

## **Supplementary File**

### ***Incidence of unintended pregnancy among female sex workers in low- and middle-income countries: a systematic review and meta-analysis***

#### **1. Complete search strategy**

##### **Medline search 19 Jan 2016**

1. exp cohort studies/ or exp controlled before-after studies/ or exp cross-sectional studies/ or exp historically controlled study/ or exp interrupted time series analysis/ or exp feasibility studies/ or exp pilot projects/ or exp control groups/ or exp cross-over studies/ or exp double-blind method/ or exp random allocation/ or exp single-blind method/
2. exp clinical trial/ or exp observational study/ or exp comparative study/ or exp evaluation studies/ or exp multicenter study/
3. exp Sex Workers/
4. exp Prostitution/
5. prostitut\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
6. Commercial sex.mp.
7. sex work\*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier]
8. (sex\* adj2 (sell\* or transact\* or trade or trading)).mp.
9. 3 or 4 or 5 or 6 or 7 or 8
10. Developing Countries/
11. (Afghanistan\* or Albania\* or Algeria\* or Angola\* or Argentina\* or Armenia\* or Azerbaijan\* or Bangladesh\* or Belarus\* or Beliz\* or Benin\* or Bhutan\* or Bolivia\* or Bosnia\* or Herzegovin\* or Botswan\* or Brazil\* or Bulgaria\* or Burkina\* or Burundi\* or Cabo Verde\* or Cape Verde\* or Cambodia\* or Cameroon\* or Central African or Chad\* or China or Chinese or Colombia\* or Comor\* or Congo\* or Costa Rica\* or Cote d'Ivoire\* or Ivory Coast or Cuba\* or Djibouti\* or Dominica\* or Ecuador\* or Egypt\* or El Salvador\* or Eritrea\* or Ethiopia\* or Fiji\* or Gabon\* or Gambia\* or Georgia\* or Ghana\* or Grenad\* or Guatemala\* or Guinea\* or Guyan\* or Haiti\* or Hondura\* or Hungar\* or India\* or Indonesia\* or Iran\* or Iraq\* or Jamaica\* or Jordan\* or Kazakhstan\* or Kenya\* or Kiribati\* or Korea\* or Kosov\* or Kyrgyz Republic or Lao\* or Leban\* or Lesotho\* or Liberia\* or Libya\* or Macedonia\* or Madagascar\* or Malawi\* or Malaysia\* or Maldiv\* or Mali\* or Marshall Island\* or Mauritania\* or Mauriti\* or Mexic\* or Micronesia\* or Moldova\* or Mongolia\* or Monteneg\* or Morocc\* or Mozambi\* or Myanma\* or Burmese or Namibia\* or Nepal\* or Nicaragua\* or Niger\* or Nigeria\* or Pakistan\* or Palau\* or Panama\* or Papua New Guinea\* or Paraguay\* or Peru\* or Philippines or Filipino or Romania\* or Rwanda\* or Samoa\* or Sao Tome\* or Senegal\* or Serbia\* or Seychell\* or Sierra Leon\* or Solomon Island\* or Somalia\* or South Africa\* or Sudan\* or Sri Lanka\* or St Lucia\* or St Vincent or Grenadines or Surinam\* or Swazi\* or Syria\* or Tajikistan\* or Tanzania\* or Thai\* or Timor\* or Togo\* or Tonga\* or Tunisia\* or Turk\* or Turkmenistan\* or Tuvalu\* or Uganda\* or Ukrain\* or Uzbekistan\* or Vanuatu\* or Venezuela\* or Vietnam\* or West Bank or Gaza or Yemen\* or Zambia\* or Zimbabwe\*).mp.
12. exp africa/ or exp caribbean region/ or exp central america/ or latin america/ or exp south america/ or asia/ or exp asia, central/ or exp asia, southeastern/ or exp asia, western/ or exp indian ocean islands/ or pacific islands/ or exp melanesia/ or exp micronesia/ or exp west indies/
13. (africa\* or asia\* or caribbean or central america\* or latin america\* or south america\* or melanesia\* or micronesia\* or polynesia\*).mp.

14. (resource-limit\* or resource-poor or low-resource\* or limited-resource\* or resource-constrain\* or constrain\*-resource\* or under-resource\* or poor\*-resource\* or resource-scarce\* or scarce\*-resource\* or low-income or middle-income or lowincome or middleincome or LMIC\*).mp.
15. ((developing or underdeveloped or under-developed or emerging or less-developed or least-developed or less-economically developed or least-economically developed or less-affluent or least-affluent) adj (country or countries or nation or nations or region or regions or economy or economies)).mp.
16. ((developing or underdeveloped or under-developed or less-developed or least-developed) adj world).mp.
17. (third-world\* or thirdworld\* or 3rd-world\*).mp.
18. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19. 9 and 18
20. Cohort analy\*.mp.
21. ((doubl\* or singl\* or trebl\* or tripl\*) adj blind\*).mp.
22. Cross sectional.mp.
23. ((random\* or clinical or control\*) adj (trial\* or study or studies)).mp.
24. ((cohort or follow-up or followup or observational or prospective or retrospective or evaluation or intervention or comparative) adj (study or studies)).mp.
25. 1 or 2 or 20 or 21 or 22 or 23 or 24
26. 19 and 25
27. 26
28. limit 27 to (english language and yr="2000 -Current")

### **PsychInfo search 18 Jan 2016**

1. Cohort analy\*.mp.
2. ((doubl\* or singl\* or trebl\* or tripl\*) adj blind\*).mp.
3. Cross sectional.mp.
4. ((random\* or clinical or control\*) adj (trial\* or study or studies)).mp.
5. ((cohort or follow-up or followup or observational or prospective or retrospective or evaluation or intervention or comparative) adj (study or studies)).mp.
6. experimental design/ or exp between groups design/ or exp clinical trials/ or exp cohort analysis/ or exp followup studies/ or exp hypothesis testing/ or exp longitudinal studies/ or exp repeated measures/ or exp experiment controls/ or exp quasi experimental methods/
7. exp Evaluation/ or exp Program Evaluation/
8. exp observation methods/
9. "sampling (experimental)"/ or exp random sampling/
10. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11. exp Prostitution/
12. prostitut\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
13. Commercial sex.mp.
14. sex work\*.mp. [mp=title, abstract, heading word, table of contents, key concepts, original title, tests & measures]
15. (sex\* adj2 (sell\* or transact\* or trade or trading)).mp.
16. Developing Countries/
17. (Afghanistan\* or Albania\* or Algeria\* or Angola\* or Argentina\* or Armenia\* or Azerbaijan\* or Bangladesh\* or Belarus\* or Beliz\* or Benin\* or Bhutan\* or Bolivia\* or Bosnia\* or Herzegovin\* or Botswan\* or Brazil\* or Bulgaria\* or Burkina\* or Burundi\* or Cabo Verde\* or Cape Verde\* or Cambodia\* or Cameroon\* or Central African or Chad\* or China or Chinese or Colombia\* or Comor\* or Congo\* or Costa Rica\* or Cote d'Ivoir\* or Ivory Coast or Cuba\* or Djibouti\* or Dominica\* or Ecuador\* or Egypt\* or El Salvador\* or Eritrea\* or Ethiopia\* or Fiji\* or Gabon\* or Gambia\* or Georgia\* or Ghana\* or Grenad\* or Guatemala\* or Guinea\* or Guyan\* or Haiti\* or Hondura\* or Hungar\* or India\* or Indonesia\* or Iran\* or Iraq\* or Jamaica\* or Jordan\* or Kazakhstan\* or Kenya\* or Kiribati\* or Korea\* or Kosov\* or Kyrgyz Republic or Lao\* or Leban\* or Lesotho\*

- or Liberia\* or Libya\* or Macedonia\* or Madagascar\* or Malawi\* or Malaysia\* or Maldiv\* or Mali\* or Marshall Island\* or Mauritania\* or Mauriti\* or Mexic\* or Micronesia\* or Moldova\* or Mongolia\* or Montenegr\* or Morocc\* or Mozambi\* or Myanma\* or Burmese or Namibia\* or Nepal\* or Nicaragua\* or Niger\* or Nigeria\* or Pakistan\* or Palau\* or Panama\* or Papua New Guinea\* or Paraguay\* or Peru\* or Philippines or Filipino or Romania\* or Rwanda\* or Samoa\* or Sao Tome\* or Senegal\* or Serbia\* or Seychell\* or Sierra Leon\* or Solomon Island\* or Somalia\* or South Africa\* or Sudan\* or Sri Lanka\* or St Lucia\* or St Vincent or Grenadines or Surinam\* or Swazi\* or Syria\* or Tajikistan\* or Tanzania\* or Thai\* or Timor\* or Togo\* or Tonga\* or Tunisia\* or Turk\* or Turkmenistan\* or Tuvalu\* or Uganda\* or Ukrain\* or Uzbekistan\* or Vanuatu\* or Venezuela\* or Vietnam\* or West Bank or Gaza or Yemen\* or Zambia\* or Zimbabwe\*).mp.
18. (africa\* or asia\* or caribbean or central america\* or latin america\* or south america\* or melanesia\* or micronesia\* or polynesia\*).mp.
19. (resource-limit\* or resource-poor or low-resource\* or limited-resource\* or resource-constrain\* or constrain\*-resource\* or under-resource\* or poor\*-resource\* or resource-scarce\* or scarce\*-resource\* or low-income or middle-income or lowincome or middleincome or LMIC\*).mp.
20. ((developing or underdeveloped or under-developed or emerging or less-developed or least-developed or less-economically developed or least-economically developed or less-affluent or least-affluent) adj (country or countries or nation or nations or region or regions or economy or economies)).mp.
21. ((developing or underdeveloped or under-developed or less-developed or least-developed) adj world).mp.
22. (third-world\* or thirdworld\* or 3rd-world\*).mp.
23. 16 or 17 or 18 or 19 or 20 or 21 or 22
24. 11 or 12 or 13 or 14 or 15
25. 10 and 23 and 24

#### **Embase search 18 Jan 2016**

1. (Afghanistan\* or Albania\* or Algeria\* or Angola\* or Argentina\* or Armenia\* or Azerbaijan\* or Bangladesh\* or Belarus\* or Beliz\* or Benin\* or Bhutan\* or Bolivia\* or Bosnia\* or Herzegovin\* or Botswan\* or Brazil\* or Bulgaria\* or Burkina\* or Burundi\* or Cabo Verde\* or Cape Verde\* or Cambodia\* or Cameroon\* or Central African or Chad\* or China or Chinese or Colombia\* or Comor\* or Congo\* or Costa Rica\* or Cote d'Ivoire\* or Ivory Coast or Cuba\* or Djibouti\* or Dominica\* or Ecuador\* or Egypt\* or El Salvador\* or Eritrea\* or Ethiopia\* or Fiji\* or Gabon\* or Gambia\* or Georgia\* or Ghana\* or Grenad\* or Guatemala\* or Guinea\* or Guyan\* or Haiti\* or Hondura\* or Hungar\* or India\* or Indonesia\* or Iran\* or Iraq\* or Jamaica\* or Jordan\* or Kazakhstan\* or Kenya\* or Kiribati\* or Korea\* or Kosov\* or Kyrgyz Republic or Lao\* or Leban\* or Lesotho\* or Liberia\* or Libya\* or Macedonia\* or Madagascar\* or Malawi\* or Malaysia\* or Maldiv\* or Mali\* or Marshall Island\* or Mauritania\* or Mauriti\* or Mexic\* or Micronesia\* or Moldova\* or Mongolia\* or Montenegr\* or Morocc\* or Mozambi\* or Myanma\* or Burmese or Namibia\* or Nepal\* or Nicaragua\* or Niger\* or Nigeria\* or Pakistan\* or Palau\* or Panama\* or Papua New Guinea\* or Paraguay\* or Peru\* or Philippines or Filipino or Romania\* or Rwanda\* or Samoa\* or Sao Tome\* or Senegal\* or Serbia\* or Seychell\* or Sierra Leon\* or Solomon Island\* or Somalia\* or South Africa\* or Sudan\* or Sri Lanka\* or St Lucia\* or St Vincent or Grenadines or Surinam\* or Swazi\* or Syria\* or Tajikistan\* or Tanzania\* or Thai\* or Timor\* or Togo\* or Tonga\* or Tunisia\* or Turk\* or Turkmenistan\* or Tuvalu\* or Uganda\* or Ukrain\* or Uzbekistan\* or Vanuatu\* or Venezuela\* or Vietnam\* or West Bank or Gaza or Yemen\* or Zambia\* or Zimbabwe\*).mp.
2. exp Africa/ or exp caribbean/ or exp caribbean islands/ or exp "South and Central America"/ or exp Asia/ or exp indian ocean/ or exp pacific ocean/
3. exp developing country/
4. (africa\* or asia\* or caribbean or central america\* or latin america\* or south america\* or melanesia\* or micronesia\* or polynesia\*).mp.
5. (resource-limit\* or resource-poor or low-resource\* or limited-resource\* or resource-constrain\* or constrain\*-resource\* or under-resource\* or poor\*-resource\* or resource-scarce\* or scarce\*-resource\* or low-income or middle-income or lowincome or middleincome or LMIC\*).mp.

6. ((developing or underdeveloped or under-developed or emerging or less-developed or least-developed or less-economically developed or least-economically developed or less-affluent or least-affluent) adj (country or countries or nation or nations or region or regions or economy or economies)).mp.
7. ((developing or underdeveloped or under-developed or less-developed or least-developed) adj world).mp.
8. (third-world\* or thirdworld\* or 3rd-world\*).mp.
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10. prostitut\*.mp.
11. exp prostitution/ or exp transactional sex/
12. Commercial sex.mp.
13. sex work\*.mp.
14. (sex\* adj2 (sell\* or transact\* or trade or trading)).mp.
15. 10 or 11 or 12 or 13 or 14
16. ((cohort or follow-up or followup or observational or prospective or retrospective or evaluation or intervention or comparative) adj (study or studies)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]
17. ((random\* or clinical or control\*) adj (trial\* or study or studies)).mp.
18. Cross sectional.mp.
19. ((doubl\* or singl\* or trebl\* or tripl\*) adj blind\*).mp.
20. Cohort analy\*.mp.
21. exp cohort analysis/ or exp control group/ or exp correlational study/ or exp cross-sectional study/ or exp crossover procedure/ or exp double blind procedure/ or exp "early termination of clinical trial"/ or exp experimental design/ or exp nonequivalent control group/ or exp parallel design/ or exp pretest posttest control group design/ or exp pretest posttest design/ or exp single blind procedure/ or exp triple blind procedure/
22. exp comparative study/ or exp experimental study/ or exp feasibility study/ or exp observational study/ or exp pilot study/ or exp prevention study/ or exp quasi experimental study/
23. exp time series analysis/
24. exp clinical trial/ or exp "clinical trial (topic)"/ or exp community trial/ or exp intervention study/ or exp longitudinal study/ or exp major clinical study/ or exp open study/ or exp postmarketing surveillance/ or exp prospective study/ or exp retrospective study/
25. exp evaluation study/
26. 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25
27. 9 and 15 and 26
28. limit 27 to (english language and yr="2000 -Current")

**POPLINE search 20 Jan 2016**

(( ( Keyword:SEX WORKERS ) OR ( Keyword:TRANSACTIONAL SEX ) )

OR

(( "sex work\*" OR "Commercial sex" OR prostitut\* OR "sell sex\*" OR "transact\* sex\*" OR "sex\*transact\*" OR "sex\* trade" OR "sex\* trading" OR "trade sex\*" OR "trading sex\*" ) ) )

AND

(( ( Keyword:COHORT ANALYSIS OR Keyword:CLINICAL TRIALS OR Keyword:CONTROL GROUPS OR Keyword:CROSS SECTIONAL ANALYSIS OR Keyword:DOUBLE-BLIND STUDIES OR Keyword:FOLLOW-UP STUDIES OR Keyword:PROSPECTIVE STUDIES OR Keyword:RETROSPECTIVE STUDIES OR Keyword:REPEATED ROUNDS OF SURVEY OR Keyword:LONGITUDINAL STUDIES OR Keyword:PILOT PROJECTS OR Keyword:HEALTH SERVICES EVALUATION OR Keyword:PRE-POST TESTS OR Keyword:FAMILY PLANNING PROGRAM EVALUATION OR Keyword:PERIOD ANALYSIS OR Keyword:PROGRAM EFFECTIVENESS ) )

OR

(( (cohort OR follow\up OR followup OR "follow up" OR observational OR prospective OR retrospective OR evaluation OR intervention OR comparative OR random\* OR clinical OR control\*) study ~0 )  
 OR  
 ( (cohort OR follow\up OR followup OR "follow up" OR observational OR prospective OR retrospective OR evaluation OR intervention OR comparative OR random\* OR clinical OR control\*) studies ~0 )  
 OR  
 ( (random\* OR clinical OR control\*) trial~0 ) OR ( (doubl\* OR singl\* OR trebl\* OR tripl\*) adj blind\* ) OR ( cross\sectional OR "cross sectional" ) OR ( "cohort analy\*" ) )

AND

(( ( Region/Country:Central America OR Region/Country:South America OR Region/Country:Caribbean OR Region/Country:Oceania OR Region/Country:Africa OR Region/Country:Europe Southeastern OR Region/Country:Asia Central OR Region/Country:Asia Southeastern OR Region/Country:Asia Southern OR Region/Country:Asia Southwestern OR Region/Country:China OR Region/Country:Democratic People's Republic of Korea OR Region/Country:Mongolia OR Region/Country:Belarus OR Region/Country:Moldova OR Region/Country:Ukraine OR Region/Country:Mexico OR Region/Country:Gaza OR Region/Country:Iran OR Region/Country:Iraq OR Region/Country:Jordan OR Region/Country:Lebanon OR Region/Country:Syria OR Region/Country:West Bank OR Region/Country:Yemen ) ) )

AND ( ( Language:English ) AND ( Years:[2000 TO \*] ) )

**Conference abstracts: Web of Science 22 Jan 2016**

#16	#15 AND #9 AND #3 DocType=All document types; Language=All languages;
#15	#14 OR #13 OR #12 OR #11 OR #10 DocType=All document types; Language=All languages;
#14	(TS=("Cross sectional")) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#13	(TS=("Cohort analy*")) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#12	(TS=((cohort OR "follow up" OR followup OR observational OR prospective OR retrospective OR evaluation OR intervention OR comparative) near/0 (study OR studies))) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#11	(TS=((random* OR clinical OR control*) near/0 (trial* OR study OR studies))) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#10	(TS=((doubl* OR singl* OR trebl* OR tripl*) near/0 (blind*))) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#9	#8 OR #7 OR #6 OR #5 OR #4 DocType=All document types; Language=All languages;
#8	(TS(("developing" OR "underdeveloped" OR "under developed" OR "less developed" OR "least developed") NEAR/0 ("world"))) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#7	(TS(("developing" or "underdeveloped" or "under-developed" or emerging or "less-developed " or "least-developed" or "less-economically developed" or "least-economically developed" or "less-affluent" or "least-affluent") near/0 (country or countries or nation or nations or region or regions or economy or economies))) AND LANGUAGE: (English)

	DocType=All document types; Language=All languages;
#6	(TS=("resource-limit*" or "resource-poor" or "low-resource*" or "limited-resource*" or "resource-constrain*" or "constrain*-resource*" or "under-resource*" or "poor*-resource*" or "resource-scarce*" or "scarce*-resource*" or "low-income" or "middle-income" or lowincome or middleincome or LMIC*)) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#5	(TS=(africa* or asia* or caribbean or "central america*" or "latin america*" or "south america*" or melanesia* or micronesia* or polynesia*)) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#4	(TS=(Afghanistan* or Albania* or Algeria* or Angola* or Argentina* or Armenia* or Azerbaijan* or Bangladesh* or Belarus* or Beliz* or Benin* or Bhutan* or Bolivia* or Bosnia* or Herzegovin* or Botswan* or Brazil* or Bulgaria* or Burkina* or Burundi* or "Cabo Verde*" or "Cape Verde*" or Cambodia* or Cameroon* or "Central African" or Chad* or China or Chinese or Colombia* or Comor* or Congo* or "Costa Rica*" or "Cote d'Ivoir*" or "Ivory Coast" or Cuba* or Djibouti* or Dominica* or Ecuador* or Egypt* or "El Salvador*" or Eritrea* or Ethiopia* or Fiji* or Gabon* or Gambia* or Georgia* or Ghana* or Grenad* or Guatemala* or Guinea* or Guyan* or Haiti* or Hondura* or Hungar* or India* or Indonesia* or Iran* or Iraq* or Jamaica* or Jordan* or Kazakhstan* or Kenya* or Kiribati* or Korea* or Kosov* or "Kyrgyz Republic" or Lao* or Leban* or Lesotho* or Liberia* or Libya* or Macedonia* or Madagascar* or Malawi* or Malaysia* or Maldiv* or Mali* or "Marshall Island*" or Mauritania* or Mauriti* or Mexic* or Micronesia* or Moldova* or Mongolia* or Monteneg* or Morocco* or Mozambi* or Myanma* or Burmese or Namibia* or Nepal* or Nicaragua* or Niger* or Nigeria* or Pakistan* or Palau* or Panama* or "Papua New Guinea*" or Paraguay* or Peru* or Philippines or Filipino or Romania* or Rwanda* or Samoa* or "Sao Tome*" or Senegal* or Serbia* or Seychell* or "Sierra Leon*" or "Solomon Island*" or Somalia* or "South Africa*" or Sudan* or "Sri Lanka*" or "St Lucia*" or "St Vincent" or Grenadines or Surinam* or Swazi* or Syria* or Tajikistan* or Tanzania* or Thai* or Timor* or Togo* or Tonga* or Tunisia* or Turk* or Turkmenistan* or Tuvalu* or Uganda* or Ukrain* or Uzbekistan* or Vanuatu* or Venezuela* or Vietnam* or "West Bank" or Gaza or Yemen* or Zambia* or Zimbabwe*)) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#3	#2 OR #1 DocType=All document types; Language=All languages;
#2	(TS=(sex* near/1 (sell* or transact* or trade or trading))) AND LANGUAGE: (English) DocType=All document types; Language=All languages;
#1	(TS=(prostitut* or "sex work*" or "commercial sex" )) AND LANGUAGE: (English) DocType=All document types; Language=All languages;

### Conference abstracts: Proquest 22 Jan 2016

(  
(sex\* NEAR/2 (sell\* OR transact\* OR trade OR trading)) OR prostitut\* OR "Commercial sex" OR "sex work\*"  
)  
AND  
(  
((doubl\* OR singl\* OR trebl\* OR tripl\*) PRE/0 blind\*)  
OR  
((random\* OR clinical OR control\*) PRE/0 (trial\* OR study OR studies))  
OR  
((cohort OR "follow up" OR followup OR observational OR prospective OR retrospective OR evaluation OR intervention OR comparative) PRE/0 (study OR studies))  
OR  
("Cohort analy\*")  
OR  
("Cross sectional")  
)  
AND  
(

(Afghanistan\* OR Albania\* OR Algeria\* OR Angola\* OR Argentina\* OR Armenia\* OR Azerbaijan\* OR Bangladesh\* OR Belarus\* OR Beliz\* OR Benin\* OR Bhutan\* OR Bolivia\* OR Bosnia\* OR Herzegovin\* OR Botswan\* OR Brazil\* OR Bulgaria\* OR Burkina\* OR Burundi\* OR Cabo Verde\* OR Cape Verde\* OR Cambodia\* OR Cameroon\* OR Central African OR Chad\* OR China OR Chinese OR Colombia\* OR Comor\* OR Congo\* OR Costa Rica\* OR Cote d'Ivoire\* OR Ivory Coast OR Cuba\* OR Djibouti\* OR Dominica\* OR Ecuador\* OR Egypt\* OR El Salvador\* OR Eritrea\* OR Ethiopia\* OR Fiji\* OR Gabon\* OR Gambia\* OR Georgia\* OR Ghana\* OR Grenad\* OR Guatemala\* OR Guinea\* OR Guyan\* OR Haiti\* OR Hondura\* OR Hungar\* OR India\* OR Indonesia\* OR Iran\* OR Iraq\* OR Jamaica\* OR Jordan\* OR Kazakhstan\* OR Kenya\* OR Kiribati\* OR Korea\* OR Kosov\* OR Kyrgyz Republic OR Lao\* OR Leban\* OR Lesotho\* OR Liberia\* OR Libya\* OR Macedonia\* OR Madagascar\* OR Malawi\* OR Malaysia\* OR Maldiv\* OR Mali\* OR Marshall Island\* OR Mauritania\* OR Mauriti\* OR Mexic\* OR Micronesia\* OR Moldova\* OR Mongolia\* OR Montenegr\* OR Morocc\* OR Mozambi\* OR Myanma\* OR Burmese OR Namibia\* OR Nepal\* OR Nicaragua\* OR Niger\* OR Nigeria\* OR Pakistan\* OR Palau\* OR Panama\* OR Papua New Guinea\* OR Paraguay\* OR Peru\* OR Philippines OR Filipino OR Romania\* OR Rwanda\* OR Samoa\* OR Sao Tome\* OR Senegal\* OR Serbia\* OR Seychell\* OR Sierra Leon\* OR Solomon Island\* OR Somalia\* OR South Africa\* OR Sudan\* OR Sri Lanka\* OR St Lucia\* OR St Vincent OR Grenadines OR Surinam\* OR Swazi\* OR Syria\* OR Tajikistan\* OR Tanzania\* OR Thai\* OR Timor\* OR Togo\* OR Tonga\* OR Tunisia\* OR Turk\* OR Turkmenistan\* OR Tuvalu\* OR Uganda\* OR Ukrain\* OR Uzbekistan\* OR Vanuatu\* OR Venezuela\* OR Vietnam\* OR West Bank OR Gaza OR Yemen\* OR Zambia\* OR Zimbabwe\*)

OR

((developing OR underdeveloped OR "under developed" OR "less developed" OR "least developed") PRE/0 (world))

OR

((developing OR underdeveloped OR "under developed" OR "less developed" OR "least developed" OR "less economically developed" OR "least economically developed" OR "less affluent" OR "least affluent") PRE/0 (country OR countries OR nation OR nations OR region OR regions OR economy OR economies))

OR

("third world\*" OR thirdworld\* OR "3rd-world\*")

OR

("resource limit\*" OR "resource poor" OR "low resource\*" OR "limited resource\*" OR "resource constrain\*" OR "constrain\* resource\*" OR "under resource\*" OR "poor\* resource\*" OR "resource scarce\*" OR "scarce\* resource\*" OR "low income" OR "middle income" OR lowincome OR middleincome OR LMIC\*)

OR

(africa\* OR asia\* OR caribbean OR "central america\*" OR "latin america\*" OR "south america\*" OR melanesia\* OR micronesia\* OR polynesia\*)

)

## **Open grey22 Jan 2016**

lang:"en"

((sex\* NEAR/2 (sell\* OR transact\* OR trade OR trading)) OR prostitut\* OR "Commercial sex" OR "sex work\*")

AND

(

(Afghanistan\* OR Albania\* OR Algeria\* OR Angola\* OR Argentina\* OR Armenia\* OR Azerbaijan\* OR Bangladesh\* OR Belarus\* OR Beliz\* OR Benin\* OR Bhutan\* OR Bolivia\* OR Bosnia\* OR Herzegovin\* OR Botswan\* OR Brazil\* OR Bulgaria\* OR Burkina\* OR Burundi\* OR Cabo Verde\* OR Cape Verde\* OR Cambodia\* OR Cameroon\* OR Central African OR Chad\* OR China OR Chinese OR Colombia\* OR Comor\* OR Congo\* OR Costa Rica\* OR Cote d'Ivoire\* OR Ivory Coast OR Cuba\* OR Djibouti\* OR Dominica\* OR Ecuador\* OR Egypt\* OR El Salvador\* OR Eritrea\* OR Ethiopia\* OR Fiji\* OR Gabon\* OR Gambia\* OR Georgia\* OR Ghana\* OR Grenad\* OR Guatemala\* OR Guinea\* OR Guyan\* OR Haiti\* OR Hondura\* OR Hungar\* OR India\* OR Indonesia\* OR Iran\* OR Iraq\* OR Jamaica\* OR Jordan\* OR Kazakhstan\* OR Kenya\*

OR Kiribati\* OR Korea\* OR Kosov\* OR Kyrgyz Republic OR Lao\* OR Leban\* OR Lesotho\* OR Liberia\*  
OR Libya\* OR Macedonia\* OR Madagascar\* OR Malawi\* OR Malaysia\* OR Maldiv\* OR Mali\* OR Marshall  
Island\* OR Mauritania\* OR Mauriti\* OR Mexic\* OR Micronesia\* OR Moldova\* OR Mongolia\* OR  
Montenegr\* OR Morocc\* OR Mozambi\* OR Myanma\* OR Burmese OR Namibia\* OR Nepal\* OR Nicaragua\*  
OR Niger\* OR Nigeria\* OR Pakistan\* OR Palau\* OR Panama\* OR Papua New Guinea\* OR Paraguay\* OR  
Peru\* OR Philippines OR Filipino OR Romania\* OR Rwanda\* OR Samoa\* OR Sao Tome\* OR Senegal\* OR  
Serbia\* OR Seychell\* OR Sierra Leon\* OR Solomon Island\* OR Somalia\* OR South Africa\* OR Sudan\* OR  
Sri Lanka\* OR St Lucia\* OR St Vincent OR Grenadines OR Surinam\* OR Swazi\* OR Syria\* OR Tajikistan\*  
OR Tanzania\* OR Thai\* OR Timor\* OR Togo\* OR Tonga\* OR Tunisia\* OR Turk\* OR Turkmenistan\* OR  
Tuvalu\* OR Uganda\* OR Ukrain\* OR Uzbekistan\* OR Vanuatu\* OR Venezuela\* OR Vietnam\* OR West  
Bank OR Gaza OR Yemen\* OR Zambia\* OR Zimbabwe\*)

OR

((developing OR underdeveloped OR "under developed" OR "less developed" OR "least developed" OR "less  
economically developed" OR "least economically developed" OR "less affluent" OR "least affluent") NEAR/0  
(country OR countries OR nation OR nations OR region OR regions OR economy OR economies))

OR

((developing OR underdeveloped OR "under developed" OR "less developed" OR "least developed") NEAR/0  
(world))

OR

("third world\*" OR thirdworld\* OR "3rd-world\*")

OR

("resource limit\*" OR "resource poor" OR "low resource\*" OR "limited resource\*" OR "resource constrain\*"  
OR "constrain\* resource\*" OR "under resource\*" OR "poor\* resource\*" OR "resource scarce\*" OR "scarce\*  
resource\*" OR "low income" OR "middle income" OR lowincome OR middleincome OR LMIC\*)

OR

(africa\* OR asia\* OR caribbean OR "central america\*" OR "latin america\*" OR "south america\*" OR  
melanesia\* OR micronesia\* OR polynesia\*)

)

## 2. Quality assessment tool

Adapted from the Joanna Briggs Institute Prevalence Critical Appraisal Tool<sup>1</sup>. Modified version provided by the author (Munn) on 21/3/16. Adjustments as per Bowring 2016<sup>2</sup>. Further modifications specific to research question made by review authors.

<b>DOMAIN 1: EXTERNAL VALIDITY</b>	
<i>Is the sample representative of the population of interest?</i>	
<b>1.1 Was an appropriate sampling frame used?</b>	
1	Enumeration/estimate of FSWs, or clear description of source population (demographics, location, and time period), and rationale for use
0	No sampling frame, or inappropriate population for research question
<b>1.2 Was an appropriate sampling method used?</b>	
1	Probability-based sample (including: simple random, systematic, stratified, cluster, two-stage and multi-stage sampling) RDS or properly described time-location/venue sampling (if analysed appropriately)
0	Non-random sample (including purposive, quota, convenience and snowball), or sampling not described
<b>1.3 Were inclusion and exclusion criteria explicit and appropriate to the research question?</b>	
1	Yes, e.g. women only, FSWs, all reproductive ages, etc
0	No: limited by HIV status or other characteristic that would affect generalisability

<b>DOMAIN 2: SELECTION (NON-RESPONSE) BIAS</b>	
<i>Was there incomplete outcome data (due to non-response, refusal or exclusion), and how did it affect the outcome?</i>	
<b>2.1 Were (FSW) study participants recruited and enrolled in an appropriate way?</b>	
1	Well described methods of recruitment and enrolment; appropriate staff expertise/training; appropriate seed selection for RDS; appropriate venue/location coverage
0	Poorly described; potential source of bias due to recruitment methods
<b>2.2 Was there selective participation in the study?</b>	
1	>=80% of those invited to participate were screened <80% participation rate, but sociodemographic/sex work characteristics not significantly different between participants and non-participants
0	<80% participation rate and significantly different characteristics likely to affect outcome Participation rate not reported or differences not assessed
<b>2.3 What was the retention rate?</b>	
Closed cohort/RCT: what proportion of participants who commenced the study contributed data at the final follow up visit? (If choosing an earlier endpoint, use retention rate up to this point)	
Open cohort: what proportion attended at least one follow up visit, and was retention well described?	
2	>=80% and sociodemographic/sex work characteristics compared and not significantly different
1	>=80% and sociodemographic/sex work characteristics either significantly different or not compared
0	<80%

<b>DOMAIN 3: MEASUREMENT BIAS</b>	
<b>3.1 Was a valid tool used for the identification of the condition (pregnancy)?</b>	
1	Serum or urine test for beta HCG
0	Self-reported or observed by study personnel
<b>3.2 Was the condition (pregnancy) measured in a standard, reliable way for all FSWs?</b>	
1	Pregnancy measured systematically (eg every study visit); data collectors appropriately trained
0	Unclear/inconsistent methods; lack of training for data collectors; nonsystematic measurement or recording (eg pregnancy only tested on participant request or clinician suspicion)
<b>3.3 Was pregnancy intention measured systematically using a valid tool?</b>	
1	Prospective question about intention asked at appropriate intervals (at least every 12months); or LMUP
0	Intention assumed, infrequently measured or unreliable retrospective question
N/A	Intention not measured

<b>DOMAIN 4: INTERNAL VALIDITY</b>	
<i>How likely could the result be due to chance? What is the level of precision?</i>	
<b>4.1 Was the person-years of observation adequate for calculating pregnancy incidence?</b>	
1	FSWs followed for at least 100 woman-years, or reasonable justification of smaller size
0	<100 woman-years
<b>4.2 Was the study conducted for a sufficient period of time to calculate pregnancy incidence?</b>	
1	Closed cohort or trial: at least 6 months' follow-up time Open cohort: median follow up time per participant >6 months?
0	Insufficient observation period, or not reported
<b>4.3 Was there appropriate statistical analysis?</b>	
1	Detailed statistical methods described Primarily consider the measure of risk that will be used in the meta-analysis – i.e. incidence rates, and/or incidence proportion if measured over 1 year For proportions (cumulative incidence): denominator and numerator explicitly reported and appropriate/justified For incidence rates: calculation of person-years, including estimate of conception date and approach to censoring of pregnancy, explicitly reported and appropriate/justified (should not count pregnant time towards total person-years) If calculated based on data from author: sufficient data provided for accurate calculation
0	Methods not sufficiently described; inappropriate technique

<b>DOMAIN 5: OTHER ISSUES</b>	
<b>5.1 Was pregnancy incidence an objective of the study?</b>	
1	Yes (consider objectives of overall study, not sub-study/specific paper)
0	No (e.g. cohort may have been originally designed to measure HIV incidence, but they also published a paper on incidental pregnancy incidence)
<b>5.1 Were there any other issues that may have introduced bias or affected the validity of the estimates?</b>	

1	No issues
0	Study design issues, e.g. highly variable/skewed follow up times in open cohort study; very long follow-up period during which true incidence in the population likely to have changed  Selective use or reporting of data (e.g. only reporting pregnancy incidence in one subgroup or at one time point without justification)  Intervention may impact on pregnancy incidence e.g. testing diaphragm use, or FP counselling (not just standard of care condom counselling)

### **Scoring**

#### **Studies that measure unintended pregnancy**

<b>Domain</b>	<b>Raw score out of:</b>
External validity	3
Selection bias	4
Measurement bias	3
Internal validity	3
Other issues	2
<b>Total</b>	<b>15</b>

#### **Studies that measure pregnancy (undefined)**

<b>Domain</b>	<b>Raw score out of:</b>
External validity	3
Selection bias	4
Measurement bias	2
Internal validity	3
Other issues	2
<b>Total</b>	<b>14</b>

### **References**

1. Munn Z, Moola S, Riitano D, Lisy K. The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International Journal of Health Policy and Management* 2014; **3**: 123+.
2. Bowring AL, Veronese V, Doyle JS, Stoope M, Hellard M. HIV and Sexual Risk Among Men Who Have Sex With Men and Women in Asia: A Systematic Review and Meta-Analysis. *AIDS and Behavior* 2016: 1-23.