

Prevalence of HIV, Viral Hepatitis and Tuberculosis in Prisons in the European Union: A Multi-Stage Systematic Review and Meta-Analysis

Babak Moazen^{1,2*}, Kate Dolan³, Sahar Saeedi Moghaddam^{4,5}, Andrea Wirtz⁶
Florian Neuhaus^{1,7}, Heino Stöver², and Albrecht Jahn¹

Background:

Behavioral and structural factors create situations in which people living in prisons are more likely to acquire and transmit major infectious diseases including HIV, viral hepatitis B and C, and tuberculosis (TB). The present study aimed to estimate the prevalence of these major infectious diseases in prisons in the European Union (EU) countries.

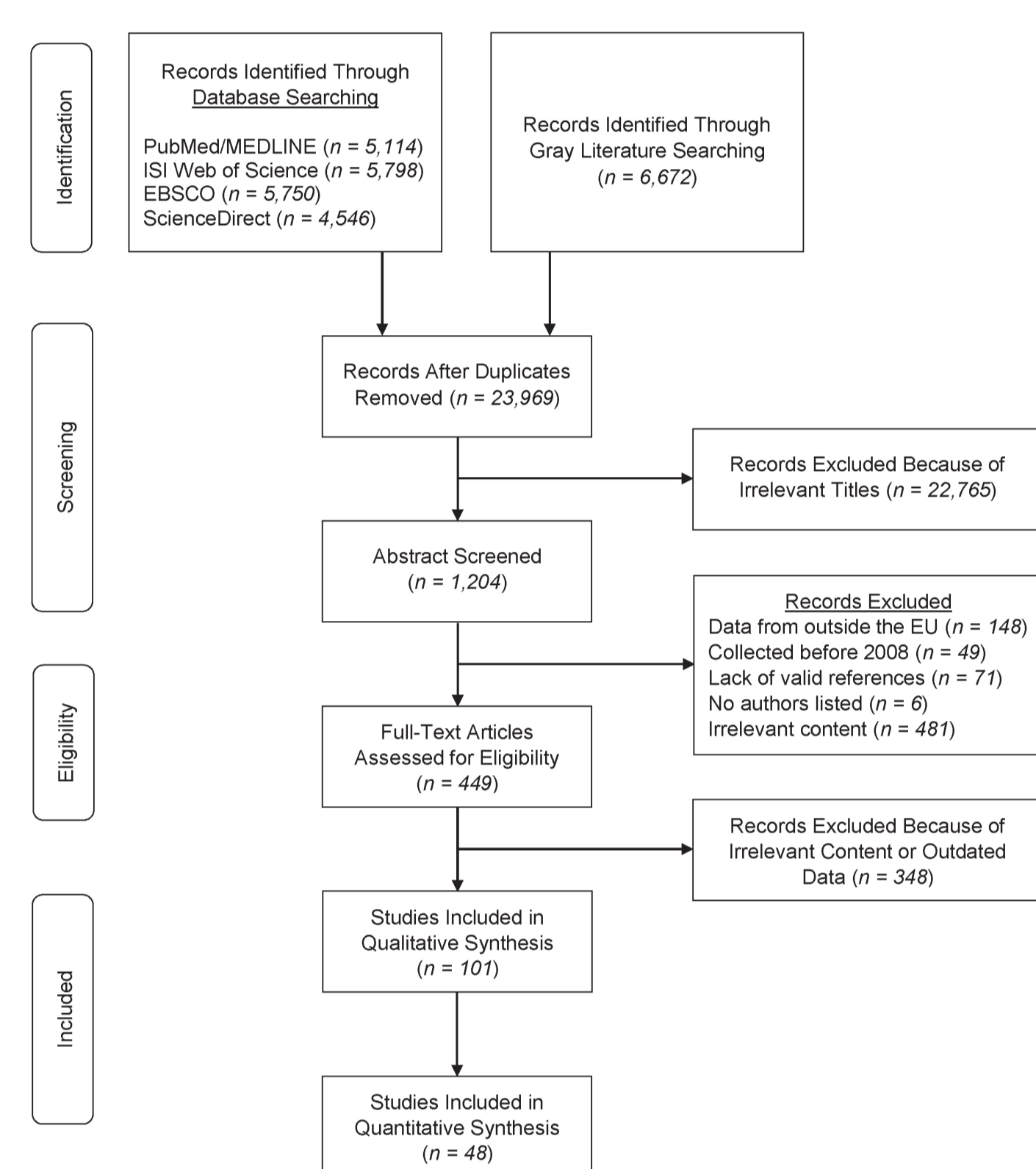


Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram of studies included in the current review, 2008-2018

Methods:

In line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) criteria, we systematically searched 4 databases of peer-reviewed publications (MEDLINE (PubMed), ISI Web of Science, EBSCO, and ScienceDirect) and 53 databases containing gray literature to collect data published from January 2008 to August 2018. Estimates of biologically confirmed HIV, viral hepatitis B and C, and TB were extracted from identified reports.

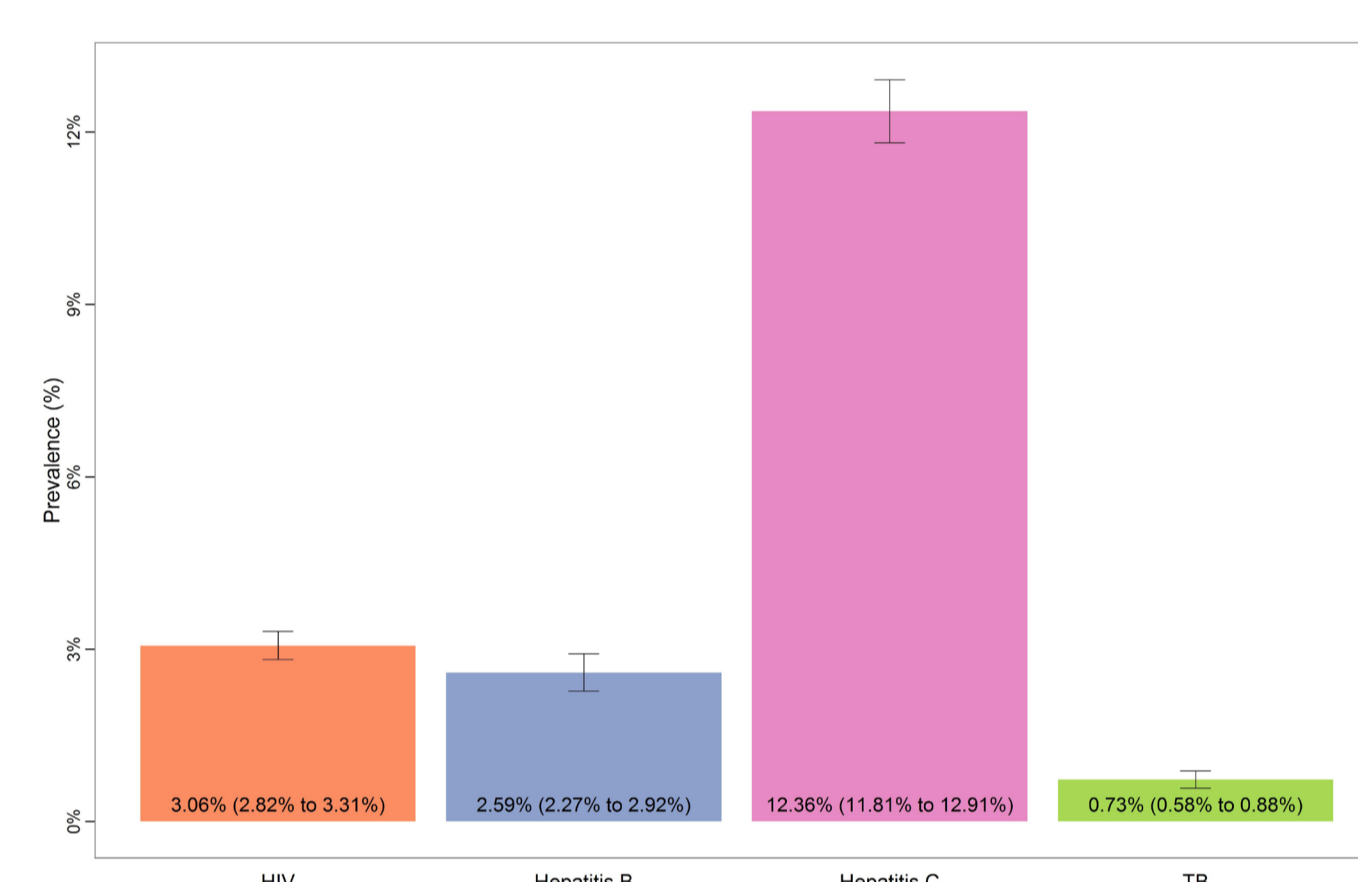


Figure 2. Pooled prevalence of HIV, HBV, HCV, and TB in prisons in the European Union

Results:

A total of 23,969 documents (17,297 papers and 6,672 gray documents) were identified and reviewed, of which 101 were included in qualitative synthesis and 48 were included in the meta-analysis (Figure 1). According to the meta-analysis, the overall HIV prevalence was 3.06% (95% Confidence Interval (CI): 2.82%-3.31%), 3.29% (2.17%-4.41%) among male prisoners, and 3.74% (0.81%-6.66%) female prisoners. The overall HBV prevalence was 2.59% (2.27%-2.92%), 4.44% (2.75%-6.13%) among male, and 2.52% (1.04%-3.99%) female prisoners. Overall prevalence of HCV was 12.36% (11.81%-12.91%), while the prevalence was 20.36% (16.86%-23.85%) among male, and 15.26% (7.66%-22.86%) female prisoners (Figure 2). The overall TB prevalence was 0.73% (0.58%-0.88%), while due to the lack of data we were unable to estimate the prevalence of TB by genders.

Conclusions:

Compared with the latest estimates of the European Centre for Disease Prevention and Control (ECDC), our findings reveals that HIV, hepatitis B, hepatitis C, and tuberculosis in prisons are 546, 432, 1405, and 72-folds more prevalent than among the general population of the EU, respectively. The excessively high prevalence of HIV, hepatitis B and C, and TB is a serious cause for public health concern in the EU. Urgent and concrete actions are required to mitigate the burden of the major infectious diseases in prisons and ensure appropriate access to prevention and care for people exiting detention facilities in this region. The EU prison health policy makers are recommended to initiate and expand acceptable, accessible, and high-quality services to control HIV transmission in prisons.

Affiliations

1. Heidelberg Institute of Global Health, Heidelberg University, Heidelberg, Germany
2. Department of Health and Social Work, Institute of Addiction Research (ISFF), Frankfurt University of Applied Sciences, Frankfurt/Main, Germany
3. Program of International Research and Training, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, Australia
4. Non-Communicable Diseases Research Center, Endocrinology and Metabolism Population Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran
5. Endocrinology and Metabolism Research Center, Endocrinology and Metabolism Clinical Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran
6. Center for Public Health and Human Rights, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland
7. School of Medicine and Clinical Sciences, Levy Mwanawasa Medical University, Lusaka, Zambia

The authors declare no competing interests.

* Correspondence:

Babak Moazen, MSc, PhD Candidate
Heidelberg Institute of Global Health, Heidelberg University
Bergheimer Str. 20, Zimmer 317, 69115 Heidelberg, Germany
Phone: +49 (0) 6221 56-36156
Fax: +49 (0) 6221 56-5948
Email: babak.moazen@uni-heidelberg.de