

Appendix E

Results of Systematic review among FSW and FSW Clients

Table 1: FSW population size estimates

Source	Geographic scope	Year(s) ¹	FSW size estimate or range (% of females age 15-49 years ²)	Approach	Sex work definition	Used for classic PAF
Benin						
SIDA-3[105]	Regional	2004	0.1-1.4%	Mapping & census	FSW	✓
Behnazin[77]	Regional	2008	1.3 (95% CI: 0.8,2.1)	Household GPS (FTFI)	Received payment for sex in last 1 year	✓
Behnazin[77]	Regional	2008	13.0 (95% CI:10.2,16.2)	Polling Booth Survey	Received payment for sex in last 1 year	✓
Behnazin[77]	Regional	2008	2.4 (95% CI:1.6,3.3)	Household GPS (FTFI)	Ever received payment for sex	No
Behnazin[77]	Regional	2008	16.7 (95% CI: 13.6,20.2)	Polling Booth Survey	Ever received payment for sex	No
Botswana						
Weiser[106]	Regional	2004-5	7.0 (95% CI: 5.1,9.4)	Household GPS (FTFI)	Exchange sex for money, food, or other resources in previous 12 months	✓
AIS[43]	National	2008	1.2 (95% CI: 1.1,1.3)	Household GPS (FTFI)	Exchange of sex for money or goods in last 12 months	✓
Burkina Faso						
Vandepitte [41]	Regional	2003	4.3	Mapping & census	N/A [Personal communication cited in Vandepitte[41]	✓
Burundi						
CNLS[107]	Regional	2010	0.27	Mapping & census	FSW	✓
Cameroon						
Morrison [41,101]	Regional	1997	2.2	Mapping & census	FSW	✓ ³
Cape Verde						
PEN [108]	National	2010	0.79	Mapping & census	FSW	✓
Chad						
DHS[43]	National	1997	2.5 (95% CI: 2.1,2.9)	Household GPS (FTFI)	Exchange of sex for money or goods	✓ ²
Comoros						
Baral[22]	N/A	N/A	3.6	N/A	FSW	✓ ⁴
Congo						
Baral[22]	N/A	N/A	3.6	N/A	FSW	✓ ⁴
DRC						

Baral[22]	N/A	N/A	0.67	N/A	FSW	√ ⁴
Côte d'Ivoire						
Vandepitte [41]	Regional	2004	0.6-1.2	Mapping & census	FSW	√
Vuylsteke[109]	Regional	2008	1.4 (95% CI: 1.3,1.6)	Capture-recapture (6 days) ⁶	FSW (at venues or places where known to receive or solicit clients)	√
CCM-10[110,111]	Regional	2004	4.0	Mapping & census	FSW	√
Ethiopia						
FHI-360[41,112,113]	Regional	2002	1.4-2.9	Mapping & census	Paid money in exchange for sex (establishment or street-based)	√
Ghana						
Vandepitte[41]	Regional	2004	0.7-2.6	Mapping & census	N/A [Personal communication	√

cited in Vandepitte[41]						
UNGASS 2012[114]	Regional	2010	1.1	Mapping & census	FSW	√
Guinea						
Baral[22] & Pruss-Ustun[24]	N/A	N/A	0.08-3.6	N/A	FSW	√ ⁴
Kenya						
DHS[43]	National	2003	5.6 (95% CI: 4.9,6.1)	Household GPS (FTFI)	Received money, gifts, or favours in return for sex in last 12 months	√
Ferguson[115]	Regional	2004	8000 [denominator not available]	Mapping & census	FSW	No
Oloo[116]	Regional	2007-2008	8.9 (95% CI: 6.4,12.0)	Household GPS (ACASI)	Currently a person gives you money/gifts for sex	√
Vuylsteke[109]	Regional	2008	3.0 (95% CI: 2.8,3.2)	Capture-recapture (6 days) ⁵	FSW (at venues or places where known to receive or solicit clients)	√
Okal[14]	Regional	2010	0.94	Wisdom of Crowds ⁵	FSW	√
Okal[14]	Regional	2010	5.2	Multiplier	FSW	√
Kimani[117]	Regional	2009	3.9	Capture-recapture (14 days) ⁵	FSW	√
Odek[58]	National	2011-2012	5.0	Geographical Mapping	Exchange anal, vaginal and/or oral sex for money or other items of value, primarily with men	√
Madagascar						

DHS[43]	National	2003-4	1.4 (95% CI: 1.2,1.7)	Household GPS (FTFI)	Received money, gifts, or favours in return for sex in last 12 months	✓
UNGASS 2012[118]	Regional	2011	1.3	Mapping & census	FSW	✓
Malawi						
Baral[22]	N/A	N/A	0.9	N/A	FSW	✓ ⁴
Mali						
DHS[43]	National	1996	6.5 (95% CI: 6.0,7.0)	Household GPS (FTFI)	Exchange of sex for money or goods in last 1 year	✓ ³
Mauritius						
Johnston[119]	National	2010	0.17	Multiplier	FSW	✓
UNGASS 2012[120]	National	2010	0.25-0.37	Multiplier	FSW	✓

Niger						
Vandepitte[41]	Regional	2004	2.6	Mapping & census	FSW	✓
Nigeria						
DHS[43]	National	1999	5.5 (95% CI: 4.9,6.0)	Household GPS (FTFI)	Exchange of sex for money or goods in past 12 months	✓ ³
Rwanda						
ESPHS[121]	Regional	2010	3.5 (95% CI: 2.8,4.2)	Household GPS (FTFI)	Engage in commercial sex	✓
ESPHS[121]	Regional	2010	0.32-0.49	Household GPS (Network-Scale-Up)	Know someone by sight and name, who also know you by sight and name, and with whom you have had contact with in last 12 months, who are female sex workers	✓
UNGASS 2012[122]	National	2010-2011	0.95-1.7	Mapping & census	FSW	✓
Sao Tome and Principe						
CCM-9[110,111]	National	2009	0.42	Mapping & census	FSW	✓
Senegal						
CCM-9[110,111]	National	2009	0.42	Mapping & census	FSW	✓
Sierra Leone						
CCM-9[110,111]	National	2009	0.41-5.3	Mapping & census	FSW	✓
Somalia						
UNGASS 2012[123]	National	2012	0.6	Mapping & census	FSW	✓
South Africa						

SANAC[57]	Regional	2013	0.9-1.24	Geographical mapping	FSW	✓
South Sudan						
Gelmon[24]	Regional	2008	10-13 ⁷	Household GPS (FTFI)	Exchange for money in the past 12 months	✓
Swaziland						
Weiser[106]	Regional	2004-5	2.1 (95%CI: 1.0,3.8)	Household GPS (FTFI)	Exchange sex for money, food, or other resources in previous 12 months	✓
Tanzania						
			0.46-0.92 (2008) ²			
NACP[124]	Regional	2008	0.46-0.92	Multiplier	FSW	✓
Togo						
Sobela[27]	Regional	2005	0.1-1.3	Mapping & census	FSW	✓

UNGASS 2012	Regional	2010	3.4	Mapping & census	FSW	✓
Uganda						
AIS[43]	National	2004-5	0.5 (95%CI: 0.36-0.68)	Household GPS (FTFI)	Man paid to have sex with you in last 12 months	✓
DHS[43]	National	2011	1.7 (95%CI: 1.4,2.0)	Household GPS (FTFI)	Gave sex in exchange for goods or services in the past 12 months	No
DHS[43]	National	2011	3.1 (95%CI: 2.7,3.5)	Household GPS (FTFI)	Ever gave sex in exchange for goods or services	No
DHS[43]	National	2011	1.4 (95%CI: 1.2,1.7)	Household GPS (FTFI)	Gave sex in exchange for money in the past 12 months	✓
DHS[43]	National	2011	2.6 (95%CI: 2.3,2.9)	Household GPS (FTFI)	Ever gave sex in exchange for money	No
Zambia						
FHI-360[125]	Regional	2000	2.7	Mapping & census	FSW	✓ ³
Zimbabwe						
DHS[43]	National	1994	3.6 (95% CI: 3.1,4.2)	Household GPS (FTFI)	Exchange of sex for money or goods in past 12 months	✓ ³
DHS[43]	National	1994	3.6 (95% CI: 3.1,4.2)	Household GPS (FTFI)	Exchange of sex for money or goods in past 12 months	✓ ³

DHS (demographic health survey[43]) and the AIS (AIDS Indicator Survey[43]) are general population household surveys (GPS); ACASI (audio-computer assisted self interview); FTFI (face to face interview); CI (confidence intervals) included if estimate comes from a survey or capture-recapture approaches of enumeration; PAF (classic population attributable fraction, estimated using the range in point estimates of population size); FSW (female sex worker, refers to self-identified FSWs). Mapping refers to census and enumeration as described in the WHO/UNAIDS guidelines[39].

¹Year of data collection.

²Denominator includes all females 15-49 years (including those who may not be sexually active in the last 1 year) based on census data for the geographic scope of enumeration and year of data collection.

³Estimate used for classic PAF calculation because post-2002 data not available.

⁴Estimates were obtained or derived from published review papers [22,24], but original source could not be located, and year of enumeration and methodology were not available from the reviews. Estimates were used in classic PAF calculations because no other source available.

⁵For capture-recapture approaches, the time between 'capture' and 'recapture' is given in parenthesis.

⁶Wisdom of crowds: asked FSW participant in behavioural survey about their perception of number of FSWs in Nairobi, Kenya.

⁷Denominator and/or confidence intervals not available

Table 2. Client population size estimates

Country	Source/Survey	Year	Method	N males	% of adults males		
					Exchanged gifts, favours, or money for sex		Exchanged payment or paid for sex, or sex with a sex worker
					Last 12 months (95% CI)	Last 12 months (95% CI)	Ever
Benin ¹	Lowndes[1]	2005	Indirect	---		30.0 ²	
Benin	DHS[43]	2006	FTFI	4615		1.7 (1.4,2.1)	
Benin ¹	Behanzin[77,98]	2008	FTFI	1159		12.6 (10.7,14.6)	16.0 (13.9, 18.2)
Benin ¹	Behanzin [77]	2008	PBS	546		19.8 (16.5,23.4)	33.7 (29.7,37.8)
Botswana	Weiser[106]	2004-5	FTFI	610	13.0 (10.4,15.9)		
Botswana	AIS[43]	2010	FTFI	255980		1.6 (1.6,1.6)	
Burkina Faso	Lowndes[1]	2002	FTFI	590		15.5 (12.6,18.6)	
Burkina Faso	DHS[43]	2003	FTFI	3209		0.2 (0.069,0.41)	
Burkina Faso	DHS [43]	2010	FTFI	6500		1.2 (0.95,1.5)	5.3 (4.8,5.9)
Burundi	DHS [43]	2010	FTFI	3760		0.3 (0.15,0.52)	2.0 (1.6,2.5)
Cameroon	DHS[43]	2004	FTFI	4815		0.7 (0.49,0.99)	
Cameroon	DHS[43]	2011	FTFI	6455		4.1 (3.6,4.6)	4.1 (3.6,4.6)
Central African Republic	DHS[43]	1994	FTFI	1541	10.9 (9.4,12.6)		
Chad	DHS[43]	2004	FTFI	1682		2.2 (1.6,3.0)	
Democratic Republic Congo	DHS [43]	2007	FTFI	4316		9.5 (8.6,10.4)	
Côte d'Ivoire	DHS[43]	2005	FTFI	4503		2.2 (1.8,2.7)	
Eritrea	DHS[43]	1995	FTFI	964	3.0 (2.0,4.3)		
Ethiopia	DHS[43]	2010	FTFI	12834		1.1 (0.93,1.3)	5.4 (5.0,5.8)
Gabon	DHS[43]	2012	FTFI	5108		4.7 (4.1,5.3)	14.6 (13.6,15.6)
Ghana	DHS[43]	2003	FTFI	4529		1.6 (1.2,2.0)	8.1 (7.3,8.9)
Ghana	DHS[43]	2008	FTFI	4568		1.8 (1.4,2.2)	
Guinea	DHS[43]	2012	FTFI	3352		2.2 (1.7,2.8)	5.0 (4.3,5.8)
Guinea-Bissau	GPA[43]	1990	FTFI	690	8.6 (6.6,10.9)		
Kenya ¹	Oloo[116]	2007-8	ACASI	423	15.4(12.1,19.2)		
Kenya	DHS[43]	2003	FTFI	3363		2.9 (2.4,3.5)	15.3 (14.1,16.6)
Kenya	DHS[43]	2009	FTFI	3258		2.1 (1.6,2.6)	
Lesotho	DHS[43]	2004	FTFI	2496		1.7 (1.2,2.7)	6.4 (5.5,7.4)
Lesotho	DHS[43]	2009	FTFI	3008		2.6 (2.1,3.2)	6.8 (5.9,7.8)

Liberia	DHS [43]	2007	FTFI	6009		2.5 (2.1,2.9)	
Madagascar	DHS[43]	2003-4	FTFI	2216		3.6 (2.8,4.5)	
Madagascar	DHS[43]	2008-9	FTFI	7465		9.2 (8.6,9.9)	
Malawi	DHS[43]	2004	FTFI	3114	5.0 (4.3,5.8)		21.8 (20.4,23.3)
Malawi	DHS[43]	2010	FTFI	6818		5 (4.5,5.5)	9.6 (8.9,10.3)
Mali	DHS [43]	2006	FTFI	2673		5.0 (4.2,5.9)	
Mozambique	DHS [43]	2003	FTFI	2490		13.2 (11.9,14.6)	
Mozambique	DHS [43]	2009	FTFI	4168		8.9 (8.1,9.8)	
Namibia	DHS [43]	2007	FTFI	3915		1.4 (1.1,1.8)	

Niger	DHS [43]	2006	FTFI	2079		1.3 (0.86,1.9)	
Niger	DHS [43]	2011	FTFI	3389		0.5 (0.19,0.80)	1.4 (1.0,1.8)
Nigeria	DHS[43]	2003	FTFI	2093		3.0 (2.3,3.8)	
Nigeria	DHS[43]	2008	FTFI	13308		1.5 (1.3,1.7)	
Rwanda	DHS[43]	2010	FTFI	5687		0.4 (0.26,0.61)	3.3 (2.9,3.8)
Rwanda	ESPHS[121]	2010	FTFI	5283		3.0 (2.5,3.5)	
Rwanda	ESPHS[121]	2010	Network Scale-up	---		0.02-0.03 ^{2,4}	
Senegal	DHS [43]	2010	FTFI	4417		0.7 (0.48,1.0)	4.3 (3.7,4.9)
Sierra Leone	DHS[43]	2008	FTFI	2944		2.0 (1.5,2.6)	
South Sudan	Household[126]	2010	FTFI	N/A		20.0 ²	
South Africa	Jewkes[82]	2003	ACASI	1615			18.3 (16.2,20.7) ³
Swaziland	DHS[43]	2007	FTFI	1442		0.1 (0.0018,0.39)	
Swaziland	Weiser[106]	2004-5	FTFI	389	4.0 (2.4,6.6)		
Tanzania	DHS[43]	2004-5	FTFI	2635		10.6 (9.4,11.8)	
Tanzania	DHS[43]	2007-8	FTFI	6975		8.3 (7.7,9.0)	
Tanzania	DHS[43]	2010	FTFI	2527		8.3 (7.3,9.5)	14.5 (13.1,15.9)
Tanzania	AIS[43]	2011	FTFI	8352		8.5 (7.9,9.1)	14.6 (13.8,15.4)
Togo	Sobela[27]	2005	Indirect	---		7.2 (range 0.70,31.9) ²	
Uganda	AIS[43]	2004-5	FTFI	6330		1.0 (0.77,1.3)	
Uganda	DHS[43]	2006	FTFI	2385		2.9 (2.3,3.6)	
Uganda	AIS[43]	2011	FTFI	8735		2.4 (2.1,2.7)	
Uganda	DHS[43]	2011	FTFI	2295		2.3 (1.7,3.0)	6.3 (5.4,7.4)
Zambia	DHS[43]	2002	FTFI	1943		10.3 (9.0,11.7)	
Zambia	DHS[43]	2007	FTFI	5995		4.7 (4.2,5.3)	

Zimbabwe	DHS[43]	2005-6	FTFI	6863		3.9 (3.5,4.4)	
Zimbabwe	DHS[43]	2010-11	FTFI	7110		3.1 (2.7,3.5)	16.7 (15.8,17.6)

DHS (demographic health survey[43]) and the AIS (AIDS Indicator Survey[43]) are general population household surveys, GPA (the Global Program on AIDS); PBS (polling booth surveys[77]); FTFI (face to face interviews); ACASI (audio-computer assisted self interview). CI (confidence intervals, abstracted or generated if size estimate was from a survey)

Indirect method refers to the triangulation of behavioural data from FSW surveys and client surveys with FSW size estimates, as described by Cote et al.[25]; In Togo, this was reported for six cities, and the point estimate reflects the weighted average[27].

Year refers to the year(s) of data collection.

¹Single city estimate

²Denominator not available to calculate confidence intervals; or indirect method with range across cities instead of confidence intervals

³Ever had sex with a woman in prostitution

⁴Definition = "clients of sex workers"

Table 3. HIV prevalence among female sex workers (FSWs) in Sub-Saharan Africa.

Country	Author	Year	Sex work definition	Sample Size	FSWs with HIV			HIV prevalence (GPF) ¹	Compared to HIV prevalence in general population females (GPF ¹)	
					n	%	95% CI		OR	95% CI
Angola	INLS[127]	2010	FSW	489	35	7.2	5.0,9.8	2.6	2.9	2.1,4.1
Benin	Lajoie[128]	2008	FSW	69	20	29.0	18.7,41.2	1.6	24.3	14.5,40.9
	Behanzin[99]	2002	FSW	723	333	46.1	42.4,49.8	2.0	42.4	36.6,49.1
	Behanzin[99]	2005	FSW	828	280	33.8	30.6,37.2	1.8	27.9	24.1,32.2
	Behanzin[99]	2008	FSW	613	179	29.2	25.6,33.0	1.6	24.6	20.7,29.3
Botswana	AIS[43]	2008	GM	2759	1032	37.4	35.6,39.2	32.6	1.2	1.1,1.3
Burkina Faso	Didelot-Rousseau[129]	2004	FSW	379	139	36.7	31.8,41.7	2.2	25.7	20.8,31.7
	Nagot[130]	2003	M	273	86	31.5	26.0,37.4	2.5	18.1	14.0,23.4
	Konate[73]	2004	GM	658	169	25.7	22.4,29.2	2.2	15.3	12.9,18.3
	UNGASS 2012[131]	2010	FSW	956	158	16.5	14.2,19.0	1.5	12.8	10.8,15.2
	CNLS-IST[132]	2006	FSW	840	99	11.8	9.7,14.2	1.8	7.3	5.9,9.0
Burundi	CNLS[107]	2007	FSW	1200	462	38.5	35.7,41.3	2.2	27.6	24.5,31.0
Cameroon	Mosoko[133]	2004	FSW	1005	265	26.4	23.7,29.2	7.0	4.7	4.1,5.5
Cape Verde	IBBS[134]	2010	FSW	377	21	5.6	3.5,8.4	0.4	14.5	9.3,22.7
Chad	CNLS[135]	2009	FSW	1023	205	20.0	17.6,22.6	4.1	5.9	5.1,6.9
Comoros	Dada[136]	2004	FSW	70	1	1.4	0.0,7.7	0.0	70.7	9.5,526.0
	Dada[136]	2005	FSW	83	0	0.0	0.0,4.3	0.0	29.0	1.8,477.8
Cote d'Ivoire	Vulysteke[137]	2008	GM	1000	266	26.6	23.9,29.5	5.5	6.3	5.4,7.2
DRC	Vandepitte[138]	2002	FSW	501	62	12.4	9.6,15.6	2.0	6.8	5.2,8.9
	Mwandagilirwa[139]	2002	GM	83	19	22.9	14.4,33.4	2.0	14.4	8.6,24.0

	Mulanga[140]	2002	FSW	162	38	23.5	17.2,30.7	2.0	14.8	10.3,21.3
	PNMLS[141]	2010	FSW	512	91	17.8	14.6,21.4	1.6	13.1	10.4,16.7
	PNMLS[141]	2011	FSW	841	186	22.1	19.4,25.1	1.6	17.7	15.0,20.8
Gabon	DGPS[142]	2009	FSW	423	85	20.1	16.4,24.2	8.0	2.9	2.3,3.7
	DGPS[143]	2007	FSW	601	139	23.1	19.8,26.7	9.0	3.1	2.5,3.7
Gambia	Peitzmeier[144]	2010	GM	251	40	15.9	11.6,21.1	1.8	10.4	7.4,14.6
Ghana	WAPCAS[145]	2002	FSW	599	172	28.7	25.1,32.5	2.9	13.7	11.5,16.3

	Anarfi[146]	2006	FSW	1143	429	37.5	34.7,40.4	2.4	24.4	21.6,27.5
	Anarfi[147]	2009	FSW	1200	300	25.0	22.6,27.6	2.1	15.6	13.7,17.8
Guinea	Aho[148]	2006	GM	421	79	18.8	15.1,22.8	2.2	10.3	8.1,13.1
	Aho[149]	2006	GM	223	79	35.4	29.2,42.1	2.2	24.4	18.6,32.1
	Diallo[150]	2007	FSW	598	206	34.4	30.6,38.4	2.2	22.9	19.4,27.2
Guinea-Bissau	UNGASS 2010[151]	2009	FSW	164	64	39.0	31.5,46.9	5.2	11.6	8.5,15.9
Kenya	Kimani[152]	2002	FSW	211	82	39.0	32.2,45.8	9.8	5.8	4.4,7.7
	Kimani[152]	2003	FSW	72	34	47.0	35.3,59.3	9.6	8.4	5.3,13.4
	Kimani[152]	2004	FSW	19	9	47.0	24.4,71.7	8.7	9.5	3.8,23.3
	Kimani[152]	2005	FSW	19	9	47.0	24.4,71.1	8.5	9.7	4.0,24.0
	Chersich [153]	2006	FSW	689	249	36.1	32.5,39.9	8.3	6.3	5.4,7.3
	van der Elst[154]	2007	GM	176	55	31.3	24.5,38.7	8.1	5.2	3.8,7.1
	Luchters[155]	2005	GM	803	283	35.2	31.9,38.7	8.5	5.9	5.1,6.8
	Kavanaugh[156]	2004	FSW	624	332	53.2	49.2,57.2	8.7	12.0	10.2,14.0
	Kavanaugh[156]	2003	FSW	367	159	43.3	38.2,48.6	9.6	7.2	5.9,8.9
	Kavanaugh[156]	2004	FSW	337	186	55.2	49.7,60.6	8.7	13.0	10.5,16.1
	Kavanaugh[156]	2005	FSW	287	148	51.6	45.6,57.5	8.5	11.5	9.1,14.5
	Kavanaugh[156]	2006	FSW	197	92	46.7	39.6,53.9	8.3	9.7	7.4,12.9
	Kavanaugh[156]	2007	FSW	234	97	41.5	35.1,48.1	8.1	8.1	6.2,10.5
	Vandenhoudt[100]	2008	FSW	479	277	57.8	53.3,62.3	7.9	16.1	13.4,19.3
	IOM[157]	2010	FSW	572	132	23.1	18.4,28.2	8.0	3.4	2.8,4.2
Madagascar	Harijaona[60]	2003	GM	100	0	0.0	0.0,3.6	0.6	0.8	0.0,12.8
	ESB[59]	2010	FSW	2195	12	0.5	0.3,1.0	0.5	1.1	0.6,1.9
Malawi	NAC Malawi[158]	2006	FSW	273	193	70.7	64.9,76.0	17.4	11.5	8.8,14.9
Mali	HCNLS[159]	2009	FSW	928	225	24.2	21.5,27.1	1.7	18.5	15.9,21.5
Mauritius	Johnston[160]	2010	GM	290	84	28.9	22.1,35.3	0.8	50.6	39.2,65.4

Mozambique	UNGASS 2012[161]	2009	FSW	459	92	20.0	16.5,24.0	14.1	1.5	1.2,1.9
	UNGASS 2012[161]	2010	FSW	437	33	7.6	5.3,10.4	13.8	0.5	0.4,0.7
	UNGASS 2012[161]	2011	FSW	309	69	22.3	17.8,27.4	13.5	1.8	1.4,2.4
	Zango[162]	2011	GM	187	69	36.9	30.0,44.2	13.5	3.7	2.8,5.0
Niger	CERMES[163]	2002	FSW	771	197	25.6	22.5,28.8	1.1	30.6	26.0,36.0
	CNLS[164]	2009	FSW	874	311	35.6	32.4,38.9	0.7	73.7	64.1,84.7

Nigeria	Tohon[165]	2002	FSW	116	58	50.0	40.6,59.4	1.1	89.1	61.9,128.2	
	Imade[166]	2006	FSW	398	192	48.2	43.2,53.3	5.1	17.4	14.3,21.2	
	Sule[167]	2007	FSW	99	39	39.4	29.7,49.7	5.1	12.0	8.0,18.0	
	Eluwa[168]	2007	GM	2897	700	24.2	22.6,25.8	5.1	5.9	5.4,6.4	
	Eluwa[168]	2010	GM	2963	506	17.1	15.7,18.5	4.8	4.1	3.7,4.5	
	Ahmed[169]	2007	FSW	1590	667	41.9	39.5,44.4	5.1	13.4	12.1,14.8	
	Forbi[170]	2006	FSW	900	335	37.2	34.1,40.5	5.1	11.1	9.7,12.7	
	Lawan[171]	2011	FSW	108	32	29.6	21.2,39.2	4.6	8.6	5.7,13.1	
	Fayemiwo[172]	2010	FSW	250	64	25.6	20.3,31.5	4.8	6.9	5.2,9.2	
	Rwanda	Braunstein[63]	2007	GM	800	192	24.0	21.1,27.1	3.9	7.9	6.7,9.3
TRAC Plus[173]		2010	FSW	1112	565	50.8	47.8,53.8	3.8	26.2	23.3,29.5	
Senegal	Wang[174]	2003	FSW	1052	208	19.8	17.4,22.3	0.7	32.9	28.2,38.3	
	Toure Kane[175]	2006	FSW	604	122	20.2	17.1,23.6	0.8	30.3	24.9,37.0	
	CNLS[176]	2002	FSW	1479	253	17.1	15.2,19.1	0.7	28.6	25.0,32.8	
	CNLS[177]	2004	FSW	969	188	19.4	17.0,22.0	0.8	29.1	24.8,34.1	
	SIDA-3[178]	2003	FSW	251	69	27.5	22.1,33.5	0.7	50.6	38.3,66.8	
	SIDA-3[179]	2005	FSW	304	50	16.4	12.5,21.1	0.8	24.4	18.0,33.0	
	ENSC[180]	2006	FSW	601	119	19.8	16.7,23.2	0.8	29.6	24.2,36.2	
	ENSC[181]	2010	FSW	685	127	18.5	15.7,21.7	0.8	29.2	24.1,35.4	
	Somalia	Kriitmaa[182]	2008	GM	237	12	5.2	2.5,8.5	0.6	8.3	4.6,14.8
		van Loggerenberg[75]	2005	GM ²	775	462	59.6	56.1,63.1	22.0	5.2	4.5,6.0
South Africa	Hedden[183]	2004	GM	119	65	54.6	45.2,63.8	21.8	4.3	3.0,6.2	
	Sudan	Abdelrahim[184]	2008	M	321	3	0.9	0.1,2.2	1.6	0.6	0.2,1.9
Elhadi[185]		2012	FSW	4094	62	1.5	1.2,1.9	1.6	1.0	0.8,1.3	
Swaziland	NERCHA[186]	2010	FSW	326	227	69.6	64.3,74.6	34.2	4.4	3.5,	
Tanzania	Williams[187]	2006	M	178	116	65.2	57.7,72.1	7.6	22.6	16.6,30.8	

	NACP[124]	2010	M	530	166	31.4	25.6,38.5	6.8	6.2	5.2,7.5
	Watson-Jones[188]	2004	GM	50	11	22.0	11.5,36.0	8.0	3.2	1.7,6.3
Togo	Sobela[27]	2003	FSW	386	211	54.7	49.5,59.7	5.9	19.1	15.7,23.4
	Sobela[27]	2005	FSW	925	263	28.4	25.5,31.5	5.6	6.7	5.8,7.7
	Pitche[189]	2011	M	1106	145	13.1	11.2,15.2	4.0	3.6	3.0,4.3
Uganda	Vandepitte[190]	2009	GM	1027	381	37.1	34.1,40.1	8.8	6.1	5.4,6.9

	Crane Surve y[65]	2009	FSW	947	312	33.0	30.0,36.0	8.8	5.1	4.4,5.8
Zimbabwe	Cowan[191]	2002	GM	356	199	55.9	50.6,61.1	27.8	3.3	2.7,4.1
	Cowan[192]	2009	FSW	338	171	50.6	43.5,58.6	20.7	3.9	3.2,4.9
	Cowan[192]	2009	FSW	229	159	69.8	61.7,76.7	20.7	8.7	6.6,11.5
	Cowan[192]	2009	FSW	237	120	50.6	41.7,59.0	20.7	3.9	3.0,5.1
West Africa	Pepin[193]	2005	FSW	585	152	26.0	22.5,29.7	2.7	12.5	10.4,15.1

Sex work definition categorized for meta-regression as: FSW, M (exchange of money); GM (exchange of money and/or goods/other materials for sex); OR (odds ratio)

¹Using UNAIDS estimates of the number of females age ≥ 15 years living with HIV in 2012[4], while denominator = female population 15-49 years, in keeping with the approach used by Baral[22], Kerrigan[23] et al. to obtain a conservative estimate of the OR.

²Includes women who reported >3 sexual partners in the previous 3 months.

Table 4. Potential impact of FSW/client interventions on overall HIV transmission in Sub-Saharan Africa

Study	HIV prevalence at start of intervention in the model		Sex work intervention (efficacy, coverage)	Potential impact in the wider community				Time-horizon
	Overall	FSWs		Outcome ¹				
				HIV incidence*	HIV prevalence*	# of HIV infections averted	PF	
Botswana								
Nagelkerke[205]	30%	N/A	Condom-use (100%, 75%)		27% \downarrow ²			30
Nagelkerke[205]	30%	N/A	Anti-retroviral treatment (100%, 50%)		13% \downarrow ²			30
Vissers[72]	33% ²	N/A	Oral pre-exposure prophylaxis (90%,75%)			251 per 100,000 uninfected person-years ²		10
Vissers[72]	33% ²	N/A	Oral pre-exposure prophylaxis (90%,75%), FSWs and clients			785 per 100,000 uninfected person-years ²		10
South Africa								
Vickerman[66]	30% ⁴	60%	Vaginal microbicide (40%, 75%)	1% ² \downarrow			1.3% ²	4
Vickerman[69]	27% ³	62%	\uparrow condom-use (100%,20%) & STI treatment (100%, 20%)	2% ² \downarrow		53-65 per 100,000 adults ²		1
Vickerman[69]	27% ³	62%	\uparrow condom-use (100%,20%) & STI treatment (100%, 100%)	14% ² \downarrow				1
Vickerman[69]	27% ³	62%	\uparrow condom-use (100%,20%) & STI treatment (100%, 100%), FSWs and clients	28% ² \downarrow				1
Johnson[206]	26% ²	N/A	HIV vaccine (30%, 60%)			0.4-2.4 per 100 FSWs vaccinated ²		10
Zimbabwe								
Hallett[71]	22%	N/A	Condom use (100%,80-100) & STI treatment (100%,10%)	10% ² \downarrow				5

Hallett[71] Kenya	22% ²	N/A	Condom use (100%,80-100) & STI treatment (100%,10%)	35% ² ↓		10
Visser[72]	16% ²	N/A	Oral pre-exposure prophylaxis (90%,75%)		166 per 100,000 uninfected person-years ²	10
Visser[72]	16% ²	N/A	Oral pre-exposure prophylaxis (90%,75%), FSWs and clients		733 per 100,000 uninfected person-years	10
Decker[67]	6%	33.8%	↓ prevalence of sexual violence from baseline 32% to 2.4%		53,200 ²	12% ² 5
Wirtz[23,68] Benin	6%	33.8%	100% FSW community empowerment from 5% ; leads to ↑ consistent condom use by 51%		16,661-20,680	6% ² 5
Boily[53]	1% ²	53%	↑ Condom-use (100%,60%) & STI treatment (100%,50%)	19% ³ ↓ 21.5% ² ↓ (17.7-24.9)		58-85% 10
Vickerman[70]	3% ²	55%	↑ condom-use (100%, 81%)			10% (6-12) ² 4
Vickerman[70]	3% ²	55%	STI testing & treatment ()			4
Vickerman[66]	3.3% ⁴	49%	Vaginal microbicide (40%,75%)	26% ² ↓		24.8% 4

FSW (female sex worker); GPF (general population); PF (prevented fraction; the % of HIV infections averted); N/A (not available from the study);

*Relative change in HIV incidence or prevalence

¹Range, uncertainty bounds, or 95% credible intervals from multiple simulations or epidemic realizations are shown in brackets.

²Total population (i.e. including FSWs and clients)

³General population females (i.e. excluding FSWs)

⁴Ante-natal clinic surveillance

⁵Additional study contributed by co-author [not identified in systematic search, publication currently under peer-review]