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Sexual Health

#### Supplementary Material

### Burden of tuberculosis and hepatitis co-infection among people living with HIV in Nepal: a systematic review and meta-analysis

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#### **Supplemental Material**

#### Appendix A

#### Literature search strategy

Database and platform: <u>AMED (OvidSP) 1985 to November 2020; Embase (OvidSP) 1974 to 2020 December 09; Ovid MEDLINE(R) 1946 to November Week 4 2020; APA PsycInfo (OvidSP) 1987 to November Week 5 2020.</u>

- 1. exp hiv/ or exp hiv infections/
- 2. (hiv or aids or acquired immunodefic or acquired immune deficienc\$).ti,ab.
- 3. 1 or 2
- 4. exp Tuberculosis/
- 5. tuberculos\$.ti,ab.
- 6. exp Hepatitis/
- 7. exp Hepatitis B/or exp Hepatitis C/
- 8. (hcv or hbv or hepatitis\*).ti,ab.
- 9. exp \*Opportunistic Infections/ or coinfection/
- 10. 4 or 5 or 6 or 7 or 8 or 9
- 11. 3 and 10
- 12. Animal/ not Human/
- 13. 11 not 12
- 14. nepal.mp.
- 15. 13 and 14
- 16. remove duplicates from 15

Literature search carried on Scopus using the following literature search strategy:

TITLE-ABS-KEY ( ( hiv OR aids OR "human immunodeficiency virus" OR "acquired immunodeficiency syndrome" OR hiv/aids OR hiv-aids ) AND ( tuberculosis OR tb ) OR ( ( opportunistic AND infection\* ) OR coinfection) OR ( hbv OR hcv OR hepatitis OR ( hepatitis AND virus ) ) AND nepal )

Following search terms were used in NEPJOL database:

('human immunodeficiency virus', or 'HIV'), coinfection ('tuberculosis', 'TB', 'hepatitis B', 'HBV', 'hepatitis C', 'HCV', 'coinfection', or 'opportunistic infection')

#### Appendix B

#### Hoy et al criteria for assessing risk of bias in 23 studies

List of 10 questions (Q1 - Q10) applied to the studies:

- 1. Was the study's target population a close representation of the national population in relation to relevant variables, e.g. age, sex, occupation?
- 2. Was the sampling frame a true or close representation of the target population?
- 3. Was some form of random selection used to select the sample, OR, was a census undertaken?
- 4. Was the likelihood of non-response bias minimal?
- 5. Were data collected directly from the subjects (as opposed to a proxy)?
- 6. Was an acceptable case definition used in the study?
- 7. Was the study instrument that measured the parameter of interest (e.g. prevalence of low back pain) shown to have reliability and validity (if necessary)?
- 8. Was the same mode of data collection used for all subjects?
- 9. Was the length of the shortest prevalence period for the parameter of interest appropriate?
- 10. Were the numerator(s) and denominator(s) for the parameter of interest appropriate?

### Table S1: Methodological quality assessment using Hoy et al criteria for assessing risk of bias

#	Author, year	Q1	Q2	Q 3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Overall risk of study bias*
1	Ghimire et al, 2004	0	1	0	1	1	1	1	1	1	1	8
2	Dhungana et al, 2008	0	0	1	1	1	1	1	1	1	1	8
3	Ghimire et al, 2008	0	1	1	1	1	1	1	1	1	1	9
4	Karki et al, 2009	0	1	1	1	1	1	1	1	1	1	9
5	Sharma et al, 2010	0	0	1	1	1	1	1	1	1	1	8
6	Poudel et al, 2010	0	0	0	1	1	1	1	1	1	1	7
7	Verma et al, 2010	0	0	1	1	1	1	1	1	1	1	8
8	Verma et al, 2012	0	1	1	1	1	1	1	1	1	1	9
9	Dhungana et al, 2012	1	0	1	1	1	1	1	1	1	1	9
10	Tiwari et al, 2012	0	0	0	1	1	1	1	1	1	1	7
11	Ojha et al, 2013	0	0	0	1	1	1	1	1	1	1	7
12	Bohara, 2014	0	0	1	1	1	1	1	1	1	1	8
13	Poudyal et al, 2014	0	0	0	1	1	1	1	1	1	1	7
14	Bista et al, 2014	0	1	0	1	1	1	1	1	1	1	8
15	Paudel et al, 2014	0	0	0	1	1	1	1	1	1	1	7

#	Author, year	Q1	Q2	Q 3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Overall risk of study bias*
16	Khushbu et al, 2015	0	0	0	1	1	1	1	1	1	1	7
17	Supram et al, 2015	0	1	1	1	1	1	1	1	1	1	9
18	Bhusal et al, 2016	0	0	0	1	1	1	1	1	1	1	7
19	Mahato et al, 2017	0	1	1	1	1	1	1	1	1	1	9
20	Ionita et al, 2017	1	1	1	1	1	1	1	1	1	1	10
21	Baral et al, 2017	0	1	1	1	1	1	1	1	1	1	9
22	Kakchapati et al, 2017	1	1	1	1	1	1	1	1	1	1	10
23	Bhattarai et al, 2018	0	0	1	1	1	1	1	1	1	1	8

\* Domain judgement: 0-5 'high risk of bias', 6-8 'moderate risk of bias', 9-10 'low risk of bias'.

### Appendix C

Figure S1: Funnel plots of standard error by prevalence rate. (A) Tuberculosis; (B) HBV; (C) HCV infection.

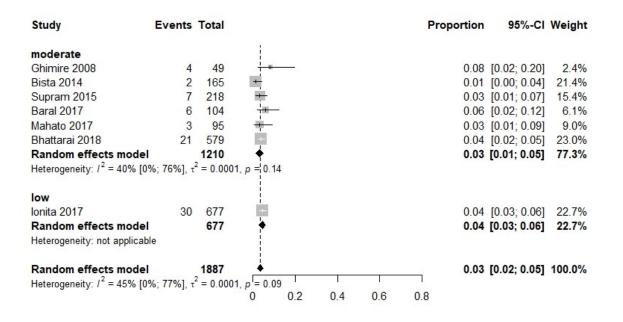
00.0 0.01 0 0.02 Star dard Error C 0 0 0.03 0 0.04 0 • 0.05 0 0 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 В С 0.00 0.00 0.01 0.01 0.02 Star dard Error Star dard Error q 0.03 0.02 0 0 0.04 0 C 0.03 0.05 0.06 0.04 0 0 0.00 0.05 0.10 0.0 0.1 0.2 0.3 0.4 0.5 0.6

Α

# Figure S2: Pooled prevalence of TB coinfection among PLHIV by study methodological quality

Study	Events	Total		Proportion	95%-CI	Weight
moderate						
Ghimire 2004	28	81		0.35	[0.24; 0.46]	8.3%
Dhungana 2008	23	100		0.23	[0.15; 0.32]	8.7%
Sharma 2009	15	150		0.10	[0.06; 0.16]	9.4%
Paudel 2010	18	66		0.27	[0.17; 0.40]	8.2%
Verma 2010	3	62		0.05	[0.01; 0.13]	9.3%
Tiwari 2012	585	1807	-	0.32	[0.30; 0.35]	9.6%
Bohara 2014	5	103		0.05	[0.02; 0.11]	9.4%
Poudyal 2014	72	336		0.21	[0.17; 0.26]	9.4%
Khushbu 2015	48	121		0.40	[0.31; 0.49]	8.6%
Random effects mode	el	2826		0.22	[0.12; 0.32]	80.9%
Heterogeneity: / <sup>2</sup> = 97% [	95%; <mark>98%</mark> ],	$\tau^2 = 0.01$	56, p < 0.01			
low						
Dhungana 2012	32	394		0.08	[0.06; 0.11]	9.6%
Verma 2012	11	184			[0.03; 0.10]	
Random effects mode	el	578		0.07	[0.00; 0.21]	19.1%
Heterogeneity: $I^2 = 0\%$ , $\tau^2$	$p^{2} = 0, p = 0.$	34				
Random effects mode Heterogeneity: / <sup>2</sup> = 97% [		<b>3404</b> τ <sup>2</sup> = 0.01	59, p < 0.01 0 0.1 0.2 0.3 0.4 0.3		[0.10; 0.28]	100.0%

## Figure S3: Pooled prevalence of HBV coinfection among PLHIV by study methodological quality



# Figure S4: Pooled prevalence of HCV coinfection among PLHIV by study methodological quality

Study	Events Total			Proportion	95%-CI	Weight
moderate						
Karki 2009	7 65	- + +		0.11	[0.04; 0.21]	9.9%
Ojha 2013	14 105			0.13	[0.07; 0.21]	10.0%
Bista 2014	29 165			0.18	[0.12; 0.24]	10.0%
Paudel 2014	138 319			0.43	[0.38; 0.49]	10.1%
Supram 2015	9 218	+		0.04	[0.02; 0.08]	10.2%
Bhusal 2016	6 55	- • <u>+</u>		0.11	[0.04; 0.22]	9.8%
Mahato 2017	2 95	+		0.02	[0.00; 0.07]	10.2%
Bhattarai 2018	17 579	+		0.03	[0.02; 0.05]	10.2%
Random effects mode				0.13	[0.02; 0.24]	80.4%
Heterogeneity: / <sup>2</sup> = 97%	[96%; 98%], τ <sup>2</sup> = 0.	0172, p < 0.01				
low						
Ionita 2017	132 677			0.19	[0.17; 0.23]	10.2%
Kakchapati 2017	42 65	1			[0.52; 0.76]	9.4%
Random effects mod	el 742				[0.00; 1.00]	19.6%
Heterogeneity: / <sup>2</sup> = 98%	$[96\%; 99\%], \tau^2 = 0.$	999, p < 0.01				
Random effects mod	el 2343		<u>.</u>	0.10	[0.04; 0.33]	100 0%
Heterogeneity: / <sup>2</sup> = 98%		279 0 0 01		7 0.19	[0.04, 0.33]	100.0%
neterogeneity: / = 90%	$[3170, 3070], \tau = 0.$	0  0.2	0.4 0.6 0.8	1		
		0 0.L	0.1 0.0 0.0			