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Drug Treatment Policy in the Criminal Justice System: A Scoping Literature Review

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Abstract This scoping review sought to map the emerging evidence on use of harm minimization drug treatment programs in criminal justice settings. A search of various data bases including *Cochrane Database of Systematic Reviews Medline*, *ProQuest*, *SAGE Premier*, *Scopus*, *Taylor & Francis Online*, and *Web of Science* yielded eight studies that met inclusion criteria. The available evidence suggests increasing adoption of harm minimization policy oriented programs by countries around the world. Specific programs adopted include needle and syringe exchange, methadone maintenance, buprenorphine maintenance and treatment in lieu of incarceration. Each of these programs has evidence to support their effectiveness in relation to individual harm reduction, disease reduction, increase treatment retention and reduced criminality. This article considers implications of the adoption of harm minimization policies by criminal justice systems.

Keywords Drug treatment policy · Harm minimization · Zero tolerance · Criminal justice system

Over the past 30 years harm minimization practices have emerged as the single most influential factor impacting on drug treatment policy (McKeganey, 2011). This

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movement in policy (Levine, 2001 as cited in McKeganey, 2011) is replacing the repression principles of zero tolerance policies (Stevens, 2011). By national jurisdiction, harm minimisation is supported in Australia, United Kingdom, New Zealand, Netherlands Switzerland and some areas in the USA (Ritter, 2010). Harm minimization policies are implemented in Finland to a limited extent (Tourunen, Weckroth, & Kaskela, 2012) and some Eastern European countries implement partial harm minimization practices (Clark, 2013). By contrast, Russia adopts a zero tolerance policy (Golichenko & Sarang, 2013). The purpose of this paper is to map the evidence on the types of harm minimization programs both within and across national settings, their extent and the perceived benefit to the criminal justice systems that implement them.

It is also evident in some policy practises that "gray" areas exist where a drug is illegal in some respects but legal in others. For example, in some US jurisdictions marijuana (cannabis) has been decriminalised and legalised only for medicinal purposes (Garland et al., 2012). Furthermore, criminal justice drug treatment policies are likely influenced by national or regional prerogatives; and perhaps less so by the documented evidence of their effectiveness (Clark, 2013). For instance, it has been reported that those who had indicated prescription drug abuse were less likely to be criminally charged than participants who indicated heroin abuse (Harris, Jacapraro, & Rastegar, 2012).

Harm minimization policies are premised on promoting healthy criminal justice system environments, and public health protections post-incarceration. For instance, prison custody is effective for early diagnosis and treatment of HIV and AIDS (Rosen, Golin, Grodensky, May, Bowling, DeVellis, White & Wohn, 2015), especially for inmates with a history of substance use (Haley, Golin, Farel et al., 2014). HIV and AIDS treatment adherence with a harm minimization goal is a positive outcome for inmates with the need for such services. Furthermore, harm minimization programs such as needle and syringe are associated with a lower risk for contracting HIV, Hepatitis B and or C (Aspinall et al., 2014). By contrast, zero tolerance laws have been blamed for the spread of blood born viruses because the incarceration of injecting drug users exposes them to the prison population where the risk of HIV infection is highest (Clark, 2013). This appears to be the case in jurisdictions where zero tolerance drug treatment policy is practiced (Clark, 2013). Zero tolerance policy exposes people with a history of drug dependency to severe health risks from denied access to essential medical assistance (Golichenko & Sarang, 2013). If adequate treatment is not offered to such individuals, adverse outcome consequences can be significant and costly for both the individual and the community (Gardiner et al., 2012). Moreover, the costs of incarceration are significantly higher than treatment and without interventions to prevent reoffending from substance use (Anglin, Nosyk, Jaffe, Urada, & Evans, 2013).

Accordingly, informed decisions based on evidence are needed for best drug treatment policy and practice (Ritter, 2010). Few studies have addressed drug treatment policy qualities within the criminal justice system or summarised the available evidence. This scoping review addressed two specific research questions: (a) what are the drug treatment policy trends in the criminal justice system? (b) what is the relative effectiveness of types of drug treatment policies (that is, do these treatments support the health of the user and or community)?

A scoping systematic review seeks to map the evidence for essential qualities to characterize phenomenon of interest to inform further study (Arksey & O'Malley,

2005). It is particularly appropriate to study trends in the data for emerging or relatively under-researched topics or practices.

Method

Search Strategy for Identification of Studies

The Cochrane Database of Systematic Reviews was searched to determine if there were any previous reviews on drug treatment policy. The search terms used included; justice system, drug treatment, prisoner, zero tolerance, harm minimization, prison, illicit drug rehabilitation, substance abuse treatment, criminal justice, drug treatment sentencing or drug treatment arrest were used interchangeably. The search yielded 21 results although none of which were on drug treatment policy within the criminal justice system, justifying the need for this scoping review.

Next, a total of six databases for studies on drug treatment policy in the criminal justice system were searched: Medline, ProQuest, SAGE Premier, Scopus, Taylor & Francis Online, and Web of Science. In addition, we also searched specific journals; *American Journal of Criminal Justice*, and *Drug and Alcohol Review*. For each database searched, the terms: harm minimization, zero tolerance, drug treatment, drug policy, policy, drug abuse, treatment, drug treatment policy, effectiveness, criminal justice and programs were used interchangeably. The search limits included peer reviewed articles written in English and published between 2010 and 2015.

Seven studies that resulted were based on their direct relevance to drug treatment policy. These were then analysed to consider the type of drug policy trending (see Fig. 1). With harm minimization policy identified as the prominent drug policy, a secondary search was conducted to source relevant studies pertaining to drug treatment programs from this policy approach. Seven studies were subsequently selected for inclusion in this review.

Data Extraction and Management Studies were selected for inclusion in this review if they met the following inclusion criteria: (a) an explicit focus on drug treatment policy relating to any of the stages within the criminal justice system including arrest, prosecution, trial, sentencing, remand or prison; (b) specific reference to either a Harm Minimisation or Zero Tolerance policy; (c) reporting on evidence of efficacy; (d) utilized case studies, cross-sectional, or longitudinal studies.

Results and Discussion

Table 1 presents the key findings from the related studies. The three distinct drug treatment policy trends affecting those in the criminal justice system were (a) needle and syringe programs, (b) methadone maintenance/buprenorphine maintenance programs and (c) treatment in lieu of incarceration programs. Needle and syringe exchange and methadone maintenance/buprenorphine programs along with treatment in lieu of incarceration have all been used in a criminal justice setting.

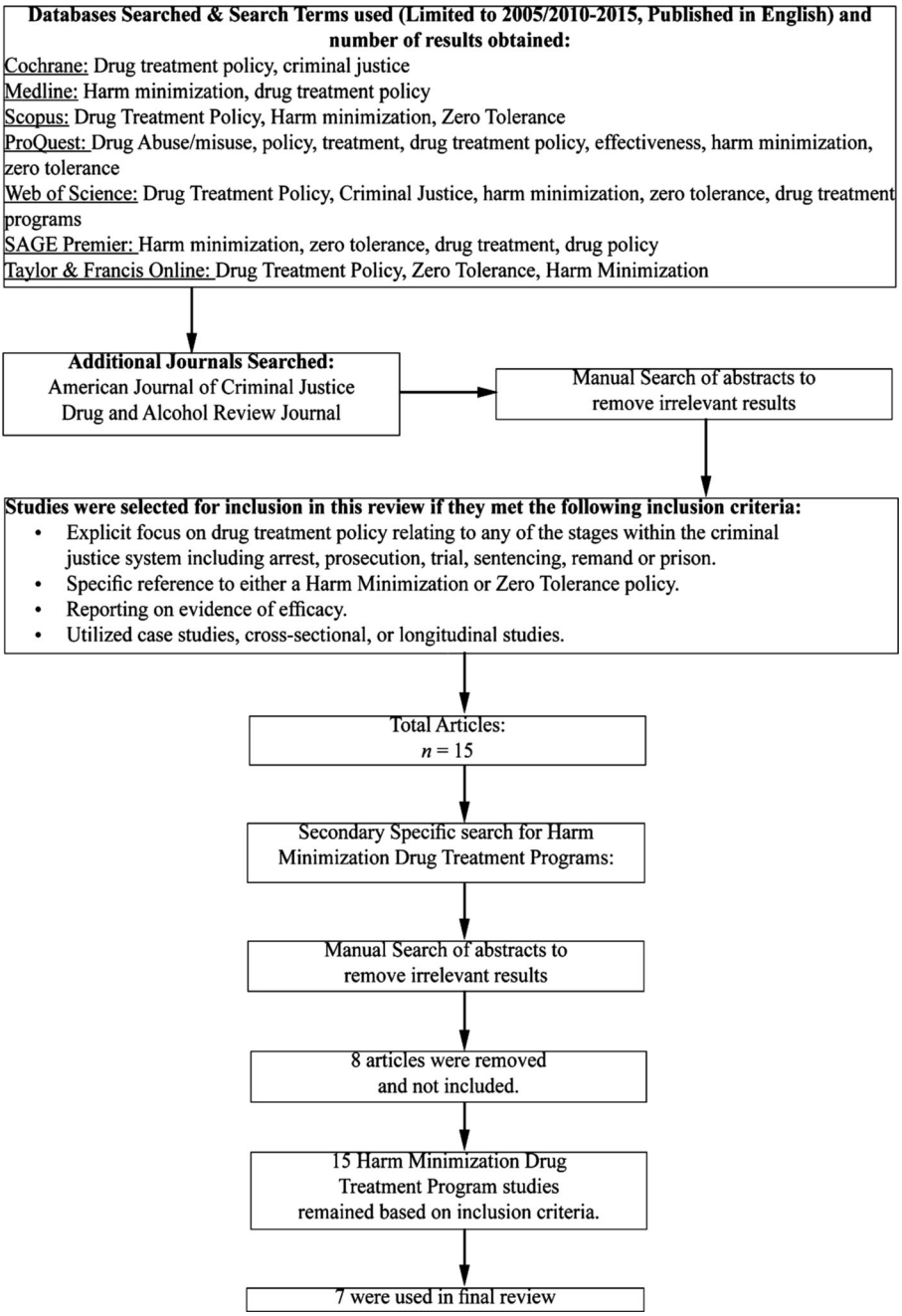

Fig. 1 Article search process for inclusion in scoping literature review

Outcome measures vary dependent on the drug treatment program studied. In respect to needle and syringe exchange programs the prevalence of HIV and number of needles or syringes exchanged are the main outcome measures used in the trending

Table 1 Descriptive characteristics of harm minimization drug treatment programs

Author publication date	Study design quality	Population	Drug treatment program	Relevant findings
Aspinall et al. (2014)	Systematic review and meta-analysis	Reviews covering 1980–2008 and primary articles covering 2008–2012	Needle and syringe exchange	Exposure to needle and syringe exchange harm minimization programs was associated with a reduction in the transmission of HIV among people who inject drugs.
Luo et al. (2015)	Cross-sectional study	Intravenous drug users in China ($n = 3494$)	Needle and syringe exchange	Risks for HIV infection 1.67 times less with a needle and syringe exchange harm minimization than without.
Uuskula et al. (2011)	Survey	Injecting drug users ($n = 1027$) in Tallinn Estonia	Needle and syringe exchange	A decrease in HIV prevalence was identified among new injectors with the implementation of syringe exchange harm minimization programs.
Kidorf, King, Peirce, Kolodner, & Brooner, (2011)	Randomized experimental design	Newly registered syringe exchange program participants who inject heroin ($n = 113$) compared to program non-participants ($n = 127$)	Needle and syringe exchange	Participants who were enrolled in a harm minimization opioid and cocaine use treatment intervention reported less substance use, involvement in illegal activities and re-incarceration compared to participants not enrolled in treatment.
Fu, Zaller, Yokell, Bazazi, & Rich, (2013)	Survey	Massachusetts and Rhode Island inmates ($n = 215$)	Methadone maintenance	Harm minimization with forced methadone withdrawal during incarceration was a deterrent for seeking a methadone maintenance treatment in a community setting.
Gordon, Kinlock, Couvillion, Schwartz, & O'Grady, (2012)	Randomized clinical trial	Pre-release male inmates with pre-incarceration heroin dependence ($n = 211$)	Methadone maintenance	Participants with harm minimization methadone maintenance were significantly predicted to adhere to treatment post intervention.
Harris et al. (2012)	Cross-sectional	Participants who had been given at least one prescription for buprenorphine ($n = 252$).	Buprenorphine maintenance treatment	Harm minimization oriented buprenorphine treatment was associated with a decline in re-offending.
Anglin, Nosyk, Jaffe, Urada, & Evans, 2013	Time-lagged Cohort Study	Control group of individuals who met SACPA eligibility prior to its implementation ($n = 47\ 355$) and intervention group ($n = 41\ 607$)	Treatment in lieu of incarceration	The costs of incarceration were greater than the costs of treatment. Reducing recidivism for Ethnics and Hispanics resulted in greater incremental cost savings with SACPA implementation.

literature. Outcome measures used to examine the effectiveness of methadone maintenance have mainly been retention rates for treatment and reduced criminal activity. Overall harm minimization drug treatments have demonstrated their effectiveness through the decreased spread of disease, reduced drug use and criminality and reduced administration of justice costs.

Needle and Syringe Exchange Programs A systematic review of the association between needle and syringe programs and HIV transmission (Aspinall et al., 2014). This covered the period 1980–2012 and found an exposure to needle and syringe exchange programs was associated with a reduction in the transmission of HIV across all studies indicating its effectiveness among people who inject drugs. Additional harm reduction strategies could have contributed to the reduction in HIV observed given the time span of data collection. This may indicate needle and syringe exchange programs are only a component in the injecting risk and other HIV risk behaviour reductions.

A cross-sectional study was conducted in China by Luo et al. (2015) to examine the association between participation in a needle exchange program and HIV infection among intravenous drug users ($n = 3494$; 55 % with needle and syringe exchange program at least once in their lifetime). Prevalence of HIV was the primary measure used. Those who had not participated in a needle and syringe exchange program were 1.67 times more likely to be HIV positive comparatively to those who had participated in a needle and syringe exchange program. These results indicated substantially lower risk of HIV infection is associated with participation in a needle and syringe exchange program among injecting drug users in China.

Similarly, a syringe exchange programs study to reduce HIV infection risk was conducted in Tallinn Estonia by (Uuskula et al., 2011). The study, which ran over 3 years enrolled a total of 1027 injecting drug user participants (80 % male) and their mean age was 24–27 years. Implementation of syringe exchange programs was identified with a decrease in HIV prevalence among new injectors.

A randomized experimental design study was conducted in Baltimore County (Kidorf et al., 2011). Drug use rates, risky behaviours and illegal activity among newly registered syringe exchange program participants (18 to 65 years) who inject heroin ($n = 113$) were observed over a 4 month period and compared to non-participants ($n = 127$). When baseline differences were controlled for, participants who were enrolled in treatment reported less days of opioid and cocaine use, injecting drug use, illegal activities and incarceration compared to participants not enrolled in treatment. The findings of this study identified the harm reduction benefits of needle and syringe exchange programs.

Methadone Maintenance/Buprenorphine Treatment Programs The transition from a harm minimization program into incarceration is explored in respect to two eastern states of the United States of America. Massachusetts and Rhode Island. Rhode Island routinely force inmates to withdraw from methadone upon incarceration (Fu et al., 2013). In a study on its deterrent effects on for the use of methadone use by inmates ($n = 215$), more than half of its participants reported that forced methadone withdrawal during incarceration was a deterrent for seeking a methadone maintenance treatment in a community setting.

Similarly, a randomised clinical trial conducted in the United States (Gordon et al., 2012) contrasted harm mimimization policy application with 211 pre-release male inmates with pre-incarceration heroin dependence. The participants were randomly assigned to one of three treatment conditions; counselling only in prison ($n = 70$), counselling in prison with transfer to methadone maintenance treatment upon release ($n = 70$) and counselling plus methadone maintenance in prison continued in a community based methadone maintenance program upon release ($n = 71$). Participants in the groups which included methadone maintenance were significantly predicted to enter and complete treatment.

Buprenorphine maintenance treatment was suggested to be more accessible to released criminal offenders due to being prescribed buprenorphine as opposed to the attendance requirements of a methadone maintenance program (Harris et al., 2012). The rates of criminal charges for primary care clinic based buprenorphine maintenance therapy were determined (Harris et al., 2012). Demographic and outcome data were collected for 252 participants who had been given at least one prescription for buprenorphine. Criminal charges prior to and 2 years after initiation of treatment obtained from a public database were recorded for each participant. Of the participants who were opioid-negative for six or more months during the first year of treatment there was a significant decline in criminal cases. Having recent criminal charges was significantly associated with criminal charges after treatment initiation according to a multivariable analysis. Additionally participants who were significantly less likely to have subsequent criminal charges were those on opioid maintenance treatment prior to enrolment in office based buprenorphine therapy. The study concluded the initiation of office based buprenorphine treatment did not have a significant impact on subsequent criminal charges for participants who had prior criminal charges. This finding may have resulted due to the less intensive monitoring and psychosocial support offered to participants comparatively to what is received in methadone maintenance treatment programs which have reported greater success.

Diversion to Treatment Programs Harm minimization programs where successfully implemented have significant costs savings to the administration of justice. For instance, The California Substance Abuse and Crime Prevention Act mandates continued parole with substance abuse treatment in lieu of incarceration for adult offenders convicted of nonviolent drug offences and parole or probation violators. Anglin et al. (2013) indicated that the costs of incarceration were greater than the costs of treatment. The state wide policy effect was estimated as an adjusted saving of $2317 per offender over a 30 month post-conviction period.

Summary of the Key Findings In respect to the available evidence for needle and syringe exchange programs, exposure to and participation in needle and syring programs were associated with a reduction in HIV transmission. This indicates the programs effectiveness amoung injecting drug users. A decrease in HIV prevalence among new injectors coincided with the implementation of syringe exchange programs, and when baseline differences were controlled for, participants who were enrolled in treatment reported less days of opioid and cocaine use, injecting drug use, illegal activities and incarceration compared to participants not enrolled in treatment.

In the studies which addressed methadone maintenance treatment programs positive outcomes were also highlighted. Participants in the study conducted by Harris et al. (2012) were significantly less likely to have subsequent criminal charges if they were on opioid maintenance treatment prior to enrolment in office based buprenorphine therapy, indicating a positive effect of methadone maintenance. It was concluded, the initiation of office based buprenorphine treatment did not have a significant impact on subsequent criminal charges for participants who had prior criminal charges. This finding may have resulted due to the less intensive monitoring and psychosocial support offered to participants comparatively to what is received in methadone maintenance treatment programs which have reported greater success.

Treatments in lieu of incarceration were observed to be cost effective. The costs of incarceration were greater than the costs of treatment. A greater incremental cost saving was observed through reducing recidivism for ethnic groups and Hispanics who have markedly higher conviction and incarceration rates, under the Substance Abuse and Crime Prevention legislation.

Implications for Research and Practice

This scoping review poses implications for drug treatment policy development decisions. If policies are based on evidence then the available literature provides most support for harm minimisation policy and practices. No evidence was found to support the effectiveness, cost or otherwise of a zero tolerance policy which merely results in the offender's incarceration.

Finding from this study suggest a growing body of evidence for the effectiveness of harm minimization drug treatment programs. Each of the programs; needle and syringe exchange, methadone maintenance, buprenorphine maintenance and treatment in lieu of incarceration had evidence to support their effectiveness in relation to individual harm reduction, disease reduction, increase treatment retention and reduced criminality. Given it has been suggested in Clark (2013) some criminal justice drug treatment policies are likely influenced by national or regional prerogatives; rather than documented evidence of their effectiveness, this review provides evidence on which some future policy decisions may be informed.

Ethics of Harm Minimization Policies A difference in opinion has been identified on drug treatment legislation between the general public and people who inject drugs (Lancaster et al. (2013)). Nonetheless, there is a general consensus that problems exist within current drug treatment policy (Garland et al., 2012). Some would argue drug harm resulting from existing drug laws can only be reduced through legalisation or decriminalisation of illegal substances (McKeganey, 2011). From a policy perspective, the costs of incarceration are much greater and less cost effective than harm prevention strategies (Clark, 2013). Stevens (2011) argues that perhaps the human rights costs to an individual who uses drugs would also be greater under zero tolerance policy.

Irrespective of the drug treatment policy adopted, people who use illicit drugs are often underrepresented in the process of drug treatment policy decision making, while most are directly affected by it (Lancaster, Ritter, & Stafford, 2013). Future drug

treatment policy studies might aim to include people who use drugs in their participant populations to allow for a more accurate representation of the attitudes surrounding drug treatment policy.

Dispenser Technology Adoption User oriented or safe drug dispensers are increasingly used in the community, and these would be adaptable for use with prison populations as part of harm minimization intervention. In Paris syringe dispensing machines have been installed to allow accessibility to clean syringes at any time to injecting drug users (Duplessy & Reynaud, 2014). Evidence from their usage suggest injecting drug users were effectively disposing their used syringes and their ability to do so was higher than that of people with diabetes or HCV treated patients (Duplessy & Reynaud, 2014). These technological advances in syringe dispensing machines allowing data to be collected including; number of needles exchanged or collected and timeframes for collection suggest prospects for adoption and use in the criminal justice system within a harm minimization regimen.

Person-Variable Effects Policy effects are mediated by personal variables in their influence on harm minimization outcomes. Personal variables mediated harm minimization drug treatment compliance among four drug treatment programs ($n = 289$) throughout the Greater Los Angeles area (Hampton et al., 2011). This study reported having hope and motivation could explain treatment adherence among volunteer participants (79.9 %) more so than those with coercion (21.1 %).

Limitations of the Study

A limitation of this scoping review was the paucity of published literature pertaining to drug treatment policy in a criminal justice setting. The observed trend in the published material was towards harm minimisation drug treatment programs. Very little is published in regard to zero tolerance drug treatment policy and no published literature was found to support its effectiveness. Additionally, some practices (such as those for use of drug dispensers) suggest a need for further exploration within criminal justice populations. Outcome results for harm minimization programs using general population participants may not be transferable to those within the criminal justice system. Nonetheless, positive program outcomes were identified for criminal justice system populations in limited published studies in relation to some of the harm minimisation programs.

Conclusions

The evidence on harm minimization drug treatment is accumulating and in need of scoping to map the main trends which might be important to criminal justice system drug policy advisement. This study sought to explore drug treatment policy and practices in the criminal justice system with the purpose of mapping evidence to characterise types of programs in place, their nature or qualities and comparative worth to purpose. This mapped evidence suggests the effectiveness of harm minimization policy and programs which are increasingly being adopted by countries around the world.

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Compliance with Ethical Standards

Conflict of Interest The authors declare no known conflict of interest.

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