

Background

People who inject drugs (PWID) experience drug-related harms including blood-borne infections such as Human Immunodeficiency Virus (HIV), Hepatitis C (HCV), Hepatitis B (HBV), and bacteremia/sepsis. Sharing needles and syringes is a key route for transmission of these infections.¹

Needle and syringe programmes (NSP) are thought to be a critical component of harm reduction interventions among PWID.^{1,2}

Objectives

Our primary objective was to conduct an overview of systematic reviews that evaluated the evidence of the effectiveness of NSP in reducing blood-borne infection transmission and injecting risk behaviours (IRB) in PWID.

Our secondary objective was to assess how different aspects of NSP provision, including provider, setting, coverage and any related component delivered in parallel such as harm reduction services and opiate substitution therapy, modified the effect of NSP, with a particular focus on pharmacy-driven NSP.

Methods

We included systematic reviews that included PWID (excluding studies exclusively on prison and consumption rooms settings), addressed community-based NSP, and provided estimates of the effect regarding incidence/prevalence of HIV, HCV, HBV and bacteremia/sepsis, and/or measures of IRB. Systematic literature searches were undertaken on relevant databases, including EMBASE, MEDLINE, and PsychINFO (up to May 2015). For each included review we extracted objectives, eligibility criteria and methods used. For each included review, we identified relevant studies based on the eligibility criteria of this overview and extracted data on methods and findings, including risk of bias and quality of evidence as assessed by review authors.

We evaluated the risk of bias of each systematic review using the ROBIS tool³. We categorized reviews by type of reported outcomes and type of analysis (with or without meta-analysis); no additional statistical analysis was performed.

The protocol of this systematic review was registered in Prospective Register of Systematic Reviews (PROSPERO 2015: CRD42015026145).

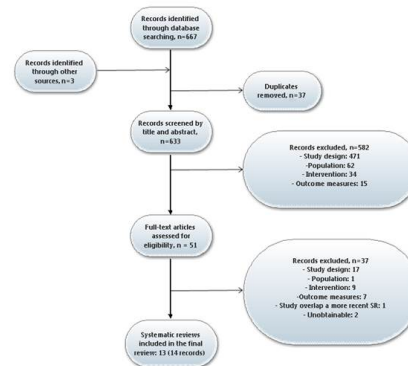
References

1. Ball, A. et al 1998. HIV prevention among injecting drug users: responses in developing and transitional countries. Public health reports (Washington, D. C. : 1974), 113 Suppl(June), pp.170–181.
2. Torre, C., 2009. Syringe Exchange Programmes in the Context of Harm Reduction. Arquivos de Medicina, 23(3), pp.119–31.
3. Whiting, P. et al., 2015. ROBIS: A new tool to assess risk of bias in systematic reviews was developed. *Journal of clinical epidemiology*. Available at: <http://www.jclinepi.com/article/S089543561500308X/fulltext> [Accessed November 5, 2015]

Results

The search and screening results are summarised in Figure 1.

Figure 1 – Screening decisions up to date as of 30th June 2015. Original search date 12th May 2015.



We included 13 reviews with 133 relevant unique studies published between 1989 and 2012.

Eight reviews reported outcomes related to HCV, 9 on HIV and 6 on IRB. Meta-analysis was performed in 4 reviews. Methods used varied at all levels of design and conduct. Only two reviews were considered to have low risk of bias using the ROBIS tool, and most included studies were considered to have low methodological quality by review authors, being the overall quality of the evidence higher for HIV transmission and IRB than for HCV infection. We found that NSP was effective in reducing HIV transmission and IRB among PWID, while there were mixed results regarding a reduction of HCV infection. However, for HCV infection, the strength of the evidence increases if the intervention is not solely NSP, but includes other components. Some studies evaluated and concluded that high level of coverage provided in full harm reduction interventions seem to have a positive impact.

Conclusions

There is moderate quality evidence that NSP is likely effective in reducing HIV transmission and IRB among PWID. There is low to moderate quality evidence that NSP in the context of a comprehensive harm reduction strategy is likely effective in reducing HCV infection. Full harm reduction interventions provided at structural level and in multi-component programmes seem to be more beneficial. The scarcity and the lack of robust quality of evidence highlight the need for future community-level studies of adequate design to support these conclusions.