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Prevalence of gambling disorder among prisoners: a systematic review

This paper presents the first systematic review of studies on the prevalence of gambling disorder among prisoners across international jurisdictions. Only original studies which were published in English and employed reliable and valid screening tools are included in this analysis. The review finds that rates of problem or pathological gambling in prison populations are highly variable, ranging from 5.9 to 73% of male and female inmates surveyed. Nevertheless, recorded rates of problem and pathological gambling among inmates are consistently and significantly higher than rates of problem and pathological gambling recorded among the general population. The review indicates that the institution of problem gambling treatment programmes in carceral settings is necessary, in order to aid community re-entry and reduce the likelihood of re-offending. Moreover, it is suggested that the screening of inmates should become standard practice across penal institutions and other criminal justice organisations, with a view to better addressing the needs of offenders.

Introduction

Commercial gambling opportunities continue to grow across much of the world. The deregulation and liberalisation of gambling throughout many jurisdictions, which began in the 1970s and continues apace today, has led to increased participation rates, industry profits and state taxation revenues (Banks, 2017). In particular, the neoliberal economic policies pursued by most Western nations have led to a cultural climate that is conducive to a sustained growth in (increasingly potent) gambling provision. In turn, lotteries, casino gaming, sports and horse race betting, electronic machine gambling, bingo and online

wagering have become commonplace activities and popular leisure pursuits. Yet alongside the widespread availability of gambling products and services, there is growing public and political concern that gambling results in serious harms for some gamblers, their families and wider society, including, but not limited to, debt, unemployment, deterioration in personal health and self-esteem, and increased rates of problem gambling and crime (Orford, 2011).

Problematic gambling is clearly a significant criminogenic variable, with research studies identifying rates of gambling-related crime that range from 4 to 90% among criminal justice populations (Perrone, Jansons and Morrison, 2013). Gambling disorder has been recognised as underpinning a broad range of offending behaviour, as crimes can be committed in order to fund gambling activities or gambling-related shortfalls in finance (Blaszczynski, 1994; Blaszczynski and McConaghy, 1992, 1994). Crimes of fidelity and acquisitive crimes have typically been identified in studies of gambling-related crime, although there is emerging evidence that gambling may be linked to drug offences and acts of violence (Ashcroft, Daniels and Hart, 2004; Dowling et al., 2014; Roberts et al., 2016). As such, ascertaining the extent of gambling disorder among prisoners would help inform public health interventions in carceral settings and may have implications for resettlement. Estimates of the prevalence of gambling disorder within prison populations are important, as they can help shape treatment while in custody and encourage support seeking upon re-entry into society. Moreover, the captive nature of the prison population presents opportunity for courts to mandate treatment as part of offenders' prison based rehabilitation (McKenna et al., 2013).

Responding to the lack of recent reviews of gambling disorder among inmates, this paper presents the first systematic review of the prevalence of problem and pathological gambling within prison populations. Given that effective treatment of gambling disorder may reduce the likelihood of individuals reoffending, estimating the need for problem gambling treatment provision within correctional populations is a priority. Our review reports on

English language studies examining the extent of problem and pathological gambling amongst prisoners across international jurisdictions, with a view to informing rehabilitative programmes targeted at correctional populations. Although previous narrative reviews (Lahn, 2005; Williams, Royston and Hagen, 2005) have examined gambling, problem gambling and pathological gambling within forensic populations, to date researchers have failed to employ a systematic approach when reviewing such studies. As Farrington and Jolliffe (2017: 3) note, systematic reviews, 'are less biased, more valid, and more rigorous than the more usual narrative reviews' and researchers should seek to adopt such an approach where appropriate. In response, we undertook an updated and systematic review of peer reviewed studies.

Method

We followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009) for conducting and reporting a systematic review. The search process is shown in Figure 1.

[INSERT FIGURE 1 HERE]

The databases employed for the systematic search included MEDLINE, ProQuest, PsycINFO, PubMed, Science Direct and Scopus. In addition, reference lists for all studies included in this review were manually searched. We used a combination of search terms that relate to gambling disorder and prisoners including gambling OR problem gambling OR pathological gambling AND prisoner OR inmate OR offender OR felon. Further possibly relevant publications were obtained from reference lists. We placed no restrictions in terms of

geography or time period in which the studies were conducted. The reference lists of studies included in the quantitative synthesis were also searched. This search strategy yielded 556 potential articles that were first published between 1 January 1952 and 31 December 2017. The number of articles was reduced to 293 after duplicates were removed.

AUTHOR ONE and AUTHOR FOUR then screened the titles and abstracts for relevance to the current study. The following inclusion criteria were then applied: (1) articles must report on original studies examining the prevalence of gambling disorder among prisoners; (2) articles must have been peer reviewed and written in English; (3) gambling disorder must have been assessed through a validated screening tool. In cases where there was disagreement, AUTHOR TWO was consulted. Studies were excluded for one or more of the following reasons: (1) they were review articles; (2) they reported on the same prison populations; (3) they reported on juvenile offenders in penal institutions; (4) they included offenders subject to community sanctions or other forms of corrections; (5) they reported on a specific sub-set of a prison population e.g. sex offenders; (6) they reported on pre-trial detainees (7) if there was greater than 50% non-participation. AUTHOR ONE and AUTHOR FOUR independently extracted information from the eligible studies, recording the year of the study, the geographical location of the study, the prison population surveyed, the sample size, the characteristics of the sample, the problem gambling screening tool employed in the study and the number of inmates not consenting to participate in the study. Information relating to prevalence of problem and pathological gambling, offending behaviour, comorbidities, and gambling in prison were also extracted. This information structures the results below.

Results

The search strategy yielded 556 potential articles that were first published between 1952 and 2017. The number of articles was reduced to 293 after duplicates were removed. Following initial screening, a total of 25 articles were selected for full text assessment. After inclusion and exclusion criteria were applied, the final sample consisted of 12 studies. These studies are summarised in Table 1.

[INSERT TABLE 1 HERE]

Study characteristics

The sample sizes of individual studies ranged from 94 to 1057 participants. Collectively, the studies yielded a total of 3892 prisoners consisting of 3283 men (84.4%) and 609 women (15.6%). Prisoners in the included studies were drawn primarily from UK prisons (1480 prisoners; 38%) and US prison facilities (1038 prisoners; 26.7%), with the remainder located in prisons across New Zealand (551 prisoners; 14.2%), Canada (422 prisoners; 10.8%) and Australia (401 prisoners; 10.3%).

All studies were cross-sectional in design, with the exception of May-Chahal et al.'s (2017) research which employed a longitudinal approach. Studies derived their research samples from a variety of penal institutions and employed a number of different sampling strategies. US studies generated their samples from consecutively admitted adult male prisoners to a medium security prison (Templer, Kaiser and Siscoe, 1993), randomly sampled adult male prisoners at a medium security federal prison (Walters and Contri, 1998), adult male prisoners processed over a period of one year at a medium security federal prison

(Walters, 1997), and all adult male prisoners attending Department of Corrections' 'pre-release' classes at four medium and minimum security state correctional facilities. Abbott and McKenna's (2005) study generated its sample from all eligible adult female prisoners who were serving the first twelve months of their sentence in one of New Zealand's three female prisons, whilst Abbot, McKenna and Giles' (2005) sample consisted of adult male prisoners serving the first 12 months of their sentence in one of four medium and minimum security prisons which were selected at random by New Zealand's Department of Corrections. Also in New Zealand, Sullivan, Brown and Skinner (2008) drew on adult male prisoners at reception at a medium security prison, although eligibility was confined to those inmates due for release within six months.

Turner et al.'s (2012) Canadian research randomly selected adult male and female prisoners from a 'master list' of offenders. Prisoners were recruited from across seven federal institutions – including maximum, medium and minimum security levels – and three provincial facilities, in order to provide a 'comprehensive overview of the types of correctional facilities in Southern Ontario' (Turner et al., 2012: 437). In the UK, May-Chahal et al., (2012) selected adult male and female prisoners from a Male Category C prison in the north of England and a female prison in the south of England, whilst May-Chahal et al., (2017) employed an opportunistic approach to sampling male and female prisoners from two male prisons and one female prison in England, and two male prisons and one female electronic monitored site in Scotland. By contrast, Riley and Oakes' (2015) sample of male prisoners from a low security male correctional facility in South Australia were self-selecting, as were Riley et al.'s (2018) sample of male prisoners from three male prisons also in South Australia.

The number of inmates not consenting to take part in individual studies ranged from 0 to 287, with a variety of reasons recorded for non-participation. For example, Walters (1997)

reported that 8 prisoners declined to be interviewed and a further 26 lacked the English skills to enable them to participate. Elsewhere, Abbot, McKenna and Giles (2005) noted that 29 prisoners were unavailable for interview due to being transferred to a different prison, appearing in court, suffering illness or having been released. A further 51 declined to be interviewed or withdrew part way through the study.

A range of instruments were employed to assess gambling disorder prevalence and their revised versions were used in some studies. The South Oaks Gambling Screen (Templer, Kaiser and Siscoe, 1993; Walters, 1997; Walters and Contri, 1998; Anderson, 1999; Sullivan, Brown and Skinner, 2008; Turner et al., 2012) or a revised version of the instrument (Abbott and McKenna, 2005; Abbot, McKenna and Giles, 2005) were typically used in studies, whilst the Diagnostic and Statistical Manual IV Text Revision (Turner et al., 2012), Problem Gambling Severity Index (May-Chahal et al., 2012, 2017; Turner et al., 2012), and Early Intervention Gambling Health Test Screen (Riley and Oakes, 2015; Riley et al., 2018) were also employed.

Gambling disorder in prisoners

Table 1 shows the prevalence of problem and pathological gambling among prisoners. Notwithstanding differences in the timeframes among assessment instruments, studies show that between 5.9 and 73% of inmates met diagnostic criteria for problem or pathological gambling. Ten of the twelve studies reviewed reported on prevalence rates separately for either or both male and female prisoners. Prevalence estimates of problem or pathological gambling in male prisoners ranged from 10.4 to 73% and in female prisoners from 5.9 to 45%.

Nine studies reported on lifetime prevalence for gambling disorder (Templer, Kaiser and Siscoe, 1993; Walters, 1997; Walters and Contri, 1998; Anderson, 1999; Abbott and McKenna, 2005; Abbott, McKenna and Giles, 2005; Sullivan, Brown and Skinner, 2008; Riley and Oakes, 2015; Riley et al., 2018). In New Zealand, Abbott and McKenna (2000) identified that 45% of those surveyed were lifetime problem gamblers, with 33% identifying as pathological gamblers. Nine percent of the women inmates identified as problem gamblers had received some form of help during their imprisonment. Slightly lower rates of problem gambling were found amongst male prisoners, with Abbott, McKenna and Giles (2005) reporting that 21% of their sample identified as lifetime probable pathological gamblers and 10% as lifetime problem gamblers, whilst Sullivan, Brown and Skinner (2008) found that 23% of a sample of 100 inmates in a medium security were problem gamblers and 23% were pathological gamblers. Australian studies of male prisoners (Riley and Oakes, 2015; Riley et al., 2018) reported lifetime rates of problem gambling of 11% and 18% and lifetime rates of pathological gambling of 41% and 42%.

Notable rates of problem gambling were recorded across all but one US study (Walters, 1997). In an early self-report study, Templer, Kaiser and Siscoe (1993) found the lifetime prevalence of problem gambling to be 22.8% and the lifetime prevalence of probable pathological gambling to be 26% in a sample of 136 consecutively admitted inmates in a medium security prison in Nevada. By contrast, Walters' (1997) interviews with 363 prisoners identified that just 5% of the population were pathological gamblers, and a further 7% met the criteria for problem gambling. However, a later study (Walters and Contri, 1998) at the same northeastern US prison found that 33% of a sample of 316 male prisoners identified as problem gamblers and 19% were recorded as probable pathological gamblers. This latter figure is nearly four times higher than the rate found in Walters' earlier investigation. Walters and Contri (1998) posit that the significant differences between the two

studies may be accounted for by changes in the constitution of the prison population and/or a shift from an interview to self-report measure. High rates of gambling disorder were recorded in Anderson's study of 233 prisoners across four midwestern prisons, with 35% recorded as problem gamblers and 38% as probable pathological gamblers.

Three studies reported on the prevalence of gambling disorder among prisoners in the 12 months prior to imprisonment (May-Chahal et al. 2012; Turner et al., 2012; May-Chahal et al. 2017). Comparatively low rates of problem gambling were recorded across UK studies, with May-Chahal et al. (2012) reporting that 10.4% of males and 5.9% of females surveyed were defined as problem gamblers, and May-Chahal et al. (2017) identifying that 12.1% of a sample of 1057 male and female prisoners met the criteria for problem gambling. Elsewhere, Turner et al.'s (2012) Canadian study reported rates of problem gambling and probable pathological gambling that ranged from 4.8% to 12.1% and 7.8% to 13.4% for the 12 months prior to incarceration, depending on the diagnostic criteria employed.

Two studies considered the prevalence of gambling disorder among prisoners in the six months prior to imprisonment (Abbott and McKenna, 2005; Abbott, McKenna and Giles, 2005), with 7% of males and 12% of females identified as problem gamblers, and 16% of males and 22% of females meeting the criteria for pathological gambling. Finally, Turner et al.'s (2012) study reported on the prevalence of gambling disorder among prisoners during their incarceration. Depending on the diagnostic criteria employed, rates of problem gambling ranged from 1.7% to 7.8% and rates of probable pathological gambling from 4.4% to 5.3%.

Consistent across all of the studies that constitute this systematic review is the finding that rates of problem and pathological gambling in prison are significantly higher than rates of problem and pathological gambling recorded in wider society.

Offending related to gambling

This review of studies indicates that gambling may be related to both the current and past offending behaviour of prisoners. For example, Abbott and McKenna (2005) found that 26% of women surveyed reported committing a crime in order to gamble or pay gambling-related debts, whilst 19% reported having been convicted for a gambling-related offence. However, just 12% of those surveyed had been incarcerated for a gambling-related crime. In a similar study of male prisoners in New Zealand (Abbott, McKenna and Giles, 2005), 15% of participants admitted to committing a crime in order to obtain money to gamble or pay gambling debts. Lower rates of offending were recorded in May-Chahal et al.'s (2012) UK research, which reported that 5.4% of all men and 3% of all women surveyed considered that their current offence was linked to gambling, and 13.4% of men and 7.2% of women admitted to having committed an offence in order to gamble or pay gambled-related debts. Across the two Australian studies reviewed (Riley and Oakes, 2015; Riley et al., 2018), 20% and 18% of men reported that their current term of imprisonment was related to gambling issues.

A greater number of gambling-related offences were reported by problem gamblers and they were also more likely to say that their current conviction is related to their gambling than non-problem gamblers (Riley and Oakes, 2015; Riley et al., 2018). Notably, Turner recorded that 44% of problem gamblers reported gambling leading to criminal activity (Turner et al., 2012). Moreover, Riley et al. (2018) found that pathological gamblers were far more likely than problem gamblers and non-problem gamblers to report that their most recent conviction was related to gambling, with 40% stating that gambling was linked to their current term of imprisonment. Elsewhere, May-Chahal (2012) found no statistically

significant relationship between problem gambling and criminal careers. Only two of the studies reviewed reported on the length of sentence. Walters (1997) found that severe gamblers had slightly longer sentences when compared to minimum or moderate gamblers (an average of 135.74 months compared to 132.50 and 93.37 respectively). Conversely, Walters and Contri (1998) reported that non-gamblers had slightly longer sentences than probable problem gamblers (an average of 178.52 months compared to 149.42 months).

Acquisitive crimes were commonly related to the current convictions of problem and pathological gamblers, with inmates reporting engaging in robbery (Walters, 1997; Walters and Contri, 1998), property offences (Abbott et al. 2005; Turner et al. 2012), and theft (May-Chahal et al., 2017), whilst drug offences were also prominent (May-Chahal et al., 2017; Walters, 1997; Walters and Contri, 1998). Less common were gambling-related violence or other offences against the person, although available evidence indicates that problem gamblers are 'no less likely than their non-problem gambling counterparts to report having ever or currently been convicted for violent crimes' (Abbot and McKenna, 2005: 572). Problem gamblers are thus found across all offence types, with some studies finding no significant correlation between problem gambling and income producing crimes (Turner et al., 2012). Consequently, rather than 'attributing links between gambling and crime to specific crimes such as fraud, theft, and financial crimes, [the] data is suggestive of a potential "co-symptomatic" connection between gambling and crime' (May-Chahal et al., 2017: 80).

Comorbidities

The review of studies suggests that problem gambling is comorbid with alcohol and drug misuse, and poor mental health. Two studies highlight that alcohol and drug misuse was

prevalent across the sample surveyed, with 40% of prisoners in Abbot and McKenna's (2005) study admitting to drinking regularly and 59% of Anderson's (1999) sample reporting a history of alcohol abuse. In addition, 43% used cannabis and 32% used other illegal drugs weekly (Abbot and McKenna 2005), and 54% reported a history of drug use (Anderson, 1999).

Five studies reported specifically on the drug and alcohol use of problem gamblers. Both Abbott et al. (2005) and Walters (1997) identified a significant relationship between substance use and problem gambling, with problem gamblers more likely to have substance misuse problems than non-problem gamblers. Meanwhile, Anderson's (1999) findings suggest a pattern of association between problem gambling and substance use, as respondents who indicated that they had experienced either, or both, alcohol and drug abuse scored higher in terms of problem gambling severity. However, studies by Abbot and McKenna (2005) and May-Chahal et al. (2017) reported that no significant relationship was found between gambling behaviour and substance use or between problem gamblers and non-problem gamblers in relation to their alcohol and substance use (Abbott and McKenna, 2005).

Four studies explored the relationship between mental health and problem gambling. Consistent across the studies was the finding that higher problem gambling severity is associated with higher levels of mental health problems, including depression (Anderson, 1999), anti-social personality disorder (Abbott et al., 2005), childhood conduct disorder (Abbott et al., 2005), stress-related physical or emotional disorders (Anderson, 1999), and receipt of psychiatric treatment (Templer et al., 1993; Walters, 1997).

Gambling in prison

Despite all of the studies examined asking questions about inmates' gambling behaviour prior to prison only four studies (Abbott and McKenna, 2005; Abbott, McKenna and Giles, 2005; May-Chahal et al., 2012; Turner et al., 2012) reported on their gambling activities whilst in prison. This may well be because gambling is typically prohibited in most countries' correctional institutions. That gambling contravenes prison rules could also account for the relatively low rates of reported gambling participation among inmates. For example, Abbott, McKenna and Giles (2005) found slightly lower rates of gambling participation, with only 26% of incarcerated males reporting having engaged in some form of gambling during their incarceration. Similarly, Abbott and McKenna (2005: 577) reported that 28% of female inmates had taken part in gambling during their current imprisonment, although they caution that this figure is likely to be conservative as 'gambling is not formally sanctioned in prison'. Such findings suggest that inmates are likely to be reluctant to discuss an activity that represents a disciplinary offence that could result in a sanction of one form or another.

By contrast, Turner et al. (2012: 443) found that offenders housed in low security levels of the prison estate were less likely to gamble because 'they felt they had more to lose if caught gambling'. Across the seven institutions, just 34% of inmates reported that they had played 'at least one game'. Of those who did participate in gambling in prison, most gambled weekly or more, indicating that a large proportion of their prison income was spent on such activities. Alongside money, a diverse range of other items were used as gambling currency including cigarettes, tobacco and sweets, but also jewellery, drugs and items of clothing. This enabled prisoners to buy lotto tickets, bet on card games and play bingo. Likewise, Abbott, McKenna and Giles (2015) identified that those who had taken part weekly or more often, typically gambled with money. However, they did also note that other items, in particular phone cards, were used in card games, money bets and sports betting.

There is also some evidence (Turner et al., 2012) to suggest that prison can both precipitate and reduce gambling and/or gambling disorder, as 18% of offenders who reported no gambling prior to incarceration reported gambling in prison, and 2.2% of the sample developed an entirely new gambling problem during their period of confinement. By contrast only 67% of individuals who reported gambling prior to incarceration stated that they gambled during their current sentence, whilst for 10.1% of the sample their moderate or severe gambling problem declined to a low or non-problematic status during incarceration. Although gambling activities may offer a means through which inmates can relieve boredom and pass the time (Abbott and McKenna, 2005), evidence also indicates that it can cause harm to inmates. May-Chahal et al. (2012: 283) reported that although they did not directly ask about current gambling, during the administration of the survey, the research team were notified of ‘serious fights and violence in the context of gambling debt, issues where prisoners inherited debt when they moved into a gambling debtor’s cell or bed and incidents of violence in their families including a murder that was described as being caused by gambling’.

Discussion

This systematic review examined twelve studies from five countries encompassing a total of 3892 prisoners. We identified significant variation in the prevalence of problem and pathological gambling among prisoners across the studies surveyed, with rates ranging from 5.9 to 73%. Such variation is likely a consequence of studies using different screening tools over different timeframes to assess problem gambling. It is also important to note that there is a significant gender imbalance in the total number of prisoners, with relatively few studies reporting on female prisoners. Thus, further examination of the extent of gambling disorder

among female prisoners represents one direction for future research in this area. Nevertheless, the prevalence of problem and pathological gambling reported in these studies is significantly higher than estimates from general population surveys in the UK, US, Canada, Australia and New Zealand (Cox et al., 2005; Ministry of Health, 2009; Gainsbury et al., 2014; Seabury and Wardle, 2014; Welte et al., 2015). For example, in the UK, prevalence rates of problem gambling among prison inmates are between 12 and 24 times greater than those recorded in general population surveys. Surveys of inmates have also recorded that a notable proportion of inmates were either currently serving or had previously served a prison sentence for a gambling-related offence. Evidence also indicates that problem gamblers may suffer from a range of comorbid conditions, including mental illness, and drug and alcohol misuse, whilst opportunities to gamble during their imprisonment may exacerbate existing gambling problems. Undoubtedly, the high rate of problem gambling among prisoners, as well as evidence of gambling-related offending, has significant implications for the administration of criminal justice.

Yet despite such findings, criminal justice policy makers and practitioners have been slow to respond to the crime and criminal justice implications of problem gambling. In particular, gambling treatment provision in carceral settings remains underdeveloped. So although: 'Many countries have problem gambling treatment programs available for the general populace (with the lowest prevalence rates)...very few have programs available for incarcerated populations (with the highest prevalence rates)' (Williams et al., 2005: 684). It may well be that prison authorities do not see problem gambling as a significant criminogenic factor when compared with alcohol or drug misuse and, therefore, it is not considered a penal priority. More likely, policy makers and penal staff may be unaware of the extent of problem gambling in the prison population and the relationships between problem gambling and offending behaviour.

Available evidence (Brown, 1987; McKenna et al., 2013) indicates that the treatment of offenders who suffer from problem gambling can be effective in reducing reoffending. Significantly, these studies have identified that changes to an individual's gambling behaviour brought about through treatment lessens the likelihood of post-release gambling-related convictions, as it can inhibit the cycle of gambling, debt and crime. Thus, rehabilitative programmes may represent a cost effective approach to preventing gambling-related crime and recidivist behaviour that are a by-product of the widespread availability of high intensity forms of gambling in many societies.

Where gambling-related services have been introduced in prisons, they are still in their nascent stages. Telephone counselling services for inmates, prison staff training, addiction-based interventions and problem gambling focused programmes have and continue to be made available to some inmates in some prisons in Australia, Canada, the United Kingdom and the United States, with some success. For example, North American psycho-educational prison programmes have reported improved knowledge of and attitudes and behaviour towards inmates' problem gambling (Nixon et al., 2006), fewer disciplinary reports (Walters, 2005) and lower levels of problem gambling in the first twelve months after treatment (Marotta, 2007). Yet:

Despite the plethora of research on 'what works' with regards to treatment programs for corrections populations in general, knowledge on effective gambling-specific treatment programs within correctional settings is in its infancy. In particular, within the correctional environment, problem gambling treatment services remain largely undocumented and unevaluated. Where evaluations have been attempted, they are often based exclusively on participant

self-reports as the only measure of treatment success. (Perrone, Jansons and Morrison, 2013: 29)

Alongside ensuring that gambling specific interventions are subject to rigorous evaluation, criminal justice agencies also need to be active in identifying problem gamblers and ensuring that they engage with treatment offered by correctional services. Although there is some evidence to indicate that inmates would be keen to participate in gambling-related rehabilitation programmes, Lahn and Grabosky (2003) argue that most inmates are unlikely to self-identify or actively seek help. Fortunately:

The captive nature of a prison population means that some of the impediments to accessing treatment are alleviated. Through prisoner screening, or an identified link between an offence and problem gambling, prisoners can be advised or instructed via court orders to attend treatment as part of their prison-based rehabilitation. (McKenna et al., 2013: 19)

The screening for problem gambling at various stages of the criminal justice process, alongside awareness training by staff has already proved effective in the UK in a local context (Platt et al., 2017). We would recommend that such screening and staff training be extended nationally, in order to ensure that offenders who gamble problematically are identified and referred to problem gambling treatment services.

In addition, for such treatment programmes to be successful, courts must seek to ensure that rehabilitation, alongside accountability, underpins sentencing decisions for

offenders who commit crime because of gambling problems. To date, problem gambling is rarely seen as a factor in sentencing by courts (Crofts, 2002; Brooks and Blaszczynski, 2011; Perrone, Jansons and Morrison, 2013) and only in some jurisdictions of North America have therapeutic jurisprudence principles been adopted in criminal cases involving defendants with gambling addictions (Smith and Simpson, 2014). Notably, in Canada, recognition of pathological gambling as a mental health disorder has led to courts in most provinces accepting gambling addiction as justification for rehabilitative sentencing, whilst gambling treatment courts have also appeared in New York. Yet courts throughout most jurisdictions, including Australia, New Zealand and the UK, reject problem gambling as a mitigating factor that warrants rehabilitative rather than retributive sentencing. Although this is often because no evidence of problem gambling is submitted to the court, Brooks and Blaszczynski's (2011: 85) examination of court cases in England and Wales found that baseless claims of gambling addiction as a defence served 'to undermine those cases where defendants are genuinely suffering from a gambling problem and where such a condition might be considered to be a mitigating factor with referral to rehabilitation services'. Undoubtedly, 'fake' claims of problem gambling in courts inhibit the introduction of problem gambling as a mitigating factor in sentencing.

Nevertheless, there is clear precedent for rehabilitative sentencing for problem gambling, as a number of jurisdictions offer specialist drug courts to address drug related offending (Minchin, 2006). So although legal responsibility should not be diminished by the identification of problem gambling, it should warrant consideration, as appropriate treatment can reduce the likelihood of reoffending. Moreover, given the widespread availability of state sponsored gambling, a public health approach recognises that individuals who offend because of their problem gambling are victims of the proliferation of increasingly potent forms of gambling and courts should acknowledge this when delivering a sentence (Brooks and

Blaszczynski, 2011). As Hinshaw (2005: 333) posits, the significant growth in legalised forms of gambling and concomitant rise in gambling problems and gambling-related crime necessitates the need for a specialised response by criminal justice systems: ‘As a result of the growth in legalized gambling and the gaming industry, it understandably follows that the number of compulsive gamblers has and will increase to some degree. Likewise the number of crimes committed as a result of compulsive gambling will increase accordingly’. Thus, the introduction of appropriate sentencing measures, that marry rehabilitation with accountability, would represent a timely and necessary approach to mitigating some of the harms caused by problem gambling.

This systematic review illustrates the high rates of problem and pathological gambling among prisoners across international jurisdictions. In turn, carceral settings represent important environments in which we should seek to support and treat problem gamblers. That problem gambling co-occurs with a number of other conditions necessitates prison based treatment programmes that respond to a multiplicity of needs. Developing appropriate interventions, which are subject to rigorous evaluation and utilised by courts, can potentially aid offenders’ re-entry into the community and reduce the occurrence of gambling-related reoffending.

Conclusion

This systematic review has identified high rates of problem and pathological among inmates in Australia, Canada, New Zealand, the United Kingdom and the United States. Addressing gambling disorder among prisoners and, in turn, reducing gambling-related offending necessitates the development of appropriate interventions at each stage of the criminal justice system. This includes the screening of offenders upon arrival at police custody, as well as

their identification and treatment within prison and community corrections environments. Raising awareness and understanding of problem gambling among criminal justice staff will aid the development of screening, assessment and service referral processes that are both timely and systematic. The development of effective screening, recording and treatment practices for problem gamblers across criminal justice systems has the potential to aid community re-entry and reduce the occurrence of gambling-related offending. The recognition by courts that problem gambling may be a causal factor in the committal of crime, and the adoption of therapeutic jurisprudence principles in such cases, could ensure that prisoners are advised or mandated to engage in gambling treatment as a component of their prison-based rehabilitation. This requires the development and rigorous evaluation of gambling treatment programmes in criminal justice settings, in order to ensure effectiveness. Only through the development of appropriate rehabilitative measures can prison better address the cycle of gambling, debt and crime.

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FIGURE 1
Summary of Literature Search

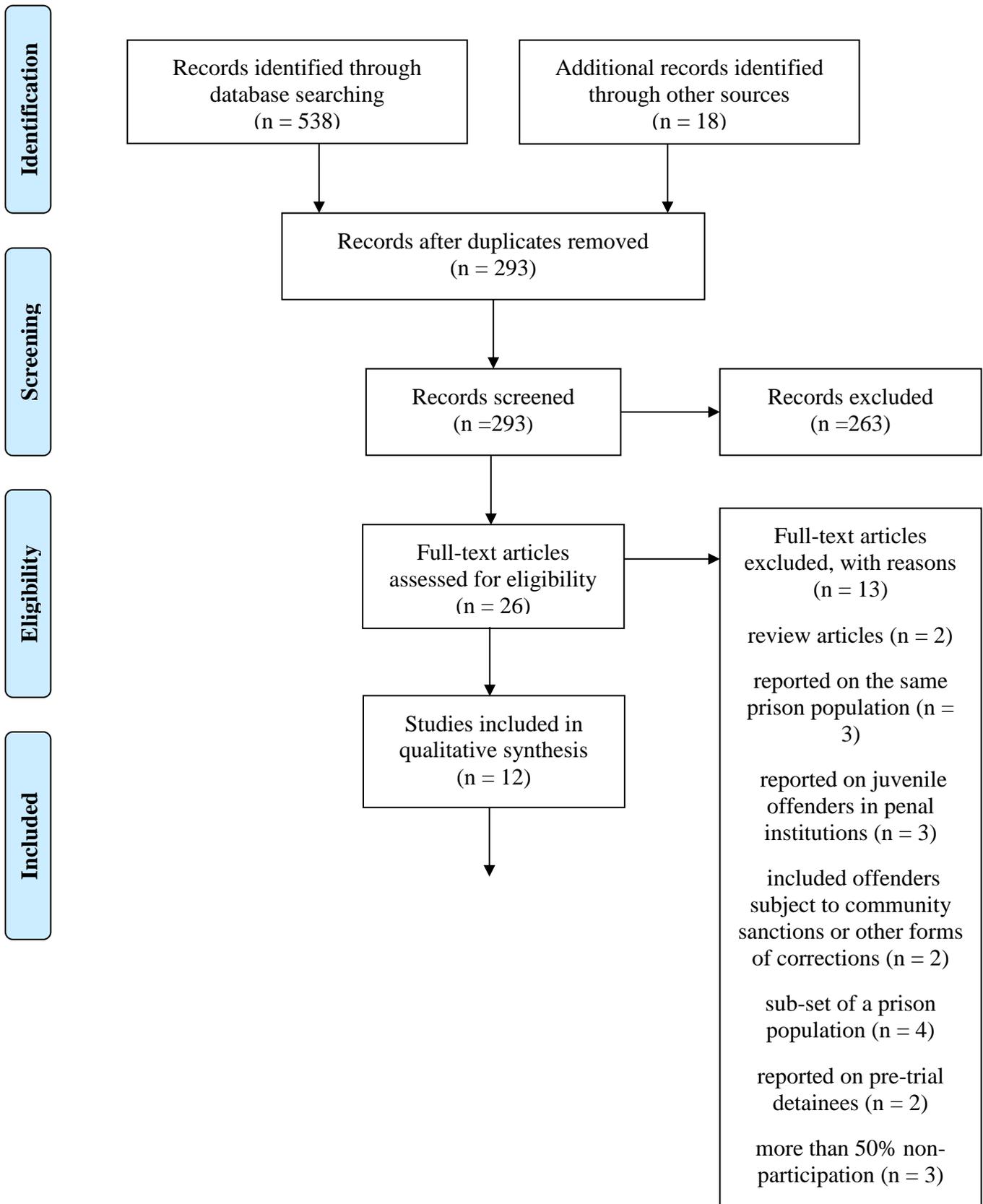


TABLE 1*Summary of studies reporting prevalence rates of problem and pathological gambling among adult prisoners*

Study	Country	Population	Sample size (N)	Sample characteristics	Diagnostic criteria	Prevalence of problem gambling	Prevalence of pathological gambling	No. not consenting
Templer, Kaiser and Siscoe (1993)	USA	Medium security prison, Nevada	136	Consecutively admitted adult male prisoners	SOGS (1-4; 5+); lifetime	22.8%	26%	0
Walters (1997)	USA	Medium security federal prison	363	adult male prisoners processed over a period of one year	SOGS (3-4; 5+); lifetime	7%	5%	34
Walters and Contri (1998)	USA	Medium security federal prison	316	adult male prisoners	SOGS (1-4; 5+); lifetime	33%	19%	
Anderson (1999)	USA	Medium and minimum security state correctional facilities	223	adult male prisoners attending state Department of Corrections 'pre-release' classes	SOGS (1-4; 5+); lifetime	35%	38%	0
Abbott and McKenna (2005)	New Zealand	3 female prisons	94	adult female prisoners serving the first 12	SOGS-R (3-4; 5+); 6 months prior to	12% (6 months) 12% (lifetime)	22% (6 months) 33% (lifetime)	76

				months of their sentence	incarceration & lifetime			
Abbott, McKenna and Giles (2005)	New Zealand	4 medium and minimum security male prisons, North Island and Christchurch	357	adult male prisoners serving the first 12 months of their current sentence	SOGS-R (3-4; 5+); 6 months prior to incarceration & lifetime	7% (6 months) 10% (lifetime)	16% (6 months) 21% (lifetime)	46
Sullivan, Brown and Skinner (2008)	New Zealand	Medium security prison	100	adult male prisoners at reception	Eight Screen combined with SOGS (3-4; 5+) lifetime	23%	23%	80
May-Chahal, Wilson, Humphreys and Anderson (2012)	United Kingdom	Male Category C training prison in the north of England, Female prison in the south of England	423 201 males 222 females	adult male and female prisoners	PGSI (8+); 12 months prior to incarceration	10.4% males 5.9% females	N/A	0
Turner, Preston, McAvoy and Gillam (2012)	Canada	7 federal and 3 provincial facilities across Ontario, federal institutions include	422 381 males 41 females	adult male and female prisoners	SOGS (5+); 12 months prior to incarceration & during incarceration	4.8% (12 months prior to incarceration) 1.7% (during incarceration)	13.4% (12 months prior to incarceration) 5.3% (during incarceration)	287

		minimum, medium and maximum security levels			DSM-IV-TR (5+); 12 months prior to incarceration & during incarceration PGSI (8+); 12 months prior to incarceration & during incarceration	5% (12 months prior to incarceration) 3.1% (during incarceration) 12.1% (12 months prior to incarceration) 7.8% (during incarceration)	7.8% (12 months prior to incarceration) 4.7% (during incarceration) 8.9% (12 months prior to incarceration) 4.4% (during incarceration)	
Riley and Oakes (2015)	Australia	Low security male correctional facility in South Australia	105	Self-selecting male prisoners	Eight Screen (4-5; 6+); lifetime prevalence	11% (lifetime)	41% (lifetime)	45
May-Chahal, Humphreys, Clifton, Francis and Reith (2017)	United Kingdom	2 male prisons and 1 female prison in England, two male prison and one female electronic	1057 805 males 252 females	male and female prisoners	PGSI (8+); 12 months prior to incarceration	12.1%	N/A	0

		monitored site in Scotland						
Riley, Larsen, Battersby and Harvey (2018)	Australia	3 male prisons in South Australia	296	Self-selecting male prisoners	Eight Screen (4-5; 6+); lifetime prevalence	18% (lifetime)	42% (lifetime)	154