



RESEARCH NOTE

A systematic review of criminal recidivism rates worldwide: 3-year update [version 1; peer review: 1 approved, 2 approved with reservations]

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Abstract

Background: Comparing recidivism rates between countries may provide useful information about the relative effectiveness of different criminal justice policies. A previous 2015 review identified criminal recidivism data for 18 countries and found little consistency in outcome definitions and time periods. We aimed to update recidivism rates in prisoners internationally.

Methods: We conducted a systematic review of criminal recidivism rates in prisoners and followed PRISMA guidelines. Using three bibliographic indexes, we carried out non-country-specific and targeted searches for 50 countries with the largest total prison populations. We included reports and studies of released prisoners that reported re-arrest, reconviction and reincarceration rates. Meta-analysis was not possible due to multiple sources of heterogeneity.

Results: We identified criminal recidivism information for 23 countries. Of the 50 countries with the largest prison populations, 10 reported recidivism rates for prisoners. The most commonly reported outcome was the 2-year reconviction rate. We were able to examine recidivism over different time periods for 11 countries and found that most reported small changes in official recidivism rates. Overall, for 2-year follow-up period, reported re-arrest rates were between 26% and 60%, reconviction rates ranged from 20% to 63%, and reimprisonment rates varied from 14 to 45%.

Conclusions: Although some countries made efforts to improve reporting, recidivism rates are not comparable between countries. Criminal justice agencies should consider using reporting guidelines described here to update their data.

Keywords

prison, prisoners, recidivism, repeat offending, re-arrest, reconviction, reimprisonment, systematic review

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Introduction

The number of prisoners and the associated economic burden continue to increase worldwide (MacDonald, 2018; McLaughlin *et al.*, 2016; Penal Reform International, 2018). Recently released prisoners often constitute a high-risk group that commit the majority of violent crimes (Andersen & Skardhamar, 2014; Ministry of Justice, 2018), with around one-fifth of all crimes in any year being committed by those released from custody (Petersilia, 2011). With the increasing recognition of the health burden of violence and crime (World Health Organisation, 2014), reducing recidivism can potentially make a large contribution to public safety and public health.

Recidivism rates (or rates of repeat offending) are often used as a measure of effectiveness of prison systems and post-release offender management programmes (Ministry of Justice, 2017). The comparison of recidivism rates between countries and regions may provide useful information about relative effectiveness of different sentencing and rehabilitation policies. However, the operational definitions of recidivism may vary significantly between countries. In a previous systematic review, recidivism rates among prisoners worldwide, published before December 2014, were examined (Fazel & Wolf, 2015) and differences in outcome definitions, reporting practices and their comparability between countries were outlined. In addition, a proposed reporting guideline to facilitate international comparisons of recidivism statistics was published.

Here, we provide an update on recidivism rates in prisoners worldwide.

Methods

This review followed the methods of the previously published study by Fazel & Wolf (2015). We searched MEDLINE with no language and publication time restrictions. The keywords included the names of the 50 countries with largest prison populations in absolute terms (World Prison Brief, 2018) and a list of commonly reported outcomes (Figure 1). Google Scholar and Google Web were used for subsequent targeted searches. In addition, we scanned reference lists of included documents. In case of multiple reports identified for the same country, we extracted the most recent data. Studies for geographical regions within the country were included if the national information were unavailable or dated.

We included cohorts where reconviction, re-arrest, and re-imprisonment rates in released prisoners were examined. We excluded studies of recidivism in individuals receiving non-custodial sentences or in heterogeneous samples of offenders without data for a subgroup of released prisoners. If no new data had been identified for a particular country, we reported the rates from the original review (Fazel & Wolf, 2015). Due to

heterogeneity in outcome definition and time periods, meta-analysis was not conducted.

DY and PS conducted the search and extracted the data on country, sample selection, definitions of outcomes and rates. Uncertainties were checked with SF.

Results

We identified 27 publications that reported recidivism rates in released prisoners from 23 countries (Table 1 and Table 2). Of the 50 countries with the largest prison populations, recidivism statistics were identified for 10 countries. The data were published by governmental agencies apart from one published thesis (Yeoman, 2015). In addition, we identified several publications that reported cross-sectional data on recidivism (i.e. how many current prisoners had previous convictions; from Brunei, Finland, Ghana, India, Russia and Thailand) but these did not provide information on time at risk and were excluded.

For all reported outcomes, a 2-year follow-up period was the most commonly used. The 2-year re-arrest rates ranged from 26% (Singapore) to 60% (USA), two-year reconviction rates ranged from 20% (Norway) to 63% (Denmark), and two-year reimprisonment rates ranged from 14% (USA – Oregon) to 43% (Canada – Quebec, New Zealand) (see Table 3 for 2-year rates from included countries).

We additionally compared reconviction rates examined in the previous review (Fazel & Wolf, 2015) with updated information (Table 4).

Discussion

In this systematic review, we have reported prisoner recidivism rates around the world and found that 10 out of 50 countries with the largest prison populations reported recidivism statistics for cohorts of released prisoners. In addition, although some jurisdictions have made efforts to increase comparability of recidivism statistics (e.g., Northern Ireland implemented the same reconviction criteria as England and Wales), overall recidivism rates remain difficult to compare between countries because of significant variations in outcome definitions and reporting practices. For two countries that were included in the original 2015 review, no new published data was identified (Finland and Norway).

Overall, for the countries with updated data available, any changes in recidivism rates over time were small where there were no obvious revisions to reporting practices. This contrasts with reductions in self-reported crime in some surveys in high-income countries such as England and Wales (Office for National Statistics, 2018). Changes in rates were observed in those countries that changed the operationalisation of the outcome or the

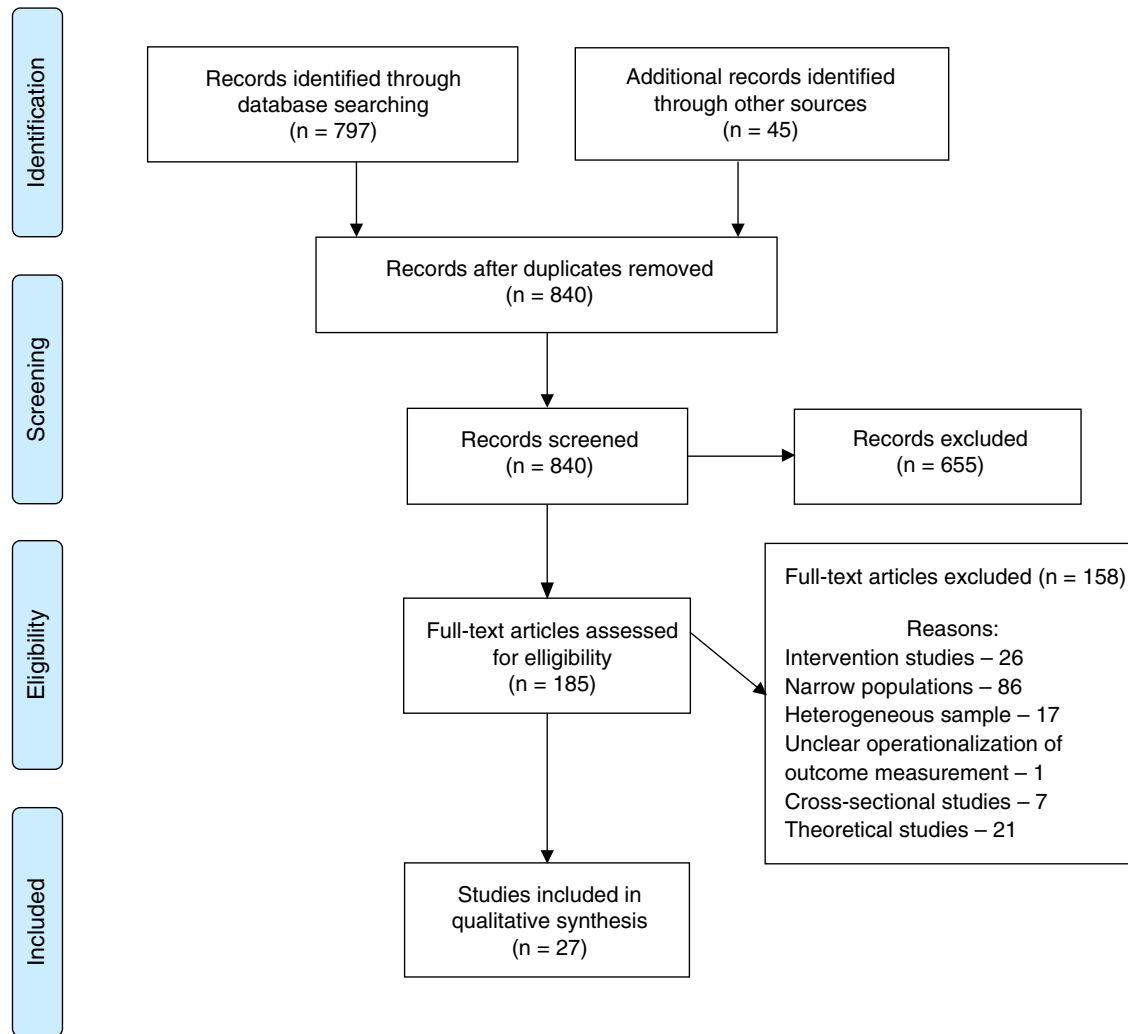


Figure 1. PRISMA flow diagram. Search on Ovid MEDLINE, 1946 to November 25, 2018, with no language restrictions: (recidivism OR re-imprisonment OR reconviction OR repeat offending) AND (USA OR United States OR China OR Russia* OR Brazil OR India OR Thailand OR Indonesia OR Turkey OR Iran OR Mexico OR Philippines OR South Africa OR Vietnam OR Colombia OR Ethiopia OR Egypt OR Bangladesh OR Peru OR Pakistan OR United Kingdom OR Morocco OR Argentina OR Myanmar OR Burma OR Nigeria OR Poland OR France OR Taiwan OR Germany OR Saudi Arabia OR Rwanda OR Algeria OR Italy OR Spain OR Cuba OR Venezuela OR Malaysia OR South Korea OR Uganda OR Kenya OR Japan OR Iraq OR Uzbekistan OR Chile OR Australia OR Canada OR Salvador OR Ecuador OR Belarus OR Kazakhstan).

ways they collect and report data. One exception to this is the Republic of Ireland, where the recidivism has decreased by 6% in 3 years in the absence of any obvious changes in reporting practices. This downward trend may reflect improved effectiveness of Irish prison services and post-release rehabilitation. At the same time, the number of people in the released prisoners' cohort nearly doubled from 5,489 in 2008 (Central Statistics Office, 2013) to 9,339 in 2010 (Central Statistics Office,

2016), and this decrease in reconviction rates may reflect the inclusion of lower risk individuals in the newer cohort.

We conclude that international comparisons between countries remain problematic, and the use of a checklist (Appendix 1; Fazel *et al.*, 2019a) may facilitate more consistent and transparent reporting of recidivism rates.

Table 1. Description of the extracted data.

Country	Study	Description of outcomes	Follow-up	Notes and exclusions
Australia	Australian Government, 2018	Reconviction Return of an individual to Corrective Services during a follow-up period. Reimprisonment Return of an individual to prison.	2 years	Age range is unclear
Austria	Statistik Austria, 2018	Reconviction The conviction should happen during a follow-up period.	1, 2, 3, 4 years	
Canada – Ontario	Ontario Ministry of Community Safety and Correctional Services, 2017	Reconviction Return to a provincial correctional supervision after committing an offence during the time of follow-up	2 years	Includes individual receiving a sentence longer than 6 months. Excludes individuals sentenced to federal prisons
Canada – Quebec	Ministère de la Sécurité publique, 2015	Reconviction The crime and conviction should both happen during a follow-up to be counted as recidivism. Reimprisonment Receiving a new prison sentence during a follow-up period.	2 years	
Chile	Gendarmería de Chile, 2013	Reconviction The conviction should happen during a follow-up period.	2 years	
Denmark	Statistics Denmark, 2018	Reconviction 3 years after follow-up ends, an individual can be sentenced for an offence committed during the follow-up period.	6 months, 1 year, 2 years	Cohort of people released from custody aged 20 years old and older.
Estonia	Ahven <i>et al.</i> , 2018	Re-arrest Being a suspect of crime.	2 years	
Finland*	Graunbøl <i>et al.</i> , 2010	Reconviction The offence and conviction should both happen during a follow-up period	2 years	
France	Ministère de la Justice, 2013	Reconviction The offence and conviction should both happen during a follow-up to be counted as recidivism.	1, 2, 3, 4, 5, 6 years	Follow-up period starts next calendar year from the year of initial conviction. Follow-up may overlap with time in prison.
Germany	Hans-Jörg & Jörg-Martin, 2014	Reconviction The offence and conviction should both happen during a follow-up to be counted as recidivism.	3 years	
Iceland	Yeoman, 2015	Reconviction Receiving a new sentence during a follow-up period.	2 years	Includes prisoners in Vernd (“halfway house”, type of parole)
Ireland, Republic of	Central Statistics Office, 2016	Reconviction To be counted as a recidivism event, an offence should occur within a follow-up period and a conviction should happen within two years after the offence.	3 years	
Israel	Walk & Berman, 2015	Reimprisonment Receiving a new prison sentence during a follow-up period.	1, 2, 3, 4, 5 years	
Italy	Mastrobuoni & Terlizzese, 2014	Re-arrest A new arrest during a follow-up period.	3 years	Selected sample. May not be fully representative.
Latvia	Kīpēna <i>et al.</i> , 2013	Reconviction (or initiation of proceedings) A new criminal charge that did not result in acquittal or other technical dismissal during a follow-up period.	29 months	

Country	Study	Description of outcomes	Follow-up	Notes and exclusions
Netherlands	Ministerie van Justice en Veiligheid, 2018	Reconviction (or initiation of proceedings) A new criminal charge that did not result in acquittal or other technical dismissal during a follow-up period. A new criminal charge that did not result in acquittal or other technical dismissal during a follow-up period.	1, 2, 3 years	
New Zealand	Department of Corrections, 2017; Department of Corrections, 2018	Reconviction The crime and conviction should both happen during a follow-up to be counted as recidivism. Reimprisonment Receiving a new prison sentence during a follow-up period.	1, 2 years	
Norway*	Graunbøl <i>et al.</i> , 2010	Reconviction The offence and conviction should both happen during a follow-up period.	2 years	
Singapore	Singapore Prison Service, 2018	Re-arrest Released individual detained or convicted and imprisoned again for any new offence during a follow-up period.	2 years	Includes Drug Rehabilitation Centre inmates
South Korea	Indicator, 2018	Reimprisonment Receiving a new prison sentence during a follow-up period.	3 years	
Spain – Catalonia	Area of Research and Social and Criminological Formation, 2015	Reimprisonment Receiving a new prison sentence during a follow-up period.	3.5 years	
Sweden	Swedish National Council for Crime Prevention, 2012	Reconviction The offence and conviction should both happen during a follow-up period.	1, 2, 3 years	
UK: E&W	Ministry of Justice, 2018	Proven reoffending 6 months after observational period ends, an individual can be sentenced for an offence committed during this period.	1 year	
UK: N. Ireland	Department of Justice, 2017	Proven reoffending 6 months after observational period ends, an individual can be sentenced for an offence committed during this period.	1 year	
UK: Scotland	Scottish Government, 2018	Reconviction The conviction should happen during a follow-up period to be counted as recidivism.	1 year	
USA	Alper <i>et al.</i> , 2018	Re-arrest An arrest should happen during a follow-up period anywhere in the US.	1, 2, 3, 4, 5, 6, 7, 8, 9 years	The same 2005 federal cohort as examined in Fazel & Wolf (2015). Data for longer follow-up periods became available.
USA – N. Carolina	Flinchum <i>et al.</i> , 2016	Re-arrest Reconviction Reimprisonment A respective event should happen during a follow-up period on the state territory.	1, 2 years	
USA – Oregon	State of Oregon Criminal Justice Commission, 2018	Re-arrest Reconviction Reimprisonment A respective event should happen during a follow-up period on the state territory.	1, 2, 3 years	Includes released prisoners on parole and post-release supervision.

* Recidivism rates from the original review (Fazel & Wolf, 2015) were reported since no new data had become available.

Table 2. Reconviction, re-arrest and reimprisonment rates in released prisoners by country and follow-up period length.

Country	Year	Cohort size	Follow-up	Re-arrest	Reconviction	Reimprisonment	Source
Australia	2016–2017	n/a	2 years		53%	45%	Australian Government, 2018
Austria	2013	7,185	1 year		15%		Statistik Austria, 2018
			2 years		26%		
			3 years		32%		
			4 years		36%		
Canada – Ontario	2014–2015	2,610	2 years		35%		Ontario Ministry of Community Safety and Correctional Services, 2017
Canada – Quebec	2007–2008	9,483	2 years		55%	43%	Ministère de la Sécurité publique, 2015
Chile	2010	20,625	2 years		39%		Gendarmería de Chile, 2013
Denmark	2013	3,904	6 months		36%		Statistics Denmark, 2018
			1 year		51%		
			2 years		63%		
Estonia	2013–2015	8,500 (estimated)	2 years	37%			Ahven <i>et al.</i>, 2018
Finland*	2005	4,507	2 years		36%		Graunbøl <i>et al.</i>, 2010
France	2004	78,580	1 year		26%		Ministère de la Justice, 2013
			2 years		40%		
			3 years		48%		
			4 years		54%		
			5 years		58%		
			6 years		61%		
Germany	2010	26,602	3 years		46%		Hans-Jörg & Jörg-Martin, 2014
Iceland	2009–2011	322	2 years		27%		Yeoman, 2015
Ireland, Republic of	2010	9,339	3 years		45%		Central Statistics Office, 2016
Italy	2001–2009	479	3 years	28%			Mastrobuoni & Terlizze, 2014
Israel	2008	6,724	1 year			18%	Walk & Berman, 2015
			2 years			28%	
			3 years			34%	
			4 years			38%	
			5 years			41%	
Latvia	2009	442	29 months		50%		Kipēna <i>et al.</i>, 2013
Netherlands	2013	31,168	1 year		35%		Ministerie van Justice en Veiligheid, 2018
			2 years		46%		
			3 years		51%		

Country	Year	Cohort size	Follow-up	Re-arrest	Reconviction	Reimprisonment	Source
New Zealand	2015–2016	n/a	1 year		46%	32%	Department of Corrections, 2017
			2 years		61%	43%	Department of Corrections, 2018
Norway*	2005	8,788	2 years		20%		Graunbøl <i>et al.</i>, 2010
Singapore	2015	13,700 (estimated)	2 years	26%			Singapore Prison Service, 2018
South Korea	2013	22,121	3 years			25%	Indicator, 2018
Spain – Catalonia	2010	3,414	3.5 years			30%	Area of Research and Social and Criminological Formation, 2015
Sweden	2011	7,738	1 year		51%		Swedish National Council for Crime Prevention, 2012
			2 years		61%		
			3 years		65%		
UK: E&W	2015–2016	61,410	1 year		48%		Ministry of Justice, 2018
UK: N. Ireland	2014–2015	1,417	1 year		37%		Department of Justice, 2017
UK: Scotland	2015–2016	6,295	1 year		43%		Scottish Government, 2018
USA	2005	401,288	1 year	44%			Alper <i>et al.</i>, 2018
			2 years	60%			
			3 years	68%			
			4 years	74%			
			5 years	77%			
			6 year	80%			
			7 years	81%			
			8 years	82%			
			9 years	83%			
USA – N. Carolina	2013	13,873	1 year	31%	11%	12%	Flinchum <i>et al.</i>, 2016
			2 years	48%	26%	21%	
USA – Oregon	2014	4,357	1 year	40%	23%	7%	State of Oregon Criminal Justice Commission, 2018
			2 years	51%	36%	14%	
			3 years	57%	43%	19%	

* Recidivism rates from the original review ([Fazel & Wolf, 2015](#)) were reported since no new data had become available.

Table 3. The 2-year reconviction rates in released prisoners.

Country	Year	Cohort size	Reconviction	Source
Australia	2016–2017	n/a	53%	Australian Government, 2018
Austria	2013	7,185	26%	Statistik Austria, 2018
Canada – Ontario	2014–2015	2,610	35%	Ontario Ministry of Community Safety and Correctional Services, 2017
Canada – Quebec	2007–2008	9,483	55%	Ministère de la Sécurité publique, 2015
Chile	2010	20,625	39%	Gendarmería de Chile, 2013
Denmark	2013	3,904	63%	Statistics Denmark, 2018
Finland*	2005	4,507	36%	Graunbøl <i>et al.</i>, 2010
France	2004	78,580	40%	Ministère de la Justice, 2013
Iceland	2009–2011	322	27%	Yeoman, 2015
Netherlands	2013	31,168	46%	Ministerie van Justice en Veiligheid, 2018
New Zealand	2015–2016	n/a	61%	Department of Corrections, 2018
Norway*	2005	8,788	20%	Graunbøl <i>et al.</i>, 2010
Sweden	2011	7,738	61%	Swedish National Council for Crime Prevention, 2012
USA – N. Carolina	2013	13,873	26%	Flinchum <i>et al.</i>, 2016
USA – Oregon	2014	4,357	36%	State of Oregon Criminal Justice Commission, 2018

*Reconviction rates from the original review (Fazel & Wolf, 2015) were reported since no new data had become available.

Table 4. The comparison of the reconviction rates in released prisoners reported in the previous review (Fazel & Wolf, 2015) with those reported in the present review.

Country	Previously reported rate (year)	New rate (year)	Notes
1-year reconviction			
UK: E&W	46% (2000) 45% (2012/2013)	48% (2015/2016)	Change in data source and cohort composition in 2015. Rates for 2012/2013 were recalculated as 49% in the newly published statistics. Significant difference between recalculated 2012/2013 rates and 2015/2016 rates ($\chi^2 = 15.6$, $df = 1$, $p = 0.0001$).
UK: N. Ireland	25% (2005)	37% (2014/2015)	Change in the outcome definition.
UK: Scotland	46% (2009/2010)	43% (2015/2016)	Rates for 2009/2010 were recalculated from 45.7% in the old publication to 46.3% in the newly published statistics. Significant difference between recalculated 2009/2010 rates and 2015/2016 rates ($\chi^2 = 11.4$, $df = 1$, $p = 0.0007$).
2-year reconviction			
Denmark	29% (2005)	63% (2013)	Change in reporting practices.
Sweden	43% (2005)	61% (2011)	Change in reporting practices.
Iceland	27% (2005)	27% (2009/2011)	No significant difference ($\chi^2 = 0$, $df = 1$, $p = 0.9984$).
Netherlands	48% (2007)	46% (2013)	Rates for 2007 were recalculated as 49% in the newly published statistics. Significant difference between 2007 recalculated rates and 2013 rates ($\chi^2 = 94.2$, $df = 1$, $p = 0.0001$).
Singapore	27% (2011)	26% (2015)	No exact information about sample size available for 2015.
3-year reconviction			
Germany	48% (2004)	46% (2010)	No exact information about sample size available for 2010.
Ireland, Republic of	51% (2008)	45% (2010)	Significant difference ($\chi^2 = 48.1$, $df = 1$, $p = 0.0001$). Larger number of prisoners in the newer cohort.
5-year reconviction			
France	59% (2002)	40% (2004)	Change in reporting practices.

Data availability

Appendix 1, containing the recidivism reporting checklist, is available from OSF.

DOI: <https://doi.org/10.17605/OSF.IO/QVTFB> (Fazel *et al.*, 2019a).

License: [CC0 1.0 Universal](https://creativecommons.org/licenses/by/4.0/).

Reporting guidelines

A completed PRISMA checklist is available on OSF. DOI: <https://doi.org/10.17605/OSF.IO/7SZJC> (Yukhnenko *et al.*, 2019b)

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This systematic review examines the criminal recidivism rates of prisoners internationally, with the aspiration that ‘the comparison of recidivism rates between countries and regions may provide useful information about relative effectiveness of different sentencing and rehabilitation policies’ (p.3). This is indeed an important and timely research endeavour given that the Ministry of Justice in England and Wales recently published the responses to a consultation on proposed changes to the proven reoffending rates it produces (see; Ministry of Justice, 2016¹ and 2017²) to ‘align the existing reoffending measure with those measures necessary for assessing progress against the rehabilitation reforms’ (Ministry of Justice, 2016¹, p.3). Furthermore, the production and use of data, such as recidivism rates that is often held by government departments is a major issue of democratic governance (Parsons, 2002³, p.145). This review updates findings from a previous one (Fazel & Wolf, 2015⁴), and expands the searches conducted from 20 to 50 countries with the largest prison populations.

Whilst recidivism rates do have the potential to be used as a standardised measure of prison performance and could be used to compare prisons nationally (and internationally), any choice of outcome should reflect the purpose of prisons, and this is likely to vary internationally. There are, however, several drawbacks to using recidivism rates in this context;

- Recidivism rates underestimate the true amount (and cost) of crime in society, as a significant (but unknown) amount of crime is unreported/unsolved.
- Recidivism rates do not tell us anything about whether the new offence committed was more or less serious than the previous one. Therefore, they are a fairly crude measure of effectiveness.
- Recidivism rates only capture instances of failure and do not take into account successes.
- Recidivism rates do not reflect what we know about desistance theory (i.e. pathways out of crime often involve sidesteps and missteps, see McNeill & Schinkel, 2016⁵).

- Recidivism rates often do not tell us if the person was returned to custody, and are therefore limited in terms of calculating the cost of crime to society.

Comparisons between prison regimes internationally are fraught with difficulties; especially given recent changes in prison populations, policy and reporting practices. Additionally, what constitutes a crime can vary from one country to the next.

Notwithstanding any concerns as to the appropriateness of these comparisons, one of the main findings of this updated review is that researchers are still some way off being able to perform these comparisons; only 10 of the 50 countries reported recidivism rates for prisoners, and due to the heterogeneity in the type of figures produced it was not possible for the authors to produce a meta-analysis. A recidivism reporting checklist is proposed as a means of standardising how countries produce this statistical information and its adoption should be recommended.

References

1. Ministry of Justice: Response to consultation on changes to proven reoffending statistics: England and Wales. *London: Ministry of Justice*. 2016. [Reference Source](#)
2. Ministry of Justice: How the measure of proven reoffending has changed and the effect of these changes. *London: Ministry of Justice*. 2017. [Reference Source](#)
3. Parsons W: Analytical Frameworks for Policy and Project Evaluation: Contextualising Welfare Economics, Public Choice and Management Approaches. *Project and Policy Evaluation in Transport*. 2002. 144-180 [Reference Source](#)
4. Fazel S, Wolf A: A Systematic Review of Criminal Recidivism Rates Worldwide: Current Difficulties and Recommendations for Best Practice. *PLoS One*. 2015; **10** (6): e0130390 [PubMed Abstract](#) | [Publisher Full Text](#)
5. McNeill F, Schinkel M: Prisons and desistance. *Handbook on Prisons*. 2016. 607-621 [Reference Source](#)

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Prisons research, Quantitative methodologies, Personality disorder, Evaluation.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 25 June 2019

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This Research Note presents an update of a systematic review of worldwide recidivism rates published 3-years ago (Fazel & Wolf, 2015). Although the manuscript does not significantly add to the literature, as a research note it provides up-to-date results. In 2015, the authors concluded that recidivism data was not valid for international comparisons. This update draws the same conclusions. Overall, this systematic review is methodologically sound and highlights the inherent difficulties in adopting a comparative approach to recidivism. However, the manuscript would benefit from clarifying the results section as well as expanding the rationale.

Introduction:

1. It would be helpful to expand on the rationale for the review. In the introduction, the authors argue that “recently released prisoners often constitute a high-risk group that commit the majority of violent crimes” and then emphasize the public health burden of violent crime. However, much of the literature shows that recidivism events among recently released prisoners commonly involve justice administration offences (e.g., failure to comply with conditions of release). This may weaken the ‘public health burden’ argument and should be the subject of discussion in the manuscript.

Methods:

1. A justification for the selection of the bibliographic database (MEDLINE) should be provided, given that MEDLINE is generally used for biomedical research.
2. The abstract states that “three bibliographic indexes” were used, but this is not mentioned nor expanded upon in the text.
3. “If no new data had been identified for a particular country, we reported the rates from the original review”: in what percentage of cases did this occur? How many new or updated estimates were included?
4. It is unclear from the author list who “PS” is.

5. As per the PRISMA guidelines, it would be helpful to describe the method of data extraction (e.g., independently, in duplicate).
6. According to the reference list, several reports were available in foreign languages only. How were they translated?

Results:

1. We agree with Reviewer 1 that results are difficult to follow along and that an effort should be made to match up the text with the figures and tables.
2. The rationale for Table 3 is unclear, given that it repeats information that is also provided in Table 2. Perhaps editing Table 2 or synthesizing the 2-year reconviction rates in the text would be more appropriate.
3. Table 4 often mentions that there was a change in reporting practices, which often results in considerable changes in rates (e.g., Denmark: 29% (2005), 63% (2013)). More details should be provided regarding the nature of the change in reporting practices.
4. It would be helpful to clarify if each study examines a population or a sample (for example, in the Notes section of Table 1).
5. If a study examines a sample rather than a population, it would be helpful to provide a confidence interval, if available.

Discussion:

- Given that it is not the objective of the current manuscript, it may be premature to extrapolate on the reasons for a change in rates in the Republic of Ireland.

Is the work clearly and accurately presented and does it cite the current literature?

Yes

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Forensic mental health, violence, criminality, psychology

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.

Reviewer Report 06 March 2019

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This Research Note updates a 2015 systematic review (same senior author) of criminal recidivism rates across countries, including rates of reconviction, re-arrest, and reimprisonment. This is an interesting and important area. The review was carefully conducted, although the findings are modest. As in 2015, the authors conclude that a meta-analysis was not possible. Because recidivism rates are not reported in a comparable fashion across enough countries, they were unable to make many meaningful comparisons or draw conclusions about the association between criminal justice practices and criminal recidivism. The authors provided a summary of the range of recidivism rates for studies reporting 2 year follow-up period (unadjusted). A key message underscores the importance of comparable reporting across countries, and the authors advocate the use of a report checklist to accomplish this.

It would be very helpful if the authors made it easier to match up the text with the figures and tables. It was quite difficult to follow along, especially in the following areas:

1. The authors state: "We were able to examine recidivism over different time periods for 11 countries". The results section of the manuscript never refers to these 11 countries. Table 3 refers to 11 countries if one thinks to remove those with asterisks (those included in the original review) but this table only refers to two-year *reconviction* rates – not the more generally stated *recidivism* rates. Table 4 identifies a different 11 studies, but this table compares reconviction rates for studies that had updated data from the 2015 review, and these findings are barely referenced in the results section. In sum, it would be helpful to identify the 11 countries and how they were selected.
2. In the first line of the results section, the authors stated that they identified 27 publications (also reported in Figure 1) that reported recidivism rates for 23 countries; they refer the reader to Tables 1 and 2. However, Tables 1 and 2 list 29 "studies" (Table 1) or "Sources" (Table 2) by my count, for 23 countries.
3. The following sentence is highlighted in both the abstract and manuscript: "Of the 50 countries with the largest prison populations, 10 reported recidivism rates for prisoners." However, none of the figures or tables clearly depicts the list of 10 countries. Perhaps the authors could clarify the significance of the statement and identify the countries?

4. When reporting the key findings perhaps the authors could provide more help, such as: *“As shown in Table (?), the 2-year re-arrest rates ranged from 26% (list country) to 60% (list country), two-year reconviction rates ranged from 20% (list country) to 63% (list country), and two-year reimprisonment rates ranged from 14% (list country) to 43% (list country).”*
5. Small item: The authors state that “DY and PS” conducted the search. It is unclear who PS is in the list of authors.
6. Small item: In *Table 1: Austria (Statistik Austria, 2018): “Reconviction: The conviction should happen during a follow-up period.”* The use of “should” is confusing.

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Not applicable

Are all the source data underlying the results available to ensure full reproducibility?

No source data required

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: 1. Interface between criminal justice and mental health systems. Needs and outcomes of offenders.

We confirm that we have read this submission and believe that we have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however we have significant reservations, as outlined above.
