention, treatment, care and support." (UNAIDS & Stop AIDS Alliance, 2015).

One of the international HIV programmes that focuses on improving the health and human rights of three key populations (sex workers, people who use drugs (PWUD), and lesbian, gay, bisexual and transgender (LGBT) people) is the Bridging the Gaps (BtG) programme. BtG is an alliance of nine different expert organisations[1] and almost 80 local partner organisations in 14 countries. From 2011 to 2015, the first phase of the programme managed to reach more than one million people with HIV services, including health, legal, information and social services (Bridging the Gaps, 2015). The second phase of the programme, running from 2016 until 2020, focuses on three long-term goals: a strengthened civil society; increased fulfilment of the human rights of key populations; and improved sexual and reproductive health and rights (SRHR) and fewer HIV transmissions among key populations. A core principle of the programme is the empowerment of key population communities (Bridging the Gaps, 2015).

Since the early 1990s, community empowerment has become a central theme within health promotion (Israel *et al*., 1994; Laverack & Wallerstein, 2001). Community empowerment refers to the process by which communities are empowered to take control over their lives and environment to improve their life situations (Israel *et al*., 1994). In the current study, community empowerment is defined as "a collective process through which the structural constraints to health, human rights and well-being are addressed by [key populations] to create social and behavioural changes, and access to health services

[1] Aids Fonds, Afew International, COC, GNP+, Mainline, INPUD, ITPC, MSMGF, and NSWP.

to reduce the risk of acquiring HIV." (WHO, 2012, p.19). According to the World Health Organization (WHO), HIV/AIDS programmes are more effective and sustainable when they are carried out by empowered key population communities compared to programmes where key populations are just mere recipients of the programmes (WHO *et al*., 2013). Different strategies can be used to empower key population communities. The seven strategies most commonly found in literature and HIV prevention tools are: community mobilization, community-based needs assessment, community development, community-based service provision, capacity building, creating enabling legal and policy environments, and peer-led education (Dreier, 1996; Kerrigan et al., 2012; WHO et al., 2013; UNFPA et al., 2015).

- Community mobilization, also known as community collectivization, is the act of mobilizing key populations to collectively address the problems that affect their lives and communities (Dreier, 1996; WHO *et al*., 2013). Examples of community mobilizing efforts are the establishment of community-based organizations (CBOs) and peer groups, or organized gatherings.
- Different contexts may lead to different needs across key population communities, therefore, it is important that key populations collectively identify their needs by involving them as participants in needs assessments. This gives key population communities a voice, thus empowering them (referred to as 'community-based needs assessment' in this study). (WHO *et al*., 2013).
- Community empowerment in the context of HIV often also involves community-level efforts to improve the safety and infrastructure of an area by establishing drop-in centers and clinics ('community development'). The services which are then offered in these establishments, are referred to as 'community-based service provision'. The services aim to improve the lives and opportunities of key populations by providing social services such as counselling, skills training and empowerment workshops (Dreier, 1996; WHO, 2014).
- Capacity building, also known as capacity development, is aimed at strengthening the ability of a key population organization or community groups to manage themselves, by providing human resources (staff) and leadership training to the staff (UNFPA *et al.*, 2015).
- To reduce stigma and discrimination, key population communities can also be involved in activities that create an enabling legal and policy environment, such as advocacy and sensitization workshops for the police and government (WHO *et al*., 2013; UNFPA *et al*., 2015).
- Finally, peer-led education, often included in community outreach, is considered a more traditional community empowerment strategy and is aimed at reducing the vulnerability and HIV prevalence among key populations by increasing the awareness and knowledge of HIV and human rights (Kerrigan *et al.*, 2012).

Evidence from practice as well as scientific literature shows that community empowerment is a promising approach in improving the health and human rights of the three key populations (Kerrigan *et al*., 2013; Reed *et al*., 2013; Shaikh *et al*., 2016). Yet, a clear and comprehensive overview that synthesizes effective community empowerment strategies found in peer-reviewed literature and grey literature is still missing. An overview is essential, as it will provide HIV/AIDS programmes, such as BtG, with evidence-based strategies that can enhance the effectiveness of the programmes.

Thus, the current review aims to provide the BtG programme with a systematic overview of evidence-based community empowerment strategies found in peer-reviewed and grey literature that may support BtG to reach their long-term goals in the second phase of the programme. The research question is: What are the most effective community empowerment strategies for decreasing the burden of HIV/AIDS and stigma and discrimination of sex workers, PWUD and LGBT people?

2. Methods

2.1 Search strategy

A systematic search strategy was employed to gather peer-reviewed literature from three electronic databases: PubMed, Web of Science, and Scopus. In addition, grey literature was included through manual searching from primary sources such as reports from partners of BtG, UNAIDS, and WHO. Inclusion of grey literature provided a more comprehensive overview of different community empowerment strategies and their effects on key population communities.

2.2 Inclusion criteria

This section describes the different inclusion criteria. Based on these inclusion criteria, the search terms were formulated (Appendix A).

Types of studies

Studies with an experimental as well as observational study design were included.

Participants

Studies with the following participants, regardless of age and gender, were selected:

1. Sex workers
2. Lesbian, gay, bisexual and transgender (LGBT) people, including men who have sex with men (MSM)
3. People who use drugs (PWUD), including injecting drugs users as well as other drug-using populations

Interventions

The following strategies are most frequently mentioned in literature and studies that included these strategies were thus chosen to be included:

1. Community mobilization/collectivization
2. Community-based needs assessment
3. Community development
4. Community-based service provision
5. Capacity building

6. Creating an enabling environment (e.g. through advocacy)
7. Peer-led education

Context

BtG is active in 14 countries in Sub Saharan Africa, Eastern Europe, Central Asia and Southeast Asia. Studies conducted in any of these four regions were included. In addition, only studies were included that examined community empowerment strategies in the context of HIV/AIDS programmes, as only this context is relevant to the BtG programme.

Outcome variables

Based on the goals of the BtG programme, three outcome variables were considered as most important to be included. For this reason, studies that assessed these variables were included in this review:

1. HIV prevalence
2. Access to HIV/STI-related services
3. Fulfilment of human rights (stigma, violence, social entitlements, etc.)

2.3 Exclusion criteria

- Studies conducted in regions where the BtG programme is not active
- Studies of individual or organizational-level empowerment interventions
- Studies that focus on community involvement (though this can be a part of community empowerment, a separate literature review was already conducted on this topic)
- Studies that focus on interventions outside the field of HIV
- Non-English articles
- Reviews

2.4 Data collection and analysis

After the records were identified through database and manual searching, and duplicates were removed, the records were each screened for title and abstract. Records were excluded based on the above-mentioned inclusion and exclusion criteria. The full-texts of the remaining articles were then assessed for eligibility based on predefined quality criteria (Appendix B). Articles were excluded that did not meet the inclusion or quality criteria, and the final articles were then included in this review. Data

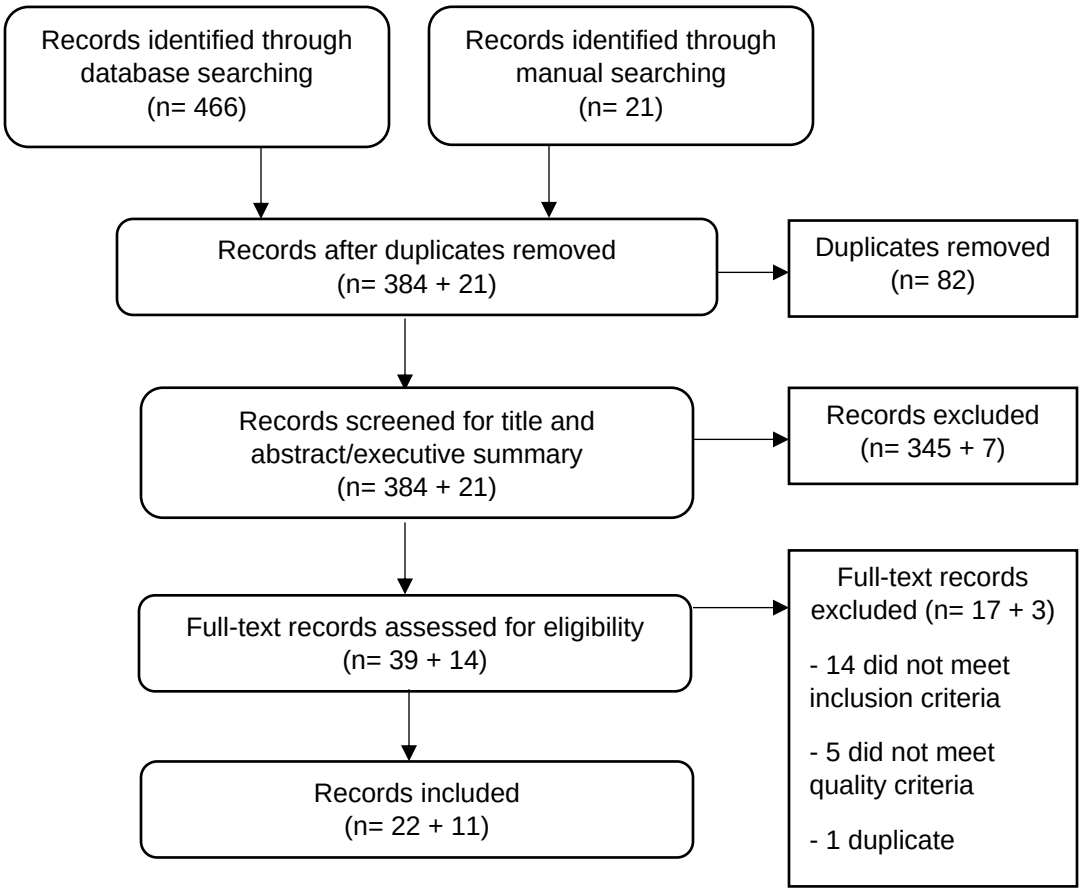
extraction of the included studies was conducted using a standardized data extraction form (Appendix C).

3. Results

3.1 The search results

Initial database searching identified 466 records; 21 records were identified through manual searching. After duplicates were removed, 384 articles and 21 reports remained for abstract and title screening, and 345 articles and seven reports were excluded based on the abstract/executive summary and/or title. After thoroughly reading the full-texts of the remaining 39 articles and 14 reports, 11 articles and three reports were excluded for not meeting the inclusion criteria; five articles did not meet de quality criteria; and one article was a duplicate. Finally, 22 articles and 11 reports were considered eligible for inclusion in the current study. Figure 1 presents the flowchart of the searching process.

Figure 1. Flowchart.[2]



[2] (n = … + …) Left number stands for 'records identified through database searching'; right number stands for 'records identified through manual searching'.

3.2 Peer-reviewed articles

Most studies had an observational design (n=21), including 17 cross-sectional studies, one case study, and three studies which made use of a mathematical model to estimate the averted HIV infections. Though the results of the latter are theoretical, they do provide valuable information to the BtG programme and were thus chosen to be included. One study had an experimental design which included a randomized controlled trial (RCT). An overview of the articles can be found in Appendix D (Table 1-4).

Sex workers

The majority of the included studies were related to sex workers (n=13). Of these studies, most were from India (n=10); one was from Kenya; one from Burkina Faso; and one study included data from Kenya, India and Ukraine. All of the included studies were conducted among female sex workers (FSWs). Table 1 in Appendix D provides an overview of the programmes targeted at sex workers, including a description of the strategies and results.

Especially in India, most programmes were comprehensive, usually employing several community empowerment strategies, such as community mobilization, advocacy, peer-led education and community-based service provision. Most studies (n=9) evaluated programmes in different districts and states that were funded by the Avahan Aids Initiative. Contrastingly, the programmes in the African countries and Thailand were mainly focused on peer-led education in combination with condom distribution and HIV/STI clinical services.

Most studies reported an increased access to HIV/STI-related services, reduced stigma and violence, increased fulfillment of human rights (through social entitlements), and reduced HIV prevalence among FSWs (Gurnani *et al*., 2011; Punyam *et al*., 2012; Kuhlmann *et al*., 2013; Beattie *et al.*, 2015; Isac *et al.*, 2015.; Traore *et al*., 2015). Some studies did find an increase in access to HIV/STI-related services, a reduction in violence, or an increase in other outcomes such as condom use, but did not find a decrease in HIV prevalence (Van Griensven *et al*., 1998; Luchters *et al*., 2008; Reza-Paul *et al*., 2008; Bhattacharjee *et al.*, 2013; Beattie *et al.,* 2014).

Fung *et al.* (2007), Vassall *et al.* (2014) and Wirtz *et al.* (2014) designed a mathematical model to estimate the averted HIV infections and all three studies concluded that community empowerment strategies are effective in preventing HIV infections among FSWs, at least in India, Thailand, Kenya and Ukraine. An important note is that these strategies were always modelled in combination with condom distribution and HIV/STI screening and treatment.

People who use drugs

Three articles related to PWUD were included, and all were conducted in Vietnam or in the China-Vietnam border region. One study was conducted among male and female IDUs; one among young men who were seen as potential drug users; and one among male and female drug users who used opioids, amphetamines and injections. Table 2 in Appendix D provides an overview of the programmes targeted at PWUD, including a description of the strategies and results.

Hammett *et al.* (2012) reported a significant decline in HIV prevalence and HIV incidence following a nine-year programme which combined peer-education and needle/syringe and condom distribution. Nguyen *et al.* (2015) evaluated a community mobilization programme, and found no difference in HIV prevalence between an intervention and control commune. Hayes-Larson *et al.* (2013) found that members of community-based groups displayed higher levels of well-being (such as self-reported safety) and access to healthcare than non-members. The researchers, however, did note that future studies are needed to determine if these outcomes are a result of membership.

LGBT people

Finally, five studies were related to LGBT people: two included transgender people, one included young MSM (YMSM), one included MSM, and one included transgender people and high risk MSM (HR-MSM). The majority of the articles were conducted in Asia (two in India, one in Thailand and one in Myanmar); one article was conducted in Eastern Europe (RCT in Hungary and Russia). Table 3 in Appendix D provides an overview of the programmes targeted at LGBT people, including a description of the strategies and results.

Most studies found increased access to HIV/STI-related services and lower HIV prevalence among LGBT people (Pawa *et al.*, 2013; Amirkhanian *et al.*, 2015; Shaikh *et al.,* 2016). Pawa *et al.* (2013) and Shaikh *et al.* (2016) both included peer-led education and community-based service provision in combination with condom distribution and HIV/STI testing and treatment. Amirkhanian *et al*. (2015) conducted a RCT and found that peer-led education through social networks of MSM is effective in preventing HIV.

One study did report a relatively high percentage of access to HIV/STI-related services and an increase/decrease in other outcomes such as condom use and syphilis prevalence, but not a decrease in HIV prevalence (Ramanathan *et al.,* 2014). Access to HIV/STI-related services did not increase in Myanmar (Aung *et al.*, 2017). No studies were included that measured stigma and violence or fulfillment of human rights.

Overall

Table 4 in Appendix D provides a clear overview of all the peer-reviewed articles and their effects. The first thing that stands out is that only the KHTP programme in India, founded by Avahan, uses a comprehensive community empowerment strategy with all seven strategies. All these studies found a positive effect on HIV prevalence, access to HIV/STI-related services, and fulfillment of human rights and stigma/violence. A more detailed description of Avahan is found in Case 1.

Interestingly, Reza-Paul *et al.* (2008) also evaluated five out of the seven strategies from a different Avahan programme, in combination with other strategies focused on STI testing and treatment, but did not find a significant effect on HIV prevalence. There are no clear differences in implementation, coverage or execution between Reza-Paul *et al.* (2008) and the other Indian studies which seem to explain this difference. Possibly, the design of the study influenced the outcome (Reza-Paul *et al.*, 2008).

Overall, studies which found no effect of community empowerment on HIV prevalence either had a relatively small sample size (Van Griensven *et al.,* 1998; Luchters *et al.*, 2008; Reza-Paul *et al.,* 2008), or they only assessed the effect of one or two community empowerment strategies on HIV prevalence (Bhattacharjee *et al*., 2013; Beattie *et al.*, 2014). Other reasons are also mentioned by the authors for not finding an effect. Possibly, due to the observational design of the studies, women may have acquired HIV before being exposed to the programme. Also, women who did not participate in the programme may have indirectly benefitted from the empowerment strategies, which could also explain why some studies found no difference between the intervention and control group. In the case of Nguyen *et al.* (2015), possibly no effect was found due to the fact that another organization implemented HIV/AIDS intervention activities in the comparison commune and in Ramanthan *et al.* (2014)'s case the time period of the intervention was probably too short to find an effect. Also in Van Griensven *et al.* (1998)'s case, regular police interference may have negatively impacted the effect of the programme.

Some articles that evaluated on one or two strategies did find an effect on HIV prevalence (Fung *et al.,* 2007; Hammett *et al.*, 2012; Wirtz *et al.*, 2014; Traore *et al.*, 2015; Amirkhanian *et al.*, 2015). However, it must be noted that the designs of these studies were very different compared to the others studies. The findings of Fung *et al.* (2007), Wirtz *et al.* (2014) and Traore *et al.* (2015) were based on modelled estimations; Amirkhanian *et al.* (2015) were the only one who had an experimental design and Hammett *et al.* (2012) had a large sample size and their intervention period was relatively long (9 years).

While the studies showed different results regarding HIV prevalence, the studies were all unanimous in their findings regarding access to HIV/STI-related services, fulfillment of human rights and stigma/violence/discrimination. The articles that examined these effects found that community empowerment, regardless of which and how many strategies used, was always effective in increasing the access to HIV/STI-related services, increasing the fulfillment of human rights and reducing stigma/violence/discrimination. Only Aung *et al.* (2007) found no significant effect on access to HIV/STI-

---------- Case 1 ----------

The Avahan AIDS Initiative, funded by the Bill & Melinda Gates Foundation, operates in 605 towns across six states in India. The programme has been running since 2003 and works alongside governmental agencies and more than 100 NGOs. The programme reaches about 200,000 FSWs, 60,000 MSM and 20,000 PWID with condoms, counselling, STI treatment and other medical services.

In the early stages of the programme, Avahan conducted extensive community-based needs assessments and ethnographic research to understand the social contexts of the key populations (Bill & Melinda Gates Foundation, 2008). Key populations were asked to participate in the needs assessments to point out their needs. In the later stages of the programme, community peer members carried out needs assessments themselves to tailor the services to the needs of the individual members.

It quickly became clear that alongside the traditional HIV prevention elements such as education and condom distribution, a human rights-based approach was needed that addressed the structural barriers which contribute to the vulnerability of key populations. It was decided that the most effective way to collectively challenge structural barriers such as stigma and discrimination, was to organize key populations into community-based organizations and support groups, and provide community member with skills training and empowerment workshops. STI clinics and drop-in centers were established where community members could meet and receive free STI testing and treatment. Peer educators and outreach workers among the community were recruited to reach key populations and educate them on their health and rights and. Community members also increasingly started becoming active in local advocacy activities and sensitization workshops for the police and government officials.

Due to the support of local governments and communities, and the adequate availability of financial resources, Avahan managed to scale up their services very quickly. The programme still manages to maintain this scale with the help of different partners and program-wide routine monitoring to ensure the quality of the interventions. One study estimated that all the Avahan programmes combined averted 100,178 HIV infections at the population level between 2003 and 2008 (Ng *et al.*, 2011).

related services, and this was probably because of a low coverage of the programme.

3.3 Grey literature

Eleven reports, covering seven different programmes in Myanmar, Thailand, Cambodia, South Africa, Zambia, Ukraine and Kyrgyzstan were considered eligible for inclusion. In some cases, two reports covering the same programme needed to be combined to get a complete overview of which strategies the programme used and what the effects were. Seven of the 11 publications (64%) were from non-government organizations; the other publications were from government-funded organizations. An overview of the grey literature and the effects can be found in Table 5 and Table 6 in Appendix D.

All programmes used several community empowerment strategies, in combination with other non-empowerment strategies such as STI care and treatment. Only one report evaluated the HIV prevalence and no reports evaluated the fulfillment of human rights or stigma/violence/discrimination among key populations. All reports evaluated how many people received or sought HIV/STI-related services. Almost all programmes reported positive as well as negative effects regarding access to HIV/STI-related services. The impact of each programme is shortly discussed below.

<u>TOP – Myanmar</u>

TOP is the main provider of HIV/STI-related services for FSWs and MSM in Myanmar, accounting for 50% of all services for FSWs and 100% of all services for MSM. Operating in over 18 cities across Myanmar, this programme uses community mobilization through peer support groups, capacity building by training FSWs and MSMs, drop-in centers that provide socializing and vocational training (community development and community-based service provision), advocacy and peer-led education. Also non-empowerment strategies such as condom distribution, clinical services and a microcredit programme are part of TOP. In the report, TOP reported that the HIV prevalence among FSWs and MSM decreased significantly between 2006 and 2011 (from 33% to 9.4% and from 28.8% to 7.8% respectively). Also, while provision of HIV/STI-related services was high, TOP reported that STI check-up and voluntary counselling and testing (VCT) remained low, due to the unreliable electricity supply in the drop-in centers.

<u>SAHACOM – Cambodia</u>

The SAHACOM programme operated from 2009 to 2014 in the Phnom Pen (capital city) and eight provinces in Cambodia. Between 2012 and 2013, the programme reached 39,217 people, including 214

PWID, 6,311 female entertainment workers (FEWs), and 5,020 MSM. The programme provided and facilitated community mobilization through peer support groups, vocational training in drop-in centers (community development and community-based service provision), technical and financial support to community organizations (capacity building) and peer-led education, in combination with HIV/STI testing and condom promotion through outreach. While access to HIV/STI-related services was high especially halfway during the programme, the proportion of FEWs and MSM that received an HIV test in the past 6 months was lower at the end of the programme compared to midline. The report gives several reasons for these declines. Firstly, one of the drop-in centers that provided peer education sessions and referred FEWS to health services was closed. Secondly, high mobility rates among FEWs made it difficult for the programme to reach this key population. Thirdly, during the fourth year of the programme, there were budget shortages which resulted in lack of HIV testing materials and a decrease in the number of community volunteers and outreach workers who are responsible for the HIV testing, peer education and referrals of FEWs and MSM to health services.

Corridors of Hope – Zambia

The Corridors of Hope programme operated from 2000 to 2009 in Zambia and was targeted at FSWs in border and transportation routes. The programme used community mobilization through peer support groups, community development, capacity building, and peer-led education in combination with VCT, condom and abstinence promotion, and distribution of information and education materials. The programme had a significantly positive effect on the proportion of FSWS reporting to have ever received a HIV test (increase from 14% in 2000 to 82% in 2009) and to have received their test results (increase from 7% in 2000 to 98% in 2009). No negative findings were reported. The report identified the peer educators and outreach workers, as well as the district management teams that managed the delivery of the services, to be invaluable to the success of the programme.

Tais Plus – Kyrgyzstan

Since 2000, the Tais Plus programme, targeted at female, male and transgender sex workers, has been operating in Bishkek (capital city) and surrounding areas in Kyrgyzstan. According to the included reports, Tais Plus uses all seven community empowerment strategies in combination with condom distribution, distribution of information and education materials, referrals to health services and a 24-hour telephone hotline for sex workers.

Since only few numbers are available, and most of these numbers are estimates, it is difficult to quantitatively describe the effects of the programme. In 2002, Tais Plus estimated that Bishkek had around 1700 sex workers. During the project's first year, 15% of all sex workers in the area were reached by the programme. It was estimated that, over the entire programme period, 80-90% of sex workers in Bishkek and surroundings have participated in the programme.

The programme also experiences some challenges. Due to high levels of stigma and discrimination it is especially difficult to reach male and transgender sex workers who are hidden. Also, due to limitations in funding by the Global Fund, the programme is only able to cover up to 60% of the safe sex supplies needs of sex workers.

NACOSA's MSM/LGBTI programme – South Africa

NACOSA's MSM/LGBTI (I=intersex) programme operated at 14 higher education institutions in South Africa between 2013 and 2016. The programme aimed to create a supportive environment for MSM/LGBTI students and staff on campus by establishing MSM/LGBTI friendly health services on the campuses. The programme used community mobilization through risk reduction gatherings and support groups, sensitization workshops for health care staff, and educative campus dialogues with the general campus community to create a supportive environment. These community empowerment strategies were combined with HIV counselling and testing on campuses, distribution of condoms and lubricants, and distribution of education and information materials.

Overall, the programme reached 7652 MSM/LGBTI students and staff members with HIV testing and/or other prevention services, which equaled 94% of the target output indicator. Output percentages did differ across universities, varying between 200% and 21% of the target. At some universities, the programme did not receive the institutional support that was required and thus failed to meet the target output indicator. In interviews, participants emphasized that the context of each university is different and programmes targeted at MSM/LGBTI people should be tailored to each unique context, starting with a needs assessment. Also, discrimination was still regarded as a barrier to seeking health care. To ensure future success, the report recommends that sensitization training should be extended to the general campus community and victims of discrimination should receive legal aid.

CHAMPION-IDU – Thailand

The CHAMPION-IDU programme in Thailand ran from 2009 to 2014 and was a large-scale peer-led project targeted at PWID across 19 provinces in Thailand. The programme provided community

development, capacity building, community-based service provision, advocacy, sensitization workshops and peer-led education, in combination with distribution of sterile injecting equipment and condoms, STI testing and treatment, referrals to HIV testing, and opioid substitution therapy. In total, 17,889 PWID were reached by the project and a total of 2,206,397 needles and syringes and 747,247 male condoms were distributed. Despite the success in reaching many PWID and providing access to HIV/STI-related services, the programme failed to meet many output target indicators based on Global Fund measurements, and was thus rated B2 (= inadequate but potential demonstrated). Overall, performance was structurally compromised by stigma and discrimination in health care settings and local communities, and regular arrests and harassments of clients and programme workers by law enforcement. There is, however, also criticism on the target indicators of the Global Fund. It has been argued that the targets are not suitable measures for the context of the CHAMPION-IDU programme, as they apply to enabling environments with supportive legislation, policies and strategies.

International Harm Reduction Development Programme – Ukraine

MAMA+, Krok za Krokom, Virtus, Unitus, Light of Hope & Open Door are gender responsive harm reduction programmes developed by the International Harm Development Programme in Ukraine. The six programmes focus on women who use drugs in 5 cities across the country. The programmes provide community mobilization through peer support groups, community development, community-based service provision, capacity building and advocacy, in combination with HIV and STI testing, referrals to HIV treatment and other medical care, substitution treatment for pregnant and parenting opiate user, education led by staff, and street outreach.

Since 2008, the 6 programmes have provided more than 4,500 female PWUD (about 5% of the estimated total female PWUD population) with HIV/STI and drug use-related services. Though the percentage of women reached isn't high compared to the total female PWUD population, according to the report the qualitative effects of the programme are considerable. Focus groups have shown that the women and staff are very satisfied with the programme and that the women who participated in the programme feel more empowered "to practice healthier behavior, access medical treatment, find housing and jobs, and avoid wrongful convictions" (IHRD, 2010, p. 33).

4. Discussion

This literature review aimed to answer the research question: What are the most effective community empowerment strategies for decreasing the burden of HIV/AIDS and stigma and discrimination of sex workers, PWUD and LGBT people? Based on the findings of this study, it can be concluded that not one community empowerment strategy is better than the other, but that a comprehensive approach that uses all seven strategies are is most effective in decreasing the burden of HIV/AIDS and stigma and discrimination among key populations. It must be noted that most studies evaluated a combination of strategies, and thus it can't be determined whether the strategies alone are effective as well. Only community mobilization alone was evaluated and was found to be effective among FSWs in increasing the access to HIV/STI-related services and increasing the fulfillment of human rights (Bhattacharjee *et al*., 2013; Kuhlmann *et al*., 2013; Beattie *et al.*, 2014).

The effectiveness of the other community empowerment strategies has only been proven when combined together, or combined with other non-empowerment strategies such as outreach and clinical services. It is not surprising that community empowerment strategies are mostly found to be combined. Community empowerment is often described as occurring in different stages, with community mobilization and community development often occurring in the earlier stages, followed by advocacy and capacity building in the later stages (Reza-Paul *et al.*, 2012; Moore *et al.*, 2014).

Especially with regard to HIV prevalence, the findings are very inconclusive. This inconclusiveness of the findings is caused by differences in study designs, contexts and other external factors, rather than indicating that certain strategies are ineffective. The peer-reviewed articles and grey literature do give different reasons for not finding a significant effect. While the peer-reviewed articles mostly point to the designs of the studies (e.g. observational design or small sample size) or low coverage/short duration of the interventions, the grey literature mostly refers to challenging environments (stigma and discrimination) or limitations in the programme itself (e.g. lack of supplies and/or financing). A follow-up study should look more into the factors that influence the effectiveness of community empowerment strategies.

Furthermore, community empowerment strategies are almost always combined with outreach and clinical services to increase the access to HIV/STI-related services. Therefore, it is not possible to say whether increased access to HIV/STI-related services is the direct consequence of the community empowerment strategies alone. When clinical services are offered by programmes the access to

HIV/STI-related services is undoubtedly higher, but as mentioned in the report by NACOSA (2016) and consistent with literature (Shahmanesh *et al.*, 2008; UNAIDS, 2010), offering clinical services doesn't always ensure that key populations feel empowered and safe enough to seek these services. Clinical services must be implemented in a supportive, enabling environment. Therefore, it can be concluded that a combination of providing clinical services as well as community empowerment is necessary to increase the access to HIV/STI-related services.

With regard to the fulfillment of human rights, and stigma and discrimination, empowering key population communities appears to have a significantly positive effect (Gurnani *et al.*, 2011; Punyam *et al.*, 2012; Hayes-Larson *et al.*, 2013; Kuhlmann *et al.*, 2013; Bhattacharjee *et al*., 2013; Beattie *et al.*, 2015). Unfortunately, no studies evaluated the effect of community empowerment on the fulfillment of human rights and/or decrease of stigma and discrimination among LGBT people; and no grey literature reports mentioned human rights and/or stigma and discrimination as outcome at all. Police interference, stigmatization and discrimination were often mentioned as external factors that challenged the effectiveness of the programmes (NSWP, 2014; PSI Thailand, 2015; NACOSA, 2016). As recommended by UNAIDS (2010), programmes ought to therefore pay particular attention to stigma and discrimination and violation of human rights, and the lack of attention to these matters and the mentioned challenges, confirms that this is indeed strongly needed.

The findings of this study should be interpreted with some caution due to several limitations. Firstly, the findings of this study are mostly based on studies with an observational design and descriptive reports. Only one RCT was included in this study. There is a clear need for more experimental studies to draw firmer conclusions regarding the effectiveness of community empowerment strategies. Secondly, most articles and reports were related to FSWs, which makes it difficult to point out clear differences between the three key populations. In addition, all peer-reviewed articles on PWUD and LGBT were conducted in Asian or Eastern European countries. This is not due to a lack of projects in Africa, but rather due to a lack of evaluation of these projects (Moore *et al.*, 2014). Moreover, the included projects in Africa have mostly implemented early stage community empowerment strategies such as community mobilization and community development. This is also consistent with literature (Moore *et al.*, 2014).

In conclusion, it can be suggested that the greatest effect is achieved when different community empowerment strategies are combined with outreach and clinical services. Especially among FSWs and Asian countries there is sufficient evidence to support the scale up of community empowerment

interventions. Further rigorous research in the Eastern European and Sub-Saharan African regions, and research among PWUD and LGBT people, is needed.

Lessons learnt for the BtG programme:

- A holistic approach that empowers key population communities through all seven strategies and that also provides outreach and clinical services will potentially have the greatest effect in decreasing the burden of HIV/AIDS and stigma and discrimination among key populations.
- It is important to adapt the programme to each specific country and context, since different contextual factors can influence the effectiveness of a programme.
- A high coverage and long duration of a programme will increase the chances of finding an effect.
- Baseline measurements should be conducted before starting a new programme. Currently, many evaluations lack baseline measurements and this makes it difficult to draw firm conclusions regarding the effectiveness of programmes.
- The fulfillment of humans rights and reduction of stigma, discrimination and violence should be included more as outcome measure, especially among LGBT people.
- A health and human rights-based approach is needed to overcome structural barriers such as stigma and discrimination. It is especially important to create an enabling environment through advocacy and sensitization workshops for service providers, police, and government officials.
- To reach target goals, it is essential to have adequate financial support.

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Appendix A – Search terms

These are the search terms that were used in PubMed. In Scopus and Web of Science, the same search terms were used, except for the mesh terms.

Populations	
Sex workers	"sex work*" OR "Sex Work"[mesh] OR "Sex Workers"[mesh] OR "prostitute*"
LGBT community	"Men who have sex with men" OR "MSM" OR "Homosexuality, male"[mesh] OR "Homosexuality, female"[mesh] OR "homosexual*" OR "gay*" OR "lesbian*" OR "bisexual*" OR "LGBT*" OR "Sexual Minorities"[mesh] OR "Transgender Persons"[mesh] OR "transgender*" OR "transsexual*"
People who use drugs	"people who use drugs" OR "PWUD" OR "drug use*" OR "drug abuse*" OR "drug addict*" OR "injecting drug user*" OR "drug dependence" OR "Drug Users"[mesh] OR "people who inject drugs" OR "PWID"
Intervention	
Community empowerment	"community empowerment" OR "community strengthening" OR "community-based organizing" OR "community organizing" OR "community-led needs assessment" OR "community development" OR "community development" OR "community-based service provision" OR "community service provision" OR "community service delivery" OR "leadership development" OR "leadership training" OR "strategic planning" OR "network building" OR "strengthening network*" OR "network empowerment" OR "network intervention*" OR "community network*" OR "Community Networks/organization and administration"[mesh] OR "Peer Group"[mesh] OR "peer support" OR "Social support"[mesh] OR "community mobilization" OR "community collectivization" OR "capacity building" OR "Capacity Building"[mesh] OR "Consumer Advocacy"[mesh] OR "advocacy" OR "enabling environment" OR "peer education" OR "peer-led education" OR "peer health education"
Context	
HIV/AIDS programmes	("HIV" OR "HIV/AIDS" OR "AIDS" OR "HIV/STD") AND ("intervention*" OR "prevention*" OR "program*" OR "programme*")
Countries/regions	"Africa South of the Sahara" OR "Sub-Saharan Africa" OR "Cameroon" OR "Central African Republic" OR "Chad" OR "Congo" OR "Democratic Republic of the Congo" OR "Equatorial Guinea" OR "Gabon" OR "Burundi" OR "Djibouti" OR "Eritrea" OR "Ethiopia" OR "Kenya" OR "Rwanda" OR "Somalia" OR "South Sudan" OR "Sudan" OR "Tanzania" OR "Uganda" OR "Angola" OR "Botswana" OR "Lesotho" OR "Malawi" OR "Mozambique" OR "Namibia" OR "South Africa" OR "Swaziland" OR "Zambia" OR "Zimbabwe" OR "Benin" OR "Burkina Faso" OR "Cape Verde" OR "Cote d'Ivoire" OR "Gambia" OR "Ghana" OR "Guinea" OR "Guinea-Bissau" OR "Liberia" OR "Mali" OR "Mauritania" OR "Niger" OR "Nigeria" OR "Senegal" OR "Sierra

	Leone" OR "Togo" OR "Eastern Europe" OR "Albania" OR "Baltic States" OR "Estonia" OR "Latvia" OR "Lithuania" OR "Bosnia and Herzegovina" OR "Bulgaria" OR "Croatia" OR "Czech Republic" OR "Hungary" OR "Kosovo" OR "Macedonia" OR "Moldova" OR "Montenegro" OR "Poland" OR "Belarus" OR "Romania" OR "Russia" OR "Bashkiria" OR "Dagestan" OR "Moscow" OR "Tatarstan" OR "Serbia" OR "Slovakia" OR "Slovenia" OR "Ukraine" OR "Transcaucasia" OR "Armenia" OR "Azerbaijan" OR "Georgia" OR "Central Asia" OR "Kazakhstan" OR "Kyrgyzstan" OR "Tajikistan" OR "Turkmenistan" OR "Uzbekistan" OR "Western Asia" OR "Bangladesh" OR "Bhutan" OR "India" OR "Sikkim" OR "Nepal" OR "Pakistan" OR "Sri Lanka" OR "South East Asia" OR "Borneo" OR "Brunei" OR "Cambodia" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Mekong Valley" OR "Myanmar" OR "Philippines" OR "Singapore" OR "Thailand" OR "Timor-Leste" OR "Vietnam" OR "Birma"
Outcomes	
HIV infections	"HIV Infections/transmission"[mesh] OR "HIV Infections/epidemiology"[mesh] OR "HIV infection*" OR "HIV incidence*" OR "HIV prevalence*" OR "HIV transmission*"
Access to HIV services	"access to HIV*" OR "access to AIDS*" OR "health service access" OR "access to ART" OR "Health Services Accessibility"[mesh]
Improved human rights	"human rights" OR "sexual rights" OR "sexual and reproductive health and rights" OR "entitlement*"
Reduced violence/stigma/ discrimination	"violence*" OR "Sex Offenses"[mesh] OR "violation*" OR "discrimination*" OR "victimization*" OR "stigma*"

Appendix B – Full-text quality criteria

1. Check again if the full-texts meet all the inclusion/exclusion criteria as described in the methods section.

2. Answer the following validity questions. If most (5 or more) of the answers to the questions are 'No', the article or report should be excluded.

Was the research question well formulated and clear? - Is the intervention/strategy specified? - Are the outcome(s) clearly indicated? - Is the target population and setting specified?	Yes	No
Was the selection of participants free from bias? - Are inclusion/exclusion criteria specified? - Are demographics and other characteristics specified? - Were participants a representative sample of the relevant population?	Yes	No
Were the methods well described? - Were the programme, types of strategies used and study setting described? - Was the intensity and duration of the strategies used sufficient to produce a meaningful effect? - Was the amount of exposure, and if relevant, subject compliance measured? - Were co-interventions (e.g. other strategies) described?	Yes	No
Was the method of handling withdrawals specified? - Are the number and characteristics of withdrawals described?	Yes	No
Were outcomes clearly defined and the measurements valid and reliable? - Were outcomes described and relevant to the research question? - Was the duration of the study long enough for important outcome(s) to occur? - Were the observations and measurements based on standard, valid and reliable data collection instruments/procedures? - Were other factors accounted for that could influence outcomes?	Yes	No
If applicable: Was the statistical analysis appropriate for the study design and outcome measures? - Were statistical analyses adequately described? - Were correct statistical tests used and assumptions not violated? - Were statistics reported with levels of significance and/or confidence intervals? - Were adequate adjustments made for effects of confounding factors that might have affected the outcomes? - If negative findings, was a power calculation reported to address type 2 error?	Yes	No
Are the conclusions supported by the results and are limitations taken into account? - Is there a discussion of findings? - Are biases and limitations identified and discussed?	Yes	No
Is bias due to the study's funding or sponsorship unlikely? - Were sources of funding and investigators' affiliations described? - Was there no apparent conflict of interest?	Yes	No

Appendix C – Data extraction form

Study ID:	**Study design:**	**Date form completed:**
First author:	**Year of study:**	**Funding source:**
Title:		
Publication type: ☐ Journal Article ☐ Report ☐ Other (specify e.g. book chapter) _____		
Country/region of study:		
Population:		
Setting (programme, location and cultural context):		
Participant recruitment methods:		
Inclusion criteria:		
Exclusion criteria:		
Description of community empowerment strategy(ies):		
Duration of intervention:		
Methods:		
Outcome measures:		
Data on withdrawals or missing data:		
Most important results:		
Limitations:		
Conclusion of the study:		

Appendix D. Data extraction tables.

Table 1. Peer-reviewed studies of sex workers.

Author + Title	Study setting, intervention and population	Methods	Assessed community empowerment strategy/ies --- Other intervention components	Outcomes
Gurnani *et al.* (2011) An integrated structural intervention to reduce vulnerability to HIV and sexually transmitted infections among female sex workers in Karnataka state, south India.	Karnataka state, South India. The Karnataka Health Promotion Trust (KHTP), part of Avahan, the India AIDS initiative, is a comprehensive HIV programme with 83 project sites across 20 districts in Karnataka State. FSWs.	Data was examined from routine programme management information systems (2007-2009) in 18 districts and from daily monitoring of newspapers in Karnataka (2005-2008).	▪ Community mobilization ▪ Needs assessment workshops ▪ Capacity building, including leadership training ▪ Establishment of STI clinics and drop-in centers (community development) ▪ Community-based service provision (includes spokesperson training, legal empowerment workshops, social entitlement workshops, support from crisis management teams) ▪ Advocacy ▪ Police sensitization workshops ▪ Peer-led education --- ▪ Condom distribution ▪ Establishment of District AIDS committees	▪ Since 2004, >88,000 FSWs have accessed a STI clinic. ▪ Proportion of negative news focusing on criminal activities, violence, raids and arrests against FSWs decreased from 11% in 2006 to 4% in 2008. ▪ Between January 2007 and October 2009, 4600 rights violations were reported, and the programme supported FSWs to redress 92% of these reports. ▪ 27,355 (59%) FSWS successfully received social entitlements by the end of 2009.
Isac *et al.* (2015) Changes in HIV and syphilis prevalence among female sex workers from three serial cross-sectional surveys in Karnataka state, South India.	Karnataka state, South India. KHTP programme. FSWs.	7015 FSWs from 5 districts participated in 3 rounds of so-called integrated biological and behavioral assessments (IBBAs) between 2004 and 2011.	Not much detail provided, but main elements were: ▪ Community mobilization ▪ Advocacy ▪ Peer-led education Reference is made to Gurnani *et al.* (2011).	HIV prevalence declined significantly from rounds 1 to 3, from 19.6% to 10.8% ($p<0.001$), although reductions among new sex workers (in sex work for less than 2 years) were not statistically significant. (Condom use did increase significantly).

Beattie *et al.* (2014) Community Mobilization and Empowerment of Female Sex Workers in Karnataka State, South India: Associations With HIV and Sexually Transmitted Infection Risk.	Karnataka state, South India. KHTP programme. FSWs.	3909 FSWs from 4 districts participated in 2 rounds of behavioral--biological surveys (IBBAs) conducted in 2008 and 2011. *High CM exposure*: member of peer group or collective *Medium CM exposure*: attended an NGO meeting or drop-in center clinic *Low CM exposure*: none of the preceding actions took place	Community mobilization (CM) activities included: ▪ FSWs mobilized ▪ Peer educators recruited ▪ Drop-in centers established ▪ FSW peer groups and collectives formed ▪ Advocacy and violence reduction activities ▪ Community-based organizations formed	At the district level, there were no clear trends between exposure to CM and prevalence of HIV or STI. Also when the data of the 4 districts was pooled, no significant association between different levels of exposure to CM and HIV prevalence was found. There were strong associations between exposures to CM activities and uptake of HIV or STI services, with women with low exposure being significantly less likely to have accessed HIV or STI services than women with medium or high exposure.
Beattie *et al.* (2015) Declines in violence and police arrest among female sex workers in Karnataka state, south India, following a comprehensive HIV prevention programme.	Karnataka state, South India. KHTP programme. FSWs.	5792 FSWs from 4 districts participated in 3 rounds of IBBAs conducted between 2005 and 2011. Four rounds of polling booth surveys (PBS) were conducted among 15,813 FSWs in 16 of the 20 KHPT districts between 2007 and 2011, including in the four IBBA districts.	Key components of the intervention included: ▪ Mobilization of FSWs ▪ Supporting the poorest FSWs to access state benefits and entitlements (community-based service provision) ▪ Violence prevention programme, which included human rights workshops for FSWs (community-based service provision) ▪ Advocacy Reference is made to Gurnani *et al.* (2011).	Over time, there were significant reductions in the percentages of FSWs reporting being raped in the past year (30.0% in 2007, 10.0% in 2011, $p<0.001$), being arrested in the past year ($p=0.025$) and being beaten in the past six months by a non-partner (clients, police, pimps, strangers, rowdies; $p=0.024$).
Bhattacharjee *et al.* (2013) Understanding the role of peer group membership in reducing HIV-related risk and vulnerability	Karnataka state, South India. KHTP programme. FSWs.	1750 FSWS from 5 districts participated in a behavioral tracking survey (BTS) conducted in 2010 and 4699 FSWs from 5 districts participated in 2 rounds of IBBAs conducted between 2005 and 2009. Also, focus	Peer groups (community mobilization)	FSWs who were members of a peer group reported significantly less experience of violence in the past six months (19.7 vs. 28.2%), and were more likely to have obtained at least one formal identification document (social entitlement) in the past five years (67.6 vs. 61.6%),

among female sex workers in Karnataka, India.		group discussions were conducted with the FSWs to better understand their perceptions regarding membership in peer groups		compared to non-members. No significant difference was observed in forced sex in past year or HIV prevalence. In focus group discussions, group members indicated that they had more confidence in dealing with situations of forced sex and violence.
Vassall *et al.* (2014) Community Mobilisation and Empowerment Interventions as Part of HIV Prevention for Female Sex Workers in Southern India: A Cost-Effectiveness Analysis.	Karnataka state, South India. KHTP programme. FSWs.	This study used data from IBBAs conducted in 2 districts by Beattie et al. (2014). Incremental impact, in terms of HIV infections averted, was estimated using a mathematical HIV transmission model.	▪ Community mobilization activities, including FSW peer groups and FSW conventions ▪ Establishment of drop-in centers (community development) ▪ Legal empowerment sessions (community-based service provision) ▪ Capacity building, including leadership training ▪ Advocacy ▪ Sensitization workshops for local leaders, youth organizations and secondary stakeholder ▪ Peer-led education --- ▪ Condom distribution ▪ STI testing & treatment	The study estimated that the incremental mean (standard deviation, sd.) impact of community mobilisation and empowerment is 1,256 (308) HIV infections averted in Belgaum, and 2,775 (1,260) HIV infections averted in Bellary in the first seven years of the intervention compared to a situation where no CM and empowerment activities were present.
Reza-Paul *et al.* (2008) Declines in risk behaviour and sexually transmitted infection prevalence following a community-led HIV preventive intervention among female sex workers	Mysore, Karnataka state, South India. Programme supported by Avahan. FSWs.	Two IBBAs among random samples of FSW in Mysore City were conducted 30 months apart, in 2004 and 2006. 429 FSWs participated in the survey at baseline and 425 at follow-up.	▪ Community mobilization ▪ Peer-mediated outreach, which addressed difficulties reported by the sex workers and promoted a community among the sex workers (needs assessment) ▪ A drop-in center was established (community development) ▪ 24-h Crisis response teams (community-based service	Compared with baseline, HIV prevalence remained stable (26% versus 24%) in the 6-30 months following the community-level intervention, but in multivariate analysis there was a reduction in HIV prevalence in FSWs who reported not having a regular partner. (However, condom use did increase and STI prevalence declined).

in Mysore, India.			provision) ▪ Advocacy --- ▪ Social marketing of condoms ▪ Sexual health services	
Punyam *et al.* (2012) Community advocacy groups as a means to address the social environment of female sex workers: a case study in Andhra Pradesh, India.	Andhra Pradesh state, South India Programme not mentioned but most likely Avahan. FSWs.	Data were used from a cross-sectional survey conducted in 2010-2011 among 1986 FSWs and 104 NGO outreach workers from 5 districts of Andhra Pradesh. The presence of active community advocacy groups (CAGs) was defined as the presence of an active committee or advocacy group in the area.	▪ Training of FSWs in communication and advocacy skills (capacity building) ▪ Advocacy	Areas with active CAGs compared with neutral areas had a significantly higher mean number of FSWs linked to ration cards (12.8 vs 6.8; p<0.01), bank accounts (9.3 vs 5.9; p¼0.05) and health insurance (13.1 vs 7.0; p¼0.02). A significantly higher percentage of FSWs from areas with active CAGs as compared with others reported that the police treat them more fairly now than a year before (79.7% vs 70.3%; p<0.05) and the police explained the reasons for arrest when arrested the last time (95.7% vs 87%; p<0.05).
Kuhlmann *et al.* (2013) Investing in Communities: Evaluating the Added Value of Community Mobilization on HIV Prevention Outcomes Among FSWs in India.	Andhra Pradesh state, South India. Programme supported by Avahan. FSWs.	This study evaluated the added benefit of community mobilization on HIV prevention outcomes among female sex workers (FSWs) using a composite measure of volunteer participation in program committees by FSWs. Multilevel structural equation modeling (MSEM) used the data from Punyam *et al.* (2012).	Community mobilization	Community mobilization was positively associated with levels of collective efficacy among FSWs, which in turn was associated with increased perceptions of fair treatment in public places such as banks, hospitals, and post offices.
Fung *et al.* (2007) Modelling the impact and cost-effectiveness of the	Ahmedabad, Gujarat State, West India. Jyoti Sangh HIV prevention	A dynamic mathematical model was used with survey and intervention-specific data from Ahmedabad to estimate the HIV impact of	▪ Peer-led education --- ▪ Outreach ▪ Condom distribution ▪ STI testing & treatment	Over 51 months, projections suggest that the intervention averted 624 HIV cases among the CSW. This relates to a 54% decrease in the HIV infections that

HIV intervention programme amongst commercial sex workers in Ahmedabad, Gujarat, India.	programme. Commercial sex workers (most likely female).	the Jyoti Sangh project for the 51 months between the two CSW surveys.		would have occurred among the CSWs without the intervention. In the absence of intervention, the model predicts that the HIV prevalence among the CSWs in 2003 would have been 26%, almost twice that with the intervention.
Van Griensven *et al.* (1998) Evaluation of a targeted HIV prevention programme among female commercial sex workers in the south of Thailand.	Sungai Kolok, South Thailand. HIV prevention programme. FSWs.	A pretest-post-test comparison group study was carried out in Sungai Kolok and Betong between June and December 1994. In June 408 CSWs were entered in Sungai Kolok (the intervention area) and 343 CSWs were enrolled in Betong (the comparison area). In December 1994, 416 women were enrolled in Sungai Kolok and 342 in Betong. Of these women 37% (n=283) also participated in the June survey. All women completed an oral interview and blood samples were collected for HIV serology.	▪ Peer-led education --- ▪ Informational and educational campaign (audio and video material, leaflets) ▪ Condom distribution	With regard to HIV, the pretest prevalence was around 20% in both locations. While a slight decrease was observed (to 18%) in Sungai Kolok, the HIV prevalence in Betong increased to 23%, but this was not significant. Also the HIV incidence (≈4.2 per 100 women years) was the same in both study locations at follow-up.
Luchters *et al.* (2008) Impact of five years of peer-mediated interventions on sexual behavior and sexually transmitted infections among female sex workers in Mombasa, Kenya.	Mombasa, Kenya. Peer-mediated FSW intervention (IMPACT project). FSWs.	A pre-intervention survey in 2000, recruited 503 FSWs. In 2005, data from 506 FSWs were collected using identical survey methods, allowing comparison with historical controls, and between FSW who had or had not received peer interventions. Though not specifically mentioned, most likely IBBAs.	▪ Peer-led education ▪ Peer educators also led monthly community gatherings with active participation of FSW, youth and other community members (community mobilization) --- ▪ Condom distribution ▪ Voluntary counselling and testing services (VCT)	Though not significantly different, HIV prevalence was 25% (17/69) in FSW attending ≥ 4 peer-education sessions, compared with 34% (25/73) in those attending 1–3 sessions (p=0.21). Overall HIV prevalence was 30.6 (151/493) in 2000 and 33.3% (166/498) in 2005 (p=0.36). (Condom use did increase significantly).
Traore *et al.* (2015)	Ouagadougou,	Between September 2009	▪ Peer-led education	No participant seroconverted for

Table 2. Peer-reviewed studies of people who use drugs (PWUD).				
HIV prevention and care services for female sex workers: efficacy of a targeted community-based intervention in Burkina Faso.	Combined intervention approach, consisting of prevention and treatment elements and peer-education. FSWs.	researchers conducted a prospective, interventional cohort study of 321 FSWs (accounting for 409 person-years) aged 18 to 25 years in Ouagadougou, with quarterly follow-up for a maximum of 21 months. At each visit, behavioural characteristics were collected and HIV, HSV-2 and pregnancy were tested.	▪ Condoms and hormonal contraceptives distribution ▪ Free general medical and HIV care (for those HIV infected at screening or seroconverting within the study period) ▪ Free provision of STI syndromic management	years), whereas the expected modelled number of HIV infections were 5.05/409 person-years (95% CI, 5.015.08) or 1.23 infections per 100 person-years (p=0.005). This null incidence was related to a reduction in the number of regular partners and regular clients, and by an increase in consistent condom use.
Wirtz *et al.* (2014) Epidemic Impacts of a Community Empowerment Intervention for HIV Prevention among Female Sex Workers in Generalized and Concentrated Epidemics.	Kenya, Thailand, Brazil and Ukraine. Community-empowerment based HIV prevention. FSWs.	The Goals projection model was applied to the selected case countries. Modelling scenarios included expansion of the comprehensive community empowerment-based HIV prevention intervention from baseline coverage over a 5-year period (5–65% in Kenya and Ukraine; 10–70% in Thailand and Brazil), while other interventions were held at baseline levels. Data inputs for selected countries were derived from the most recent and quality data available from population studies, UNGASS or UNAIDs country reports, surveillance reports, and country expert opinion if data were unavailable.	Not very detailed. The article mentions community mobilization, collective action to address social and structural factors related to sex worker rights (advocacy?) and community-led peer education as elements.	Optimistic but feasible coverage (65%–70%) of the intervention demonstrated a range of impacts on HIV: 220 HIV infections averted over 5 years among sex workers in Thailand, 1,830 in Brazil, 2,220 in Ukraine, and 10,800 infections in Kenya. Impacts vary by country, influenced by HIV prevalence in risk groups, risk behaviours, intervention use, and population size.

Table 3. Peer-reviewed studies of LGBT people.				
	intervention and population		empowerment strategy/ies --- Other intervention components	
Hammett *et al.* (2012) Controlling HIV Epidemics among Injection Drug Users: Eight Years of Cross-Border HIV Prevention Interventions in Vietnam and China.	China-Vietnam border region: Lang Son and Ha Giang, Vietnam and Ning Ming County (Guangxi), China. Cross-Border HIV Prevention Project. Male/female IDUs.	Evaluation employed serial cross-sectional surveys of 5695 IDUs distributed over 26 survey waves from 2002 to 2011, including interviews and HIV testing.	▪ Peer-led education --- ▪ Needle/syringe distribution ▪ Condom distribution	Significant reductions were found in drug-related risk behaviors and sharp reductions in HIV prevalence among IDUs (Lang Son from 46% to 23% [p,0.001], Ning Ming: from 17% to 11% [p=0.003], and Ha Giang: from 51% to 18% [p,0.001]). Reductions were not experienced in other provinces without interventions.
Nguyen *et al.* (2015) Community Mobilization to Reduce Drug Use, Quang Ninh, Vietnam.	Urban commune in Quang Ninh, Northern Vietnam. Community mobilization-based drug use prevention programme. Young men, seen as potential PWUD.	A comparison commune and intervention commune with similar demographic characteristics and drug were selected. The HIV prevalence estimated retrospectively in the intervention and comparison communes between baseline (2003) and follow-up (2009	▪ Community mobilization ▪ Dissemination of drug prevention and stigma reduction messages through media (creating an enabling environment)	HIV prevalence and positive opioid tests decreased more in the intervention commune (-2.3% vs -1.9%), but results were not statistically significant.
Hayes-Larson *et al.* (2013) Drug users in Hanoi, Vietnam: factors associated with membership in community-based drug user groups	Hanoi, Vietnam. Community-based groups (CBGs) organized. Current and former PWUD, both male and female.	Members (n = 188) of the CBGs were compared to non-member peers (n = 184) on demographic, psychosocial, behavioral and knowledge variables using a face-to-face structured interview that focused on issues of quality of life and harm reduction.	▪ Community mobilization ▪ Support in detoxification, finding jobs, and accessing syringe exchange and medical care (community-based service provision) ▪ Advocacy ▪ Peer education	Membership in the CBGs was associated with increased self-efficacy to get drug-related health care (OR 1.59, 1.24-2.04), increased quality of life in the environmental (OR 2.54, 1.31-4.93) domain (measured by self-reported safety, home, finances, services, access to information, leisure, and transportation).

Author + Title	Study setting, intervention and population	Methods	Assessed community empowerment strategy/ies --- Other intervention components	Outcomes
Shaikh *et al.* (2016) Empowering communities and strengthening systems to improve transgender health: outcomes from the Pehchan programme in India.	India. Pechan Programme supported by the Global Fund. Transgender and *hija* community (South Asian subgroup of the transgender community).	268 transgenders from a total population of 48,280 transgender clients in the six states covered by 112 CBOs (Andhra Pradesh and Telangana, Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh and West Bengal) participated in pre- and post-intervention cross-sectional surveys.	▪ Community-based service provision (legal support, support for accessing social entitlements, identity, mental health and psychosocial counselling, relationship counselling, life skills, advanced crisis and trauma management, family support and counselling related to SRHR) ▪ Capacity building ▪ Peer-led education --- ▪ HIV/STI testing & treatment ▪ Condom distribution	Access to HIV outreach education and testing and counselling services significantly increased (20.10%, p<0.001; 33.7%, p<0.001). In addition, significant increases in access to emergency crisis response (19.7%, p<0.001), legal support (26.8%, p<0.001) and mental health services (33.0%, pB0.001) were identified.
Ramanathan *et al.* (2014) Increase in condom use and decline in prevalence of sexually transmitted infections among high-risk men who have sex with men and transgender persons in Maharashtra, India: Avahan, the India AIDS Initiative.	Maharashtra state, West India. Avahan programme. High risk MSM (HR-MSM; highly visible, recruited from cruising sites/sex avenues) and transgender persons (TG), also called *hijras*.	Data from Avahan's computerized management information system and two rounds of integrated behavioral and biological assessment (IBBA) surveys in 2007 and 2009 (Round 1 with 653 HR-MSM/TG and Round 2 with 652 HR-MSM/TG) was used for the analysis. Logistic regression models were used.	▪ Community mobilization ▪ Advocacy ▪ Peer-led education --- ▪ STI treatment ▪ Condom and lubricant distribution	By March 2009, 83% of the estimated total population had visited STI clinics. The observed change in HIV prevalence was not statistically significant (12.3% in Round 1 vs. 6.3% in Round 2, p = 0.16). (Condom use did increase and syphilis prevalence decreased significantly).
Pawa *et al.* (2013) Reducing HIV Risk among Transgender	Pattaya, Thailand. Sisters program by Population Services	308 transgender women participated in a cross-sectional survey in 2011.	▪ Drop-in centers that provide counselling and social services (community development and community-based service	Attendance at the Sisters drop-in center was associated with receiving an HIV test in the past 6 months (AOR 2.58, 95% CI 1.47–

Women in Thailand: A Quasi-Experimental Evaluation of the Sisters Program.	International (PSI). Transgender women.		provision) ▪ Peer-led education --- ▪ Condom distribution ▪ HIV/STI testing	4.52).
Aung *et al.* (2017) Effectiveness of an Integrated Community- and Clinic-Based Intervention on HIV Testing, HIV Knowledge, and Sexual Risk Behavior of Young Men Who Have Sex With Men in Myanmar.	Myanmar. Link Up project, Community- and Clinic-Based Intervention. Young MSM (YMSM).	Using a mixed-methods approach, and employing a quasi-experimental design, two cross-sectional surveys in 3 control (no intervention) and 3 intervention townships were conducted in 2014 (one before and one 6 months after intervention). 267 (intervention) and 318 (control) YMSM aged 15–24 years participated. Focus group discussions were held to elicit perspectives on the use and acceptability of the health services and peer education.	▪ Drop-in centers were YMSM can socialize and talk to peer educators (community development and community mobilization) ▪ Peer-led education --- ▪ Condom and lubricant distribution ▪ HIV/STI testing & treatment	Coverage of the program was relatively low. Comparing changes between baseline and end line, a greater proportion of HIV-negative or unknown status YMSM accessed HIV testing in the past 3 months in intervention townships (from 45.0% to 57.1%) compared with those in control townships (remained at 29.0%); however, this difference in the effect over time was not statistically significant in multivariate modeling (adjusted odds ratio: 1.45; 95% confidence interval: .66–3.17).
Amirkhanian *et al.* (2015) Effects of a Social Network HIV/STD Prevention Intervention for Men Who Have Sex with Men in Russia and Hungary: A Randomized Controlled Trial.	St. Petersburg, Russia and Budapest, Hungary. Social network HIV/STI prevention intervention. MSM.	18 social networks of MSM (mean size=35 members, n=626) were recruited. Networks were randomly allocated to the social network intervention and comparison condition (standard HIV/STI testing). Changes in sexual behavior and HIV/STI prevalence were measured from baseline to 3- and 12-month follow-up.	Network leaders were trained and guided to convey HIV prevention advice to other network members (capacity building & peer-led education).	HIV/STI incidence was 15% in comparison condition networks and 9% in intervention condition networks.

Table 4. Overview of the peer-reviewed articles and the effects.

		Community empowerment strategies							Combined with other strategies	Outcome variables		
Author + Year	**Region(s), Population**	**CM**	**CNA**	**CD**	**CSP**	**CB**	**CEE**	**PE**		**Reduced HIV prevalence**	**Increased access to HIV/STI-related services**	**Increased fulfilment of human rights / Reduced stigma, violation, discrimination**
Gurnani *et al.* (2011)	South India, FSWs	+	+	+	+	+	+	+	Yes		+	+
Isac et al. (2015)	South India, FSWs	+	+	+	+	+	+	+	Yes	+		
Beattie *et al.* (2014)	South India, FSWs	+							No	-	+	
Beattie *et al.* (2015)	South India, FSWs	+	+	+	+	+	+	+	Yes			+
Bhattacharjee *et al*. (2013)	South India, FSWs	+							No	-		+
Vassall *et al.* (2014)	South India, FSWs	+		+	+	+	+	+	Yes	+		
Reza-Paul *et al.* (2008)	India, FSWs	+	+	+	+		+		Yes	-		
Punyam *et al.* (2012)	South India, FSWs					+	+		No			+
Kuhlmann *et al.* (2013)	South India, FSWs	+							No			+
Fung *et al.* (2007)	West India, FSWs							+	Yes	+		
Van Griensven *et al.* (1998)	South Thailand, FSWs							+	Yes	-		
Luchters *et al.* (2008)	Kenya, FSWs	+						+	Yes	-		
Traore *et al.* (2015)	Burkina Faso, FSWs							+	Yes	+		

CM = Community mobilization; CNA = Community-based needs assessment; CD = Community development; CSP = Community-based service provision; CB = Capacity building; CEE = Creating an enabling environment; PE = Peer-led education

Table 5. Grey literature.

		Community empowerment strategies							Combined with other strategies	Outcome variables		
Author + Year	**Country, Population**	**CM**	**CNA**	**CD**	**CSP**	**CB**	**CEE**	**PE**		**Reduced HIV prevalence**	**Increased access to HIV/STI-related services**	**Increased fulfilment of human rights / Reduced stigma, violation, discrimination**
Wirtz *et al.* (2014)	Kenya, Thailand, Brazil and Ukraine; FSWs	+					+	+	Not clear	+		
Hammett *et al.* (2012)	China-Vietnam border region; IDUs							+	Yes	+		
Nguyen *et al.* (2015)	Northern Vietnam, young potential PWUD	+					+		No	-		
Hayes-Larson *et al.* (2013)	Vietnam, PWUD	+			+		+	+	No			+
Shaikh *et al.* (2016	India, transgenders.				+	+	+		Yes		+	
Ramanathan *et al.* (2014)	West India, HR-MSM and transgenders	+					+	+	Yes	-		
Pawa *et al.* (2013)	Thailand, transgenders			+	+				Yes		+	
Aung *et al.* (2017)	Myanmar, Young MSM	+		+				+	Yes		-	
Amirkhanian *et al.* (2015)	Russia and Hungary, MSM					+		+	No	+		

CM = Community mobilization; CNA = Community-based needs assessment; CD = Community development; CSP = Community-based service provision; CB = Capacity building; CEE = Creating an enabling environment; PE = Peer-led education

First report Organization + Title	*Optional second report* Organization + Title	Setting, intervention and population	Sources of evidence	Community empowerment strategy/ies in intervention --- Other intervention components	Outcomes
USAID. (2010). End of Project Review of 'Social Marketing and Targeted Communications for HIV and AIDS Prevention Among Most–at–Risk Populations in Burma, China, Lao, and Thailand' October 2007–September 2010.	UNFPA, UNAIDS, & Asia Pacific Network of Sex Workers (2012). The HIV and sex work collection: innovative responses in Asia and the Pacific	18 cities across Myanmar. Targeted Outreach Project (TOP), founded by Population Services International (PSI) Myanmar with support from USAID. FSWs and MSM.	▪ TOP / PSI Myanmar ▪ USAID ▪ Ministry of health – National AIDS programme	▪ Community mobilization through peer support groups and national network of FSWs and MSM ▪ Drop-in centers that offer socializing, recreation, and vocational training (community development and community-based service provision) ▪ Capacity building by hiring and training FSWs and MSM, based on 'peer progression model' ▪ Advocacy ▪ Peer-led education --- ▪ Distribution of condoms and lubricants through peer outreach ▪ Clinical services in de drop-in centers including VCT, SRH services, and referral to HIV treatment ▪ Microcredit programme	▪ In 2007, TOP provided 50% of all HIV services reaching FSWS and all services for MSM in Myanmar. ▪ HIV prevalence among FSWs decreased from 33% in 2006 to 9.4% in 2011. HIV prevalence among MSM decreased from 28.8% in 2006 to 7.8%% in 2011. ▪ STI check-up and VCT have remained low. In relation to the estimated total key population, STI services covered 3.6% of MSM and 15% of FSWs in Myanmar; VCT covered 1% of MSM and 4.4% of FSWs.
KHANA. (2014). End of Project Evaluation: The Sustainable Action against HIV and AIDS in Communities (SAHACOM).		Phnom Penh (capital city) and eight provinces across Cambodia. SAHACOM project, founded by KHANA with support from USAID.	▪ Baseline documentation was based on desk reviews, field visits and meetings with staff ▪ Surveys were used for the midterm and	▪ Community mobilization through peer support groups ▪ Drop-in centers that provide vocational training (community development & community-based service provision) ▪ Provision of technical and financial support to	▪ Between 2012 and 2013, 39,217 people were reached with individual or group preventive interventions, including 214 PWID, 6,311 EW, and 5,020 MSM. ▪ The percentage of EW who sought STI treatment increased from midterm (43.6%) to end line (69.6%). ▪ The percentage of EW reporting to

		Female entertainment workers (direct and indirect sex workers who are collectively referred to as FEWs), MSM, PWUD/PWID.	endline evaluation	community organizations (capacity building) ▪ Peer-led education --- ▪ Counseling and HIV/STI testing and referrals for treatment through community volunteers ▪ Outreach which includes promotion of condom use, HIV/STI testing, family planning and SRH services	have received a HIV test in the past 6 months was significantly lower at end line (64.9%) compared to midterm (68.4%). ▪ EW at end line were more likely to have received counseling for their HIV test compared to midline (88.2% vs 86.7%). ▪ The percentage of MSM reporting to have received a HIV test in the past 6 months was significantly lower at end line (77.1%) compared to midterm (94.1%). ▪ The proportion of PWUD/PWID getting HIV test in the past six months was 83.3%, and 96.3% of them received counseling when getting the most recent HIV test. (no comparison).
FHI 360. (2009). Female Sex Workers in Border and Transportation Routes with Trend Analysis 2000-2009.	FHI. (2007). Final Report for the Implementing AIDS Prevention and Care (IMPACT) Project in Zambia: October 1997 to September 2007.	Zambia. Corridors of Hope HIV/AIDS Prevention Initiative funded by USAID. FSWs.	▪ Surveys executed by Corridors of Hope	▪ Community mobilization through peer support groups and meetings with other CBOs ▪ Establishment of drop-in centers (community development) ▪ Capacity building of staff and peer educators through training sessions ▪ Peer-led education --- ▪ STI and HIV outreach including VCT ▪ Promotion of condoms and abstinence ▪ Distribution of information and education materials	▪ Between 2000 and 2009, 7,172 FSWS received HIV counseling and test results; and 28,196 STI cases of were treated. ▪ The percentage of FSWs reporting to have ever received a HIV test increased significantly from 14% in 2000 to 82% in 2009. ▪ The percentage of FSWS reporting to have received their test results increased significantly from 7% in 2000 to 98% percent in 2009.
UNAIDS. (2006) HIV and	NSWP. (2014). Europe Regional	Bishkek (capital city) and surroundings,	▪ Informal interviews conducted by	▪ Community mobilization ▪ Establishment of drop-in centers (community	▪ In 2002, Tais Plus estimated that Bishkek had around 1700 sex workers. During the project's first

sexually transmitted infection prevention among sex workers in Eastern Europe and Central Asia.	Report: Good Practice in Sex Worker-Led HIV Programming.	Kyrgyzstan. Tais Plus, community-based organization, funded by the Global Fund. Female, male and transgender sex workers.	NSWP with staff ▪ Tais Plus reports	development) ▪ Assistance with legal, social and administrative affairs and psychosocial counselling (community-based service provision) ▪ Training and support for peer educators (capacity building) ▪ Advocacy ▪ Sensitization training for medical staff and government officials ▪ Peer-led education --- ▪ Condom distribution ▪ Referrals to STI and other medical services ▪ 24-hour telephone hotline for sex worker ▪ Distribution of information and education materials	year, 15% of all sex workers in the area were reached by the programme. Over the entire programme period, it was estimated that 80-90% of sex workers participated in the programme. ▪ Tais Plus is able to cover up to 60% of the safe sex supplies needs of sex workers, due to limitations set by the Global Fund.
NACOSA. (2016). Aiming higher: MSM/LGBTI Higher Education Institution Programme Evaluation Report.		14 Higher education institutions in South Africa. MSM/LGBTI programme founded by NACOSA, with support from the Global Fund. MSM/LGBTI (I = intersex) student and staff community.	▪ Interviews and group discussions conducted by the Foundation for Professional Development Programme Evaluation Unit ▪ Programme reports provided by NACOSA	▪ Risk reduction gatherings and support groups (community mobilization) ▪ Sensitization workshops for health care staff, health promoters, peer leaders, other campus staff and parents ▪ Campus dialogues focused at the general campus community to educate them about the sexual health issues facing MSM/LGBTI persons (creating an enabling environment) --- ▪ HIV counselling and testing (HCT) on campuses	▪ 7652 MSM/LGBTI were reached with HIV testing and/or other prevention services, which equals 94% of the target output indicator. Output percentages did differ per university (between 200% and 21% of the target). ▪ The interviews found that a portion of participants still felt their campuses weren't fully supportive environments yet for MSM/LGBTI staff and students, but they did see that their campus environments were slowly changing.

				▪ Distribution of education and information materials on campus aimed at both general campus community and MSM/LGBTI students ▪ Condoms and lubricant distribution on campus	
PSI Thailand. (2015) CHAMPION-IDU–Innovations, best practices and lessons learned–Implementation of the national response to HIV among people who inject drugs in Thailand 2009–2014.	The Global Fund. (2014). Grant Performance Report CHAMPION. www.theglobalfund.org/ProgramDocuments/THA/THA-H-PSI/THA-H-PSI_GPR_0_en/	19 (out of 76) provinces in Thailand. CHAMPION-IDU Project, founded by PSI Thailand with support from the Global Fund. PWID.	▪ Global Fund ▪ PSI Thailand	▪ Establishment of drop-in centers (community development) ▪ Provision of legal aid services to clients and peer workers (community-based service provision) ▪ Hiring and training of peer workers (capacity building) ▪ Advocacy ▪ Sensitization workshops for healthcare providers, prison guards and police ▪ Peer-led education --- ▪ Distribution of sterile injecting equipment and condoms ▪ STI testing and treatment ▪ Referral to VCT ▪ Opioid substitution therapy	▪ In total, 17,889 PWID were reached by the project. In total, 2,206,397 needles and syringes and 747,247 male condoms were distributed. ▪ Overall, the programme did not meet de targets based on Global Fund measurements, and was thus rated B2 (= inadequate but potential demonstrated).
International Harm Reduction Development Program. (2010). Making Harm Reduction Work for Women: The Ukrainian Experience.		Ukraine. 6 Gender responsive harm reduction programmes: MAMA+, Krok za Krokom, Virtus, Unitus, Light of Hope & Open Door. Funded by the International	▪ Focus groups conducted by the International Harm Reduction Development Program ▪ Information and reports provided by the 6 programmes	▪ Community mobilization through peer support groups ▪ Establishment of community centers (community development) ▪ Legal aid and social support in housing, childcare, and accessing medical care and social benefits (community-based service provision)	▪ The 6 programmes provided more than 4,500 female PWUD (about 5% of total female PWUD population) with HIV/STI and drug use-related services. This included syringe exchange, access to substitution treatment, sexual and reproductive health care, assistance during pregnancy, and legal aid. ▪ Focus groups with the women and staff found that the women felt

		Harm Reduction Development Program (IHRD) of the Open Society Institute. Female PWUD.		▪ Capacity building, through training women to become volunteer counsellors ▪ Advocacy ▪ Combatting discrimination and stigmatization through the media (creating an enabling environment) --- ▪ HIV and STI testing ▪ Referrals to HIV treatment and other medical care ▪ Substitution treatment for pregnant and parenting opiate users ▪ Education led by staff ▪ Street outreach	empowered to practice healthier behavior, receive medical treatment, find housing and jobs, and avoid wrongful conviction.

Table 6. Overview of the grey literature and the effects.

		Community empowerment strategies							Combined with other strategies	Outcome variables		
Programme	**Region(s), Population**	**CM**	**CNA**	**CD**	**CSP**	**CB**	**CEE**	**PE**		**Reduced HIV prevalence**	**Increased access to HIV/STI-related services**	**Increased fulfilment of human rights / Reduced stigma, violation, discrimination**
TOP	Myanmar, FSWs and MSM	+		+	+	+	+	+	+	+	+/-[3]	
SAHACOM	Cambodia, FEWs, MSM and PWUD/ PWID	+		+	+	+		+	+		+/-	
Corridors of Hope	Zambia, FSWs	+		+		+		+	+		+	
Tais Plus	Kyrgyzstan, female, male and transgender sex workers	+	+	+	+	+	+	+	+		+/-	
NACOSA	South Africa, MSM and LGBTI	+					+		+		+/-	
CHAMPION-IDU	Thailand, PWID			+	+	+	+	+	+		+/-	
International Harm Reduction Development Program	Ukraine, female PWUD	+		+	+	+	+		+		+/-	

CM = Community mobilization; CNA = Community-based needs assessment; CD = Community development; CSP = Community-based service provision; CB = Capacity building; CEE = Creating an enabling environment; PE = Peer-led education

[3] +/- means that the study reported mixed results (positive effects as well as challenges)