



Understanding prison violence: a rapid evidence assessment

Professor James McGuire
Liverpool University

The occurrence of violent assault in prison is a challenging problem. This Analytical Summary reports the findings of a rapid evidence assessment (REA) into the causes of physically violent assaults by male adult prisoners. The REA reviewed 97 research studies published since 1st January 2000.

Key findings

- Most of the published research is focused on **imported characteristics** – the personal characteristics of men who are violent in prison – and attempts to predict who they will be. Imported characteristics associated with prison violence include youth, history of earlier violence in prison or with violent convictions, membership of gangs, low self-control, anger, temper, mental health problems, and antisocial attitudes and personality.
- The **prison environment** also plays a considerable role in how prisoners behave. Physically poor conditions, highly controlling regimes, or by contrast circumstances in which rules are unevenly applied or not adhered to or where prisoners do not experience staff decisions as fair or legitimate, can each heighten tensions and induce stresses potentially giving rise to conflict and assault.
- Perhaps surprisingly, evidence that **crowding** in and of itself was a direct cause of violence was fairly weak. Research suggested that the effects of crowding are mediated through staff-prisoner interactions and that the crucial factor in maintaining order is the availability and the skills of unit staff.
- Some features of prison activity make violence less likely. Places within a prison where prisoners are engaged in **purposeful activities** they consider valuable, such as workshops and education, are less prone to be sites of aggression. Violence is more likely to occur in places that offer less purpose, have fewer formal ground-rules, and lower staff oversight, such as cells.
- A policy designed to reduce violence could be oriented towards **situational control** aspects of day-to-day prison management. That would require staff training in the use of styles and patterns of interaction that wield authority alongside instilling respect.

The views expressed in this Analytical Summary are those of the author, not necessarily those of the Ministry of Justice (nor do they reflect government policy).

Background

Physical violence – assaults on prisoners or staff, or fighting between prisoners – has long presented a worrying problem in prisons. Although many people probably expect prisons to be unruly places, for them to serve their purpose in society it is important that they remain as safe and orderly as possible. Violence between prisoners or against staff can cause considerable physical and psychological harm in itself and, furthermore, violent indiscipline has been associated with increases in re-offending after release.

The research questions set for this REA were as follows:

1. Who (which prisoners) are the most likely to commit incidents of violent disorder within establishments?
2. When are incidents of prison violence most likely to occur?
3. Where are the incidents of prison violence most likely to occur?
4. Which are the strongest drivers of prison violence, taking into account interactions amongst the various drivers (covering the dimensions of who, when and where)?
5. What are the key lessons for operational policy and/or delivery in terms of mitigating and reducing the risk of violent disorder? Are there any clear protective factors?

Approach

Several searches were undertaken to identify material relevant to the REA. All searches were limited to the period 2000-2015 inclusive. Some initial exploratory searches were conducted using composite terms including 'prison violence' with 'theory' and 'causes'. More advanced searches were then run using several series of terms with Boolean operators.

Searches were performed across a number of databases and academic search engines including the National Criminal Justice Reference Service (NCJRS), Proquest, Web of Science and Scopus. Where possible, searches were adjusted to include articles, reports, technical reports, government reports, statistical reports, reviews, literature reviews, and/or book chapters; but to exclude dissertations and news reports.

The review focused on populations legally designated as adults. Adolescents were therefore excluded, and only studies that involved participants aged 18 and over were included; this is the age at which individuals are no longer held in the juvenile estate and is the legal age of

adult majority in all parts of the United Kingdom and in many other jurisdictions.

Research studies had to include a dependent variable that was a quantitative measure of personal violence carried out in a prison setting by a serving prisoner during the course of a prison sentence. This excluded studies of released prisoners. Descriptive surveys that simply reported rates of violent indiscipline or some allied variable without an analysis of between-group differences or of associations with other variables were excluded from the review, on the grounds that they would be unlikely to provide any information on potential explanatory factors, as they did not treat violent indiscipline as a dependent variable.

Studies were retained if they used a dependent variable that was either a record of physical violence, or one that included some direct measure of violence but also contained other items closely associated with violence in addition to physical assault itself. Where violent indiscipline was defined as either assault or fighting (or both combined), the decision to include was straightforward. If a wider definition was used that included serious threats and/or weapon possession, that too was included. Some studies used a still wider definition. If it included assault but also subsumed extortion and/or hostage taking, as those inherently carry the need to use or to threaten physical violence, the study was retained. On the other hand escape attempts, which are serious breaches of discipline but do not necessarily entail violence, were excluded. Where verbal aggression or abuse, or other types of rule infraction, were included in a study's definition of indiscipline, even if the definition also included physical violence it was not retained for review, because the objective of this study was to improve knowledge in relation to specifically physical aggression. Research on sexual assaults in prison was also excluded, due to the volume of material amassed and the evident need to take separate explanatory factors into account.

All studies that fitted the above criteria were then reviewed for methodological quality. As there is no single accepted approach for rating what are mainly correlational or multi-level modelling studies, the author adopted an approach that combined several different quality assurance procedures. This included adopting criteria as suggested by Thompson et al. (2005) and Dedrick et al. (2009).

Strengths and limitations of this review

Research on prison violence exhibits a number of strengths. Many of these studies were based on large, often very large, sample sizes, typically in the hundreds, thousands or even tens of thousands, and data were often collected from several sites. This allowed the possibility of making multiple comparisons – between jurisdictions, for varying practices and over time, and for prisoners at different security levels. Statistical data were for the most part tested for the appropriateness of the analyses to be used, thoroughly analysed and results were generally clearly reported. Many studies incorporated several statistical models examining the added contribution made by discrete sets of variables in progression.

There are however also some limitations. The first and principal one is the absence of a genuine consensus on the definition of violence. It is clear that what are being discussed in each of the studies are acts of physical violence, but the width of concepts used to record this varied considerably, and studies differed markedly in whether or not physical assaults were analysed separately, or in combination with other types of infraction, and also in terms of what were classified as more serious incidents.

Second, the basic reliability of the data that are available must be questioned, as there will almost certainly be under-reporting, inappropriate recording, or other problems.

Third, given that the largest single source of research studies by far was the United States, it is vital to exercise caution when interpreting the results with reference to possible applications in prisons in England and Wales.

Fourth, this review focused only on quantitative research. Other features of the dynamics of prison violence have been explored in qualitative, interview based research studies, such as the book by Edgar, O'Donnell and Martin (2003), the work of Ricciardelli (2014) on prisoners' methods of coping with threats of violence, or on the importance of the issue of disrespect examined by Butler and Maruna (2009).

Findings

Ninety-seven studies were included in this REA. The overwhelming majority of the studies (87, or almost 90%) were carried out in the United States. Six were conducted in England and Wales, two in Switzerland, and one each in Slovenia and Spain. Table 1 shows how the studies were grouped into categories according to the focus of the research. The findings for each category are summarised below.

Table 1: Numbers of studies by study type

| Model or independent variable(s) | Number |
|---|---------------|
| Importation model / individual variables | 25 |
| Integrative model | 14 |
| Tests of predictor scales | 10 |
| Mental disorder | 9 |
| Administrative / procedural / managerial factors | 9 |
| Deprivation model / prison conditions / situational factors | 8 |
| Gang effects | 5 |
| Race/ethnicity differences | 5 |
| Bullying | 4 |
| Crowding / overcrowding / density | 3 |
| Gender differences | 3 |
| Strain theory | 2 |
| Total included for full review | 97 |

Individual variables

One quarter of the studies reviewed had focused on individual ('imported') variables. Several of the main variables tested in these studies emerge as having a consistent and sometimes very strong relationship with involvement in violent infractions. The factor which emerged most regularly was younger age. This usually means that those aged 21 or less have higher rates of violent indiscipline than those aged 22-35 or older, but various cut-offs were used in other studies. The other most widely reported variables that were regularly associated with prison violence were a pre-existing record of violent indiscipline in prison and gang membership.

Other variables had a less consistent pattern of association, where in some but not all studies they were found to predict prison violence. Such variables included: having a previous conviction for a violent offence, racial/ethnic grouping, shorter sentence length, and having served less time (at the moment of data collection). Prisoners without hope of release (sentenced to life without parole) were, contrary to expectations, not more likely to be involved in prison violence because they had 'nothing to lose'. Many variables, such as racial/ethnic group, had effects that were moderated by other factors and the patterning of this varied across studies making clear conclusions difficult to draw.

Integrative studies that combined individual and situational variables

The best prediction of human behaviour usually involves examining the interaction between individual and situational variables. Recognising this, some research on prison violence has entailed measuring specific factors from within these two large sets of influences and comparing the relative strengths of their effects, in some cases also comparing the impact of the factors individually with the interaction effect found when factors co-occurred. Studies which explicitly stated this as an aim were placed in this category.

Amongst the studies placed in this category, support was found for the influence of both individual and deprivation variables, for interactions between them, and in some cases also for other types of variable where studied. However, the relative strength of individual and situational variables remained difficult to gauge as the findings of different studies were inconsistent.

Prison conditions that influenced likelihood of assaulting or threatening other prisoners, or alternatively of being a victim of assault, included:

- feeling threatened and unsafe
- having been mistreated by staff
- having been wrongfully accused or punished
- perceiving treatment as unjust (Day, Brauer & Butler, 2015)
- being subject to additional restrictions (Jiang & Fisher-Giorlando, 2002)
- having fewer work assignments, structured routines, or levels of programme participation (Pérez, Gover, Tennyson & Santos, 2010; Steiner, 2009; also found by Meade & Steiner, 2013, and Steiner & Wooldredge, 2009)
- perceiving that rules were under-enforced, or that officers had less legitimacy (Wooldredge and Steiner, 2012, 2014)

Assaults were more common in cell areas than in work areas, in prisons with a 'telephone pole' design,¹ and in areas with lower levels of guardianship. Perhaps surprisingly, a higher staff-to-prisoner ratio was associated with a greater number of assaults on staff (Lahm, 2009).

¹ In research on this aspect of prisons, a 'telephone pole' design is one in which there are several rows of buildings parallel to each other, connected by a single (usually central) corridor though there may be more than one. This is contrasted with a 'campus' design in which there are more

Tests of predictor scales

Studies were placed in this category when their principal objective was to evaluate the accuracy of a structured assessment instrument in predicting violent outcomes. These studies do not investigate or test explanatory models directly. However, the use of selected instruments containing items thought to identify risk factors for violent misconduct could be said to reflect an implicit model of violence causation. Prediction studies, like most research on risk assessment, relied on individual-level variables and can be seen as indirect tests of the individual model, as they employ information about features of individual prisoners (e.g. age, security level, prior involvement in assaults, etc.). These studies were difficult to interpret as sources of information on the potential causes of violence, since they tended to use combinations of variables, when construction of a causal model requires dis-aggregation of variables. Most used a pre-existing risk assessment instrument.

The majority of prediction scales tested show a significant improvement over chance in predicting prison violence, though there was marked variation and the predictive success was modest in most cases. The most widely used scales for risk assessment in other contexts (e.g. VRAG, PCL:R and HCR-20) do not emerge especially well from this set of studies, in some cases having no significant association with physical violence in prison. Better results were found using the Risk Assessment Scale for Prison (RASP) and the Risk Assessment for Violent Nonsexual Victimization (RVNSV). The best outcome in predicting prison violence was for a simplified model called the Risk Assessment Scale for Prison-Reduced Burgess (RASP-RB) (Cunningham, Sorensen, Vigen & Woods, 2011).

Mental disorders

This review found that the relationship between mental disorder and prison violence is not straightforward. Some types of mental disorder were associated with an elevated risk of violent infractions whilst in prison, but the patterns within this were complex. Specific associations were found between some symptoms of mental health problems and likelihood of violent behaviour. This included patterns in which individuals believed that their thoughts were being controlled (Friedmann, Melnick, Jiang & Hamilton, 2008) and some aspects of criminogenic thinking and antisocial attitudes (Walters,

widely separated, free-standing buildings with open space between them. Individual units of the latter are designed to allow observation from a central point and are sometimes called 'pods'; hence this is also known as a 'podular' design.

2011). Some features of this that could be captured in psychometric scales proved useful as predictors of more serious violence (Edens, Buffington-Vollum, Colwell & Johnson, 2002). However, there was only mixed support for the use of total scores on the *Psychopathy Check List* (Revised: PCL:R) as a means of discriminating those prisoners most likely to be violent (Buffington-Vollum, Edens, Johnson & Johnson, 2002).

Two English studies, (Coid, 2002; Newberry & Shuker, 2012) found strong associations for the relationship between several types of diagnosed personality disorder (antisocial, narcissistic and paranoid) and levels of violence against other prisoners. These studies also identified motives associated with acting violently, deriving from self-esteem problems and particular interpersonal stressors.

Administrative, procedural and managerial factors

This category refers to decisions made by prison managers regarding different aspects of how an institution, or some sectors of it, will be run. That can apply to many dimensions of the prison experience, from the amount of time prisoners are out of their cells, to their freedom of movement, the availability of different resources and facilities, the extent of choice over daily activities, or the experience and skill levels of front-line staff. The levels at which such decisions are taken and acted on can range from a single sector or wing of a prison, to prison-wide decisions at governor level, to departmental, state, or ministerial level.

Higher security levels are accompanied by higher rates of violence. It has been suggested that this may be an effect of labelling: an assignment to a high level of security conveys an impression of being 'hard to handle' which an individual absorbs and acts upon.

There was evidence that the number of violent infractions was higher when a prison's environmental controls were lower (Griffin & Hepburn, 2013), yet in another study there was no significant effect of coercive controls, but a positive effect for use of remunerative controls (Huebner, 2003). That is, prisoners in paid employment were less likely to assault staff (with other variables controlled).

Aspects of administrative control (how well organised the prison administration is) and procedural justice (the extent to which prisoners experience prison processes as fair) have been found to be linked to violent misconduct, notably prison homicides. When a prison contains a high proportion of prohibited groups (for example, gangs or belief groups with a specific agenda pursuing aggression towards others), and there is inconsistency between staff ranks in the use of discipline (lower level decisions are not upheld by senior

managers), serious violence may be more likely (Reisig, 2002). In contrast, some administrative approaches characterised as embodying *procedural justice* are associated with lower rates of infraction.

Prison conditions and situational factors

Two studies reported clear findings that better physical conditions in prison were associated with lower levels of violence, and that prisoners experiencing higher levels of hardship had higher levels of misconduct (Bierie, 2012; Rocheleau, 2013). Another study found a significant association between deprivation (measured as a composite of five factors) and violence by prisoners against staff (Morris & Worrall, 2014). There was also a firm finding from a very large study (120,855 prisoners across 156 facilities) that being amongst prisoners classified as requiring higher levels of security (higher custody scores) was associated with greater likelihood of violence (Camp, Gaes, Langan & Saylor, 2003). A study of the effect of prison visits by Siennick, Mears and Bales (2013) found a pattern in which there was a gradual average decrease (of 67%) in violent incidents during the period six weeks before a visit, but a rapid escalation (by 61%) in the week afterwards. This was followed by a decline to the 'baseline' level that had prevailed six weeks before the visit.

Gang effects

In three of the five studies in this category, there was a clear association between gang membership and likelihood of engaging in prison violence. But there were some complex patterns within that finding. Being in a prison gang appeared more influential than a history of gang membership before prison (though the two were partly correlated), except in the study by DeLisi, Berg & Hochstetler (2004). The latter finding was explained by the higher level of control imposed on 'chronic gang members'. Having been a gang member who had also committed homicide predicted serious prison violence, though neither variable did so on its own (Drury & DeLisi, 2011). Such individuals are fewer in number in England and Wales than in the jurisdiction where this study was done. In the largest study in this group (82,504 prisoners), Gaes et al. (2002) found a descending order of levels of violence when a comparison was made in terms of 'embeddedness' in gangs. This refers to differences between core gang members, suspected gang members, and gang associates.

Race/ethnicity differences

The frequent pattern found in US prison research of racial or ethnic differences in rates of violent misconduct (both recorded and self-reported) is likely to be a reliable finding. However, such differences are not found

uniformly. In most of the comparisons reported in the five studies addressing this issue, African-American and Hispanic/Latino prisoners had higher rates of violence than their White counterparts; as also, where they were examined, did Native American prisoners. However, Wolff, Shi and Blitz (2008) found that African American prisoners were less likely to be assaulted by other prisoners (a finding also obtained by Wooldredge & Steiner, 2012), but more likely to be assaulted by staff. Such ethnic group differences are difficult to interpret as they were often correlated with background differences in levels of disadvantage, and differential treatment by staff.

Bullying

The four studies in this category, all conducted in prisons in England and co-authored by members of the same research group, employed self-report methods including interviews and psychometrics, rather than using prison records or direct observations. Sample sizes for these studies, while adequate, tended to be considerably smaller than those found in other studies included in this review.

Those prisoners who acknowledged bullying others reported perceiving benefits from doing so and from engaging in aggression in general. Bullying was correlated with having difficulties in self-control. The highest levels of impulsivity were found amongst those who were both bullies and victims, who also reported the highest levels of loneliness. An apparent pattern in which those likely to be aggressive perceive benefits from doing so, are less self-controlled, and are influenced by the extent to which they perceive the prison as lax in control as opposed to well controlled, corresponds to the results of studies in other categories.

Overcrowding and density of the prison population

The three main studies located here all found that other factors moderated the association between one or more measures of crowding and levels of assault in an establishment. A fourth study also analysed the relationship of crowding to violence but did not find any significant association (Camp, Gaes, Langan & Saylor, 2003). Wooldredge and Steiner (2009) found that the importance of crowding itself varied according to prison size. Larger total populations (greater than 1,862 prisoners) coincided with higher proportions of assaults, but the same effect did not appear in units below this size (which nearly all prisons in England and Wales are). The two studies by Tartaro (2002; Tartaro & Levy, 2007) both used survey data from large numbers of prisons. Transiency, or rate of turnover of prisoners relative to a prison's capacity, was positively associated with inmate-staff assaults. Having larger numbers of prisoners to

supervise per officer was significantly correlated with both inmate-inmate and inmate-staff assaults in all the analyses reported by Tartaro and Levy (2007).

Gender differences

It is an almost (but not entirely) ubiquitous finding that the rate of violence committed by male prisoners is higher than that amongst women. Harer and Langan (2001) found that despite these differences in overall rates, similar factors predicted violent indiscipline amongst both men and women.

Conclusions and recommendations

Returning to the questions that this REA was designed to address, the following conclusions can be drawn.

1. *Who (which prisoners) are the most likely to commit incidents of violent disorder within establishments?*

The most firmly supported variable is younger age, and there is moderately high support for previous involvement in violence while in prison, for having a conviction for a violent offence, a history of drug offences or drug abuse, and for gang involvement. Evidence for other variables including educational level and race/ethnicity is more mixed.

2. *When are incidents of prison violence most likely to occur?*

Few of the studies included in the review paid direct or detailed attention to the temporal aspects of violent incidents. There is evidence of a heightened rate of violent incidents in the period immediately following prison visits, but this finding is taken from a context (US prisons) where visits may be more widely separated than is the case in England and Wales.

3. *Where are the incidents of prison violence most likely to occur?*

Rather than suggest precise locations, a better approach to this is to say that some features of activity make violence less likely. Places where prisoners are engaged in purposeful activities they consider to be of value to them (workshops, education classes, rehabilitation programmes) are less likely to be sites of aggression than places with less focused objectives or less formal ground-rules. That is also, of course, partly an effect of staff oversight, such that places where prisoners can conceal actions (cell areas, washrooms) may also be ones where conflict is more likely to occur.

4. Which are the strongest drivers of prison violence, taking into account interactions between the various drivers (covering the dimensions of who, when and where)?

While the characteristics some prisoners bring with them are often predictive of heightened risk of violent indiscipline, such an outcome is not inevitable. From one perspective the solution to this is to make prisons stricter and in starker environments, in the belief that this will also secure more control over oppositional prisoners. But evidence indicates that the reverse occurs (Bierie, 2012; Chen & Shapiro, 2007; Drago, Galbiati & Vertova, 2011; Listwan et al., 2013). Securing lower rates of assault is more often associated with establishing and communicating a system of rules that appears legitimate and justifiable to prisoners, and is enacted consistently and fairly with cohesion between officer staff and senior managers. Stability is also likely to be associated with greater availability of meaningful activity within the prison. Safer prisons require a high level of staff skills, so staff build positive and collaborative relationships with as many prisoners as possible and become aware of the concerns influencing their everyday behaviour.

5. What are the key lessons for operational policy and/or delivery in terms of mitigating and reducing the risk of violent disorder? Are there any clear protective factors?

On the basis of reviewing the research on factors that influence prison violence, and taking account of the fact that prisons cannot select those who are sent to custody, a policy designed to reduce violence could be oriented towards situational control aspects of day-to-day prison management. That would require staff training in the use of styles and patterns of interaction that both wield authority alongside instilling respect. When incidents occur in an establishment, there should be recording and analysis of regular flashpoints according to prison routines and combinations of prisoner interactions. This will allow for consideration of alternative routines that could keep potential conflicts to a minimum.

References

- Bierie, D. M. (2012). Is tougher better? The impact of physical prison conditions on inmate violence. *International Journal of Offender Therapy and Comparative Criminology*, 56, 338-355.
- Buffington-Vollum, J., Edens, J. F., Johnson, D. W. & Johnson, J. K. (2002). Psychopathy as a predictor of institutional misbehaviour among sex offenders. *Criminal Justice and Behavior*, 29, 497-511.
- Butler, M. & Maruna, S. (2009). The impact of disrespect on prisoners' aggression: outcomes of experimentally inducing violence-supportive cognitions. *Psychology, Crime & Law*, 15, 235-250.
- Camp, S. D., Gaes, G. G., Langan, N. P. & Saylor, W. G. (2003). The influence of prisons on inmate misconduct: A multilevel investigation. *Justice Quarterly*, 20, 501-533.
- Chen, M. K. & Shapiro, J. M. (2007). Do harsher prison conditions reduce recidivism? A discontinuity-based approach. *American Law and Economics Review*, 9, 1-29.
- Coid, J. W. (2002). Personality disorders in prisoners and their motivation for dangerous and disruptive behaviour. *Criminal Behaviour and Mental Health*, 12, 209-226.
- Cunningham, M. D., Sorensen, J. R., Vigen, M. P. & Woods, S. O. (2011). Correlates and actuarial models of assaulting prison misconduct among violence-predicted capital offenders. *Criminal Justice and Behavior*, 38, 5-25.
- Day, J. C., Brauer, J. R. & Butler, H. D. (2015). Coercion and social support behind bars: testing an integrated theory of misconduct and resistance in U.S. prisons. *Criminal Justice and Behavior*, 42, 133-155.
- Dedrick, R. F., Ferron, J. M., Hess, M. R., Hogarty, K. Y., Kromrey, J. D., Lang, T. R., Niles, J. D. & Lee, R. S. (2009). Multilevel modelling: A review of methodological issues and applications. *Review of Educational Research*, 79, 69-102.
- DeLisi, M., Berg, M. T. & Hochstetler, A. (2004). Gang members, career criminals and prison violence: Further specification of the importation model of inmate behavior. *Criminal Justice Studies*, 17, 369-383.
- Drago, F., Galbiati, R. & Vertova, P. (2011). Prison conditions and recidivism. *American Law and Economics Review*, 13, 103-130. doi: 10.1093/aler/ahq024
- Drury, A. J. & DeLisi, M. (2011). Gangkill: An exploratory empirical assessment of gang membership, homicide offending, and prison misconduct. *Crime & Delinquency*, 57, 130-146.
- Edens, J. F., Buffington-Vollum, J., Colwell, K. W., Johnson, D. W. & Johnson, J. K. (2002). Psychopathy and institutional misbehaviour among incarcerated sex offenders: A comparison of the Psychopathy Checklist-Revised and the Personality Assessment Inventory. *International Journal of Forensic Mental Health*, 1, 49-58.
- Edgar, K., O'Donnell, I. & Martin, C. (2003). *Prison Violence: The Dynamics of Conflict, Fear and Power*. London & New York: Routledge.
- Friedmann, P. D., Melnick, G. Jiang, L. & Hamilton, Z. (2008). Violent and disruptive behavior among drug-involved prisoners: relationship with psychiatric symptoms. *Behavioral Sciences and the Law*, 26, 389-401.

- Gaes, G. G., Wallace, S., Gilman, E., Klein-Saffran, J. & Suppa, S. (2002). The influence of prison gang affiliation on violence and other prison misconduct. *The Prison Journal*, *82*, 359-385.
- Griffin, M. L. & Hepburn, J. R. (2013). Inmate misconduct and the institutional capacity for control. *Criminal Justice and Behavior*, *40*, 270-288.
- Harer, M. D. & Langan, N. P. (2001). Gender differences in predictors of prison violence: Assessing the predictive validity of a risk classification system. *Crime & Delinquency*, *47*, 513-536.
- Huebner, B. M. (2003). Administrative determinants of inmate violence: A multilevel analysis. *Journal of Criminal Justice*, *31*, 107-117.
- Jiang, S. & Fisher-Giorlando, M. (2002). Inmate misconduct: A test of the deprivation, importation and situational models. *The Prison Journal*, *82*, 335-358.
- Lahm, K. F. (2009). Inmate assaults on prison staff: A multilevel examination of an overlooked form of prison violence. *The Prison Journal*, *89*, 131-150.
- Listwan, S. J., Sullivan, C. J., Agnew, R., Cullen, F. T. & Colvin, M. (2013). The pains of imprisonment revisited: Impact of strain on inmate recidivism. *Justice Quarterly*, *30*, 144-168.
- Meade, B. & Steiner, B. (2013). The effects of exposure to violence on prisoner maladjustment. *Criminal Justice and Behavior*, *40*, 1228-1249.
- Morris, R. G. & Worrall, J. L. (2014). Prison architecture and inmate misconduct: A multilevel assessment. *Crime & Delinquency*, *60*, 1083-1109.
- Newberry, M. & Shuker, R. (2012). Personality Assessment Inventory (PAI) profiles of offenders and their relationships to institutional misconduct and risk of reconviction. *Journal of Personality Assessment*, *94*, 586-592.
- Pérez, D. M., Gover, A. R., Tennyson, K. M. & Santos, S. D. (2010). Individual and institutional characteristics related to inmate victimization. *International Journal of Offender Therapy and Comparative Criminology*, *54*, 378-394.
- Reisig, M. D. (2002). Administrative control and inmate homicide. *Homicide Studies*, *6*, 84-103.
- Ricciardelli, R. (2014). Coping strategies: Investigating how male prisoners manage the threat of victimization in federal prisons. *The Prison Journal*, *94*, 411-434.
- Rocheleau, A. M. (2013). An empirical exploration of the "pains of imprisonment" and the level of prison misconduct and violence. *Criminal Justice Review*, *38*, 354-374.
- Siennick, S. E., Mears, D. P. & Bales, W. D. (2013). Here and gone: Anticipation and separation effects of prison visits on inmate infractions. *Journal of Research in Crime and Delinquency*, *50*, 417-444.
- Steiner, B. (2009). Assessing static and dynamic influences on inmate violence levels. *Crime & Delinquency*, *55*, 134-161.
- Steiner, B. & Wooldredge, J. (2009). Individual and environmental effects on assaults and nonviolent rule breaking by women in prison. *Journal of Research in Crime and Delinquency*, *46*, 437-467.
- Tartaro, C. (2002). The impact of density on jail violence. *Journal of Criminal Justice*, *30*, 499-510.
- Tartaro, C. & Levy, M. P. (2007). Density, inmate assaults, and direct supervision jails. *Criminal Justice*, *18*, 395-417.
- Thompson, B., Diamond, K. E., McWilliam, R., Snyder, P. & Snyder, S. W. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children*, *71*, 181-194.
- Walters, G. D. (2011). Criminal thinking as a mediator of the mental illness-prison violence relationship: A path analytic study and causal mediation analysis. *Psychological Services*, *8*, 189-199.
- Wolff, N., Shi, J. & Blitz, C. L. (2008). Racial and ethnic disparities in types and sources of victimization inside prison. *The Prison Journal*, *88*, 451-472.
- Wooldredge, J. & Steiner, B. (2009). Comparing methods for examining relationships between prison crowding and inmate violence. *Justice Quarterly*, *26*, 795-826.
- Wooldredge, J. & Steiner, B. (2012). Race group differences in prison victimization experiences. *Journal of Criminal Justice*, *40*, 358-369.
- Wooldredge, J. & Steiner, B. (2014). A bi-level framework for understanding prisoner victimization. *Journal of Quantitative Criminology*, *30*, 141-162.

Her Majesty's Prison and Probation Service is committed to evidence-based practice informed by high-quality social research and statistical analysis. We aim to contribute to the informed debate on effective practice with the people in our care in prisons, probation and youth custody.



© Crown copyright 2018

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

First published 2018

ISBN 978-1-84099-802-3

Contact info: National.Research@noms.gsi.gov.uk