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SUBJECT: *Research in Review*

TO: Executive Staff
 Superintendents
 Other Readers



FROM: Gary Zajac, Ph.D.
 Chief of Research and Evaluation

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Enclosed please find Volume 11, Number 1 of *Research in Review* (RIR). This issue presents four article reviews dealing with various topics including the impact of denial and minimization on sex offender recidivism, desistance from offending over the lifecourse, an experimental evaluation of a correctional boot camp and predictors of inmate-on-inmate assault within prisons.

The first two reviews were prepared by Jacqueline Young, a Research and Evaluation Analyst within PRSG. The second review was prepared by David Betts, who is completing the year long Pennsylvania Management Associate program, during which time he has done several rotations with PRSG. The final review was prepared by Jesse Zortman, a Research and Evaluation Analyst within PRSG. We greatly appreciate their ongoing contributions to RIR.

Upcoming issues of Volume 11 will continue to present findings from the ongoing study of parole violators and parole successes conducted by Bret Bucklen, as well as summaries of ongoing Prison Rape Elimination Act (PREA) research being conducted by Jesse Zortman. RIR will also continue with article reviews and briefing papers on topics relevant to corrections, as well as discussing findings from PADOE evaluation studies as they are completed.

As always, we welcome your feedback on RIR. We also welcome your suggestions for specific topical areas for future issues. While we cannot promise that we can produce an issue in response to all suggestions offered, we are very much interested in knowing what questions and topics are most interesting to our readers.

Thank you for your ongoing interest in *Research in Review* as we begin our eleventh year of publication.

Research in Review

Office of Planning, Research, Statistics and Grants

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Summary and Major Findings of Articles Reviewed

Calvin M. Langton, et al. 2008. "Denial and Minimization Among Sexual Offenders: Posttreatment Presentation and Association with Sexual Recidivism." *Criminal Justice and Behavior*, 35(1), 69-98. Page 2

This article reports on an analysis of denial and minimization as predictors of sexual re-offending among sex offenders. This article concludes that denial is not necessarily a simple predictor of recidivism, but interacts with offender risk and treatment progress to impact recidivism. Implications for treatment policy regarding deniers is discussed.

Megan C. Kurlychek, et. al. 2006. "Scarlet Letters and Recidivism: Does an Old Criminal Record Predict Future Offending?" *Criminology & Public Policy*, 5(3), 483-504. Page 4

This study examines the extent to which offenders come to resemble non-offenders in terms of likelihood of committing an additional offense. This study finds that offender recidivism rates come very close to the offending rates of non-offenders over a period of seven years, meaning that in that time period, offender risk is reduced to nearly the level of someone with no offenses prior to the age of 18. Implications for offender reentry policy are discussed.

Doris L. MacKenzie, et.al. 2007. "An Experimental Study of a Therapeutic Boot Camp: Impact on Impulses, Attitudes and Recidivism." *Journal of Experimental Criminology*, 3(3), 221-246. Page 7

This article reports on an experimental evaluation of the impact of boot camp compared to traditional prison in Maryland. This study concluded that changes in attitudes, values and beliefs mattered more than placement in boot camp versus traditional prison. The criminogenic aspects of the traditional prison setting had a strong negative impact on inmates assigned to that condition.

Karen F. Lahm. 2008. "Inmate-on-Inmate Assault: A Multilevel Examination of Prison Violence." *Criminal Justice and Behavior*, 35(1), 120-137. Page 9

This article reports on a study of predictors of violence within prisons, examining micro-level factors (such as inmate age and attitudes) and macro-level factors (such as prison crowding and management). This study found that the most significant predictors of prison violence were inmate age, inmate aggression and prison population. Younger, more aggressive inmates housed within a large prison (especially a prison with a large proportion of young inmates) are the most likely to engage in violent misconduct.

Calvin M. Langton, Howard E. Barbaree, Leigh Harkins, Tamara Arenovich, Jim Mcnamee, Edward J. Peacock, Andrea Dalton, Kevin T. Hansen, Duyen Luong and Heidi Marcon. 2008. "Denial and Minimization Among Sexual Offenders: Posttreatment Presentation and Association with Sexual Recidivism." *Criminal Justice and Behavior*, 35(1), 69-98.

Treatment programs for sex offenders frequently incorporate components that address denial and minimization, despite research clearly showing that neither denial nor minimization predict sexual recidivism. The present study examines the relationship between sexual recidivism and patterns of denial and minimization at the end of treatment. The analysis controlled for failure to complete treatment, psychopathic traits, sex offender type, and the actuarial risk of sexual reoffense. The first part of the study focused on how changes in treatment methodology—such as posttreatment assessments and failure to complete treatment—affect the relationship between denial/minimization and sexual recidivism. The purpose of the second part of the study was to show that multiple denial/minimization variables, rather than dichotomous variables, better predict sexual recidivism.

The study sample included 436 sex offenders who received sex offender treatment between 1989 and 2001 at the Warkworth Sexual Behaviour Clinic (WSBC), part of a medium security federal penitentiary in Ontario. The treatment was a voluntary, five month program using daily cognitive-behavioral group sessions with a focus on denial and minimization. All but 38 of the offenders (8% of the full sample) completed the entire program, and 102 of the offenders did not participate in any additional sex offender treatment programs (institutional or community-based upon release) after participating in the WSBC program. Included in the sample were rapists, extrafamilial child molesters, intrafamilial child molesters, and mixed-age offenders.

The researchers used a series of measures in their analysis, which included three continuous variables and two categorical variables. The continuous variables included Psychopathy Checklist-Revised (PCL-R) scores from the participants' WSBC intake assessments, which assessed psychopathic personality traits; Rapid Risk Assessment for Sexual Offense Recidivism (RRASOR) total scores, which provides an actuarial risk index for sexual recidivism; and a denial and minimization measure using the Denial and Minimization Checklist-III (DMCL-III), which was used to assess sex offenders' descriptions of their sexual offenses.

The two categorical variables included the treatment completion status for each participant, and a second denial and minimization measure using the *Response to Treatment Scale*, which was configured to place subjects into one of two categories: admitters or minimizers/deniers. Thus, the offenders' denial and minimization was analyzed in two different ways, using the DMCL-III and *Response to Treatment Scale*.

To code the study data, the researchers used archived WSBC clinical files, a national database with correctional and psychological reports on federally sentenced offenders (Offender Management System), and Canadian Police Information Centre records—which provided the needed recidivism information. The outcome used for this study was sexual recidivism, and offenders were categorized

appropriately if they had a new conviction where a sexual element was present. For the full sample, 11.2% offenders were convicted of a new sexual offense after 5.5 years. For those offenders receiving no additional treatment following the program, 17.6% were convicted of a new sexual offense within a similar timeframe (5.7 years). Moreover, 26% of the total participants showed no denial/minimization at posttreatment, and 7% were in complete denial at posttreatment. A chi-square analysis showed no significant difference among sex offender types for those considered to be in complete denial; 10% of rapists, 6% of extrafamilial child molesters, and 6% of intrafamilial offenders were in complete denial in posttreatment. Conversely, a significant difference among sex offender types was detected for those showing no denial or minimization following treatment; 35% of rapists, 18% of extrafamilial child molesters, 29% of intrafamilial offenders, and 14% of mixed-age offenders showed no denial or minimization in posttreatment. Five percent of those offenders who did not participate in posttreatment were found to be categorical deniers.

The general trend showed that extrafamilial child molesters exhibited higher rates of minimization and denial after completing the treatment. Moreover, the scores of intrafamilial child molesters suggest that this group felt they caused their victims little or no harm and placed little or no blame on their victim.

Further analysis using correlations and prediction models revealed that offenders who did not complete the WSBC program showed higher PCL-R total scores, higher Factor 1 scores on the PCL-R, which measure emotional and interpersonal traits related to selfishness, callousness and remorse, and higher levels of denial/minimization. To further the analysis, the researchers developed an extended model to incorporate a time component. This analysis showed that for each one point increase in the PCL-R's Factor 2 score, which measures social deviance and anti-social tendencies, the rate of sexual recidivism increased by 9.6%. Furthermore, offenders who did not complete the initial treatment programming were at a higher risk of sexual recidivism at release - 12 times that of those who completed the program. At the end of one year, the non-completers were four times more likely to sexually recidivate.

A similar analysis was conducted for those participants who received no additional treatment following the WSBC program. The researchers found that the RRASOR and failure to complete treatment variables were significant predictors of sexual recidivism for this group. A prediction model was also constructed for this group which showed that offenders with higher RRASOR scores and higher minimization were three times as likely to sexually reoffend. The researchers separated this subset into two additional subgroups—those with minimization scores less than or equal to five, and those with minimization scores greater than or equal to five—and found that the latter (higher risk) group exhibited a faster rate of reoffending.

In sum, the study showed that higher risk offenders exhibiting higher levels of minimization—and who participated only in an initial treatment program—were more inclined to sexually recidivate. Also worth emphasizing is that the minimization and actuarial risk variables (using the RRASOR assessment) were significant, and that failure to complete treatment was a significant predictor of sexual recidivism.

The authors note several limitations and areas where further research is needed. First and foremost, the denial and minimization measures were scored using interview notes and clinical observations, rather than relying on self-report information. This is an area for future study, as no other studies have combined clinical ratings and self-report data to develop measures of denial/minimization. Moreover, this was the first study using both denial/minimization measures, and additional research on their psychometric properties would have been helpful. The study did not incorporate measures of shame or other emotions, which provides an opportunity for future research to examine the different ways in which denial and minimization develop (i.e., whether shame/emotion-driven or cognitively-based). The study also relied on a small sample size when controls were put into place later in the study. Given the recent history of meta-analyses addressing denial/minimization in relation to sexual recidivism, and findings that denial/minimization are not predictors of sexual recidivism, further research is needed to continue developing clinical evidence related to predictive validity.

Several interesting findings stand out in this study. First, the overall rate of *sexual* recidivism of 11.2% over five years reinforces the findings from many other studies that sex offenders have relatively low rates of sexual recidivism. Second, sex offenders who did not complete the initial treatment program had markedly higher rates of recidivism than did the treatment completers. Many studies of correctional treatment programs in general have found similar effects associated with treatment non-completion. Third, this study found higher rates of sexual recidivism for program completers who did not receive any aftercare, thus pointing to the importance of ongoing treatment for sex offenders. Fourth, this study suggests that denial *by itself* may not be a powerful predictor of reoffending, but that it can have significant interactions with other variables such as treatment completion and offender risk level to either aggravate or suppress recidivism. Finally, this article closes with some interesting discussion about the wisdom of excluding sex offenders from treatment on the basis of denial, and the utility of denial as a treatment target, rather than as an exclusionary factor.

Megan C. Kurlychek, Robert Brame and Shawn D. Bushway. 2006. "Scarlet Letters and Recidivism: Does an Old Criminal Record Predict Future Offending?" *Criminology & Public Policy*, 5(3), 483-504.

This study explores criminal history as a public policy issue and suggests that eliminating the offender "label" may reduce barriers ex-offenders face in securing employment. The study specifically focuses on how criminal history predicts future employment behavior—taking into consideration the timing of offenses—and discusses when and how an employer could know if a criminal record is worth considering when hiring an ex-offender. The authors specifically note that the study is intended to be a public policy exercise to help employers and policy makers understand the relevance of criminal history records. Approaching the study from an employer's viewpoint, the authors explore two key questions:

- Does the risk of offending for an ex-felon ever become similar, or equal to, the risk of offending for someone who has never offended at all?
- If so, after what period of time since the last arrest or conviction does this occur?

To test these questions, the researchers compared recidivism patterns for individuals with a record of past offending to initial offending patterns of individuals with no record of past offending. The authors approached the study from an employer perspective and drew the study data from Philadelphia police records that are publicly accessible - and would therefore be available to employers gathering criminal history information about potential employees. Specifically, the study used data for males who were born in Philadelphia in 1985 and resided there between the ages of 10 and 17 (N= 13,160).

For all study subjects, the researchers collected the dates of juvenile police contacts for criminal events for all individuals through age 17 (the no prior offending group by definition had none). The researchers then collected arrest dates for all subjects when they were between the ages of 18 and 26. Employers can take prior arrests, not merely convictions, under consideration in their hiring, which is why researchers expanded the dataset to include juvenile police contacts.

The researchers relied on two methods of analyzing the data. They first estimated hazard rates for the data set, which is the probability of offending over a specific time period given that the individual has not yet offended; intuitively, a lower number is better. The first estimate shows that the hazard rate for nonoffender subjects (exactly zero arrests at age 18, N=12,151) declined over the eight-year study period from 1.5% at age 19 to less than one half of one percent at age 25. The offender hazard rates (N=1,009) were much higher during the first several years of study; however, the hazard rate for this group decreased substantially over time, dropping below 2% by age 24. Although this hazard rate is still higher than that of the nonoffenders, the difference between the groups is minimal. Hazard rates for violent offenders were slightly higher than those for non-violent offenders, although statistically significant differences were difficult to determine.

As a complementary component of the study, the researchers also calculated “conditional probabilities” for the data set. The conditional probabilities estimated the probability of arrest when the individuals reached ages 25-26. The study found that individuals arrested during the years leading up to age 25 were more likely to be arrested at ages 25-26 than individuals who were last contacted as juveniles or arrested as 18-year-olds. Individuals in the “middle” groups, such as those who were last arrested at ages 18 or 19, have arrest probabilities closer to the group of individuals with no criminal history. Those with no criminal record had a statistically lower risk of arrest at ages 25-26 than all other groups.

Overall, the study generally found that although the risk of re-offending decreases substantially over time since the last criminal event, those with prior police contact or convictions never have as low a risk of offending as those who have never had police contact or an arrest. In other words, for individuals with criminal records, their risk of offending never equaled nonoffenders’ risk of offending—the hazard rate of the offender and nonoffender groups always remained separated by at least one percentage point. This separation was found to be statistically significant for the

representative populations. Still, it is revealing that an offender group can come to closely resemble a non-offender group within a seven year timeframe.

Although this difference between the offender and nonoffender groups is minimal, it is important to note that the difference depends on the specific time period under consideration. The risk of a new criminal event among a population of nonoffenders and a population of prior offenders becomes similar after a longer period of time has passed since the last criminal event. This finding is connected to the initial policy interest of the study, as it supports policy makers including specific timeframes in statutory restrictions on employment background checks. For example, the authors reference a recent statute limiting the use of criminal history records to seven years since time of conviction for truckers driving hazardous materials. Similar statutes may benefit ex-offenders employed in other occupations.

The different risks of offending for both offender and nonoffender groups also depend on the length of the reference period under consideration. During shorter periods—four months, for example—the difference between the arrest risk of those with no records and those with an arrest at age 18 was about 1%. When examining a longer period—the two year period of ages 25 and 26, for example—the difference increased to almost 6%. The authors explain this by noting that the non-offender group has an inherently low probability of offending over any given time period, whereas the offender group is more likely to show some sort of deviant behavior when the reference period is lengthened. For both groups, though, overall likelihood of offending tends to decline with age.

This finding may also have policy implications for employers looking to hire individuals with criminal records. Employers with high turn-over may be more willing to hire ex-offenders, as they may anticipate a shorter employment period and thus be more willing to accept the hiring risk. In contrast, employers interested in hiring long-term employees may be more reluctant to hire ex-offenders.

Overall, the authors conclude that the findings of this study call into question employer reluctance to hire ex-offenders and even public policies of barring ex-offenders from various types of employment due to concerns over re-offending. The authors argue that after a certain period of crime free life in the community, most job opportunities could be safely opened up to many categories of ex-offenders. Because the study findings are limited to a distinct group of individuals from one location during a specific timeframe, there are possibilities for further study of this issue. Future studies related to this topic could focus on other geographic locations, different timeframes and longer follow-up periods. Further analysis could also more closely examine patterns of desistance as they relate to the type of prior offense and demographic characteristics of the population.

Doris L. MacKenzie, David Biere and Ojmarrh Mitchell. 2007 "An Experimental Study of a Therapeutic Boot Camp: Impact on Impulses, Attitudes and Recidivism." *Journal of Experimental Criminology*, 3(3), 221-246.

Since their inception in the early 1980's, correctional boot camps have been utilized for innovative forms of rehabilitation that employ traditional aspects of military indoctrination and socialization. The discipline, structure and positive role models offered by the drill instructors offers an environment of challenge and growth. The process by which a civilian becomes a soldier, it is argued, could be a useful tool in turning an offender into a responsible and properly socialized citizen. But it has also been suggested that, therapeutically, the militaristic atmosphere of confrontation is counterproductive and can actually impact negatively upon the process of rehabilitation. A mindset learned in a program akin to basic training does not serve one well upon discharge into civilian society. Rather, a more supportive and therapeutic environment would offer greater hope for reduced recidivism and a successful reintegration into society.

Few studies have compared the recidivism rates of boot camps with traditional prison programs. Studies that have attempted comparisons found minimal differences in recidivism rates, or differences that suggest that boot camps are ineffective. The broad body of boot camp research suffers from a failure to employ rigorous experimental designs. Variation in the way different boot camps integrate therapeutic and military components renders much of the prior research unreliable.

The present study represents the first randomized trial of adult boot camps. This study compared the recidivism rates of Maryland inmates sentenced to a six-month boot camp program to those of inmates sentenced to a more traditional six-month prison experience. Between 2002 and 2004 the Maryland Parole Board randomly assigned 234 inmates to either a boot camp or traditional prison setting.

It was *intended* that both groups receive cognitive skills training, substance-abuse therapy and education during the six-month experience. The researchers found that the boot camp inmates by and large received the treatment services as intended. The control group inmates in the traditional prison, however, received these services at a far lower rate than intended. For example, only 31% of inmates in the traditional prison received their intended educational services. Complicating this picture further was a concurrent process evaluation of this boot camp conducted by an independent research team. The boot camp program was assessed using the Correctional Program Assessment Inventory (CPAI) and was found to be therapeutically deficient. The boot camp had an overall score of 38.6% on a scale that categorizes any program scoring below 50% as in "need of improvement". Thus, while the boot camp inmates were receiving services with greater regularity than the control group inmates, the authors conclude that the Maryland boot camp program had no discernible qualitative therapeutic advantage over its prison counterpart.

During the follow up period, the overall recidivism rates for the boot camp and control group were 60% and 67% respectively. After 6 months 24% of boot camp and 32% of control subjects had failed. After 12 months, 41% of boot camp and 57% of control subjects had been rearrested. And after 24 months 55% of boot camp and 67% of control subjects had recidivated.

This study focused on more than just recidivism rates. The authors wished to understand how the boot camp and traditional prison programs impact inmates. Accepting that cognitive change in the inmate is necessary for behavioral change, the attitudes and thinking patterns of the participants should be related to future behavior. Four instruments were used to assess beliefs and impulses associated with criminal behavior: *Jesness Anti-Social Attitudes* (measuring change in attitude towards conventional behavior); *Staxi-Anger Management* (measuring perceived ability to control tempers when angry); *Grasmick Low Self-Control Scale*; and *The Self-Appraisal Questionnaire* (measuring anti-social attitudes, values and beliefs).

Using the above tools, the study showed that boot camp participants showed no significant changes in assessed anti-social attitudes and criminal thinking, and actually got worse in the domain of self control. What was most telling, however, were the findings among the control group in the traditional prison. Those inmates showed significant increases in anti-social attitudes, poor self control, hostility and other domains of criminal thinking. Confinement in the traditional prison setting seemed to foster criminal attitudes more so than did the boot camp experience. Indeed, when controlling for changes in attitudes, the impact of boot camp versus traditional prison on recidivism was reduced to non-significance. Changes in attitudes seem to matter more than participation in a boot camp. Rather than the boot camp being a more “positive” experience, it appears that boot camp merely offers less of a “negative” experience. Thus, the authors conclude that the difference in the recidivism rates between this boot camp and the traditional prison may be explained by the traditional prison making offenders worse, rather than the boot camp making offenders better.

To the extent that the boot camp in this study *did* have any impact on the marginal difference in recidivism rates, the authors hypothesize that the size of the program may be an important factor. Boot camps, by their very nature, are smaller and more intimate experiences. The relationship between drill instructors and inmates requires more interaction and an accompanying lower ratio of staff to inmates. There seems to be a correlation between the smaller size of the boot camp experience and the reduced rate of antisocial association *between* inmates. Larger prisons, by contrast, provide more opportunities for antisocial peer association between inmates.

The authors note that there are still many questions and issues to be explored. For example, the boot camp participants in this study received more intensive parole supervision upon release. Did this have a significant impact upon recidivism rates? Also, would a decrease in the militaristic and an increase in the therapeutic dimensions of the boot camp curriculum have a more pronounced impact upon anti-social attitudes?

Correctional policy makers are increasingly challenged to do more with less. The cost effectiveness in terms of both dollars and reduced recidivism rates of programs such as boot camps is still not clear. This study has pointed out that any measurable benefit gleaned from a boot camp program has more to do with the therapeutic aspects of the programs than with the rigorous, confrontational aspects borrowed from the military tradition. More important to a successful program would be: the size of the program’s population, the degree of commitment to making incarceration a therapeutic environment, the ability to give the offender a sense of ownership and partnership in his/her

rehabilitation, and the avoidance of socializing low-risk inmates with high-risk inmates. Ironically, future studies may show that boot camp experiences will play a greater role in rehabilitating traditional prison programs than the offenders who participate in them.

Editors' Note: The finding about the score of the Maryland boot camp on the CPAI (38.6%) is likely a very important factor in the outcomes found by this study. The PADO has twice had its own boot camp evaluated on the CPAI by the same researcher who administered the CPAI to the Maryland facility. The PADO's boot camp scored 57.8% in the first assessment, and 60% in the second assessment, conducted three years after the first. The second assessment placed the PADO boot camp in the "Satisfactory" range on the CPAI. While we have not conducted the sort of true experimental evaluation of the PADO's boot camp as was done in Maryland, we have noted a steady decline in recidivism rates for our boot camp after implementation of program improvements recommended by our CPAI reports. This suggests that program integrity and adherence to the principles of effective correctional intervention are indeed important determinants of program outcomes.

Karen F. Lahm. 2008. "Inmate-on-Inmate Assault: A Multilevel Examination of Prison Violence." *Criminal Justice and Behavior*, 35(1), 120-137.

Inmate-on-inmate assault and the far-reaching consequences of prison violence have been among the most serious issues plaguing correctional administrators over the past several decades. Given the nature of the individuals being incarcerated, as well as the overall purpose of institutions where they housed, prison violence is sometimes thought to be an inevitable result of these combined factors.

While homicide rates among inmates and staff inside state prisons have dropped significantly over the past twenty years, inmate-on-inmate assaults have increased by almost 30% since 1995. During this same time period, inmate-on-staff assaults also increased, although fewer assaults resulted in serious injury or death. Despite the suggestion that the severity of assaults is decreasing, the overall increase in the number of assaults, rising populations, loss of prison programs, and longer mandatory sentences seem to foreshadow violent behavior occurring at an increased rate in the future.

The author suggests that, over the past 50 years, empirical research has produced conflicting theoretical explanations of prison violence. The first of these explanations, known as deprivation theory, suggested that inmate violence was a direct result of the negative stigmatization and degradation of being institutionalized. Through the "pains of imprisonment" and oppressive conditions, any interference or sudden loss of privileges could result in an outburst or act of individual violence. Current research suggests that institutional segregation techniques and loss of rehabilitation programs are current examples of this theory in practice. While deprivation theory suggests that prison violence among inmates is caused solely by prison-specific variables, it fails to account for individual inmate characteristics.

In addition to deprivation theory, the second theoretical model regarding inmate violence is importation theory. Importation theory explains inmate violence through the adaptation to prison life shaped by an inmate's pre-prison experiences and values. The prison itself is not seen as a closed

system, but rather a product of a particular inmate “code” and value system that includes violence and violent behaviors. Specific importation variables include age, race, social class, education level, prior employment, income level, and prior criminal history. Essentially, inmates bring their own past lives inside prison, thus shaping the culture of the institution. In order to survive in such a hostile and confined environment, inmates will draw upon past experiences and attitudes as survival skills in order to maintain a sense of personal security. Thus, if an inmate was violent outside of prison and held “violent values”, he will most likely be violent inside prison as well.

The issue of prison violence and its root causes have been thoroughly examined and researched from both the micro and macro-levels, or with a combination of both micro and macro-level variables. At the micro or individual level of violence, research suggests that one of the strongest correlates of prison violence and misconduct is an inmate’s age. Specifically, several studies suggest that younger inmates are much more likely to engage in violent behaviors and assault than their older counterparts in prison. When combined with gender - another micro level predictor of prison violence - the research suggests that younger, male inmates are overwhelmingly more likely to commit violent acts inside prison.

While the correlation between age and gender with prison violence is strong, the relationship between race and prison violence is much less clear-cut. Empirical research remains conflicted over race as an indicator of violent misconduct in prison, as various studies have shown non-White inmates to be more violence and misconduct-prone than White inmates. However, several recent studies have found that race and ethnicity were not significant predictors of violent misconduct. Thus, more empirical evidence is needed to establish race as a micro-level indicator of violence in prison.

Micro-level predictors of prison violence have been instrumental in determining individual levels of violent misconduct inside various institutions. However, much of the empirical research focused on the micro-level has ignored the context of the prison in which the inmate resides. Thus, it is equally important to explore macro-level predictors of prison violence. Although much more information exists at the micro-level of analysis, macro-level studies are important, as they focus primarily on contextual and structural characteristics of the prisons themselves.

Through the utilization of structural or macro-level variables, several studies have shown that staff-to-inmate ratio, average time remaining on inmates’ sentences, and prison over-crowding are predictors of prison violence and misconducts. However, as with several of the micro-level predictors, many of these variables often wash out as predictors of prison violence when they are controlled for in further analysis. Thus, this stresses the importance of improving on single-level analyses and conducting multilevel research into prison violence. While many of the multilevel studies have employed the use of various methodologies over the past decade, the overall results and findings remain somewhat diverse.

The current study used self-report data from questionnaires returned by 1,054 inmates in 30 prisons in Kentucky, Ohio, and Tennessee in 2001. Additionally, official record data on prison assaults was collected from each state DOC. Two separate levels of data were utilized because the sole use of official prison records has shown to be an issue when investigating prison violence, as it is believed

that a large majority of the violence that occurs in prison goes unreported.

The author utilized various micro-level explanatory variables in order to determine the frequency and severity of inmate-on-inmate (nonserious/nondeadly) assault behavior. Each inmate in the study was asked to complete a questionnaire and report whether or not they had engaged in an assault (physically attack with force) with another inmate over the past 12 months. It is important to note that the assault did not result in serious injury or death, as initial survey data had this type of question listed. However, less than one percent of the sample reported this type of assault, thus excluding it from any further analysis.

The study employed the use of multiple micro and macro-level variables in order to explore both deprivation and importation theories and how they correlate with prison violence. Micro-level variables included: age, race, current offense, time served for a previous violent offense, aggression, and belief scales borrowed and modified from the National Youth Survey. At the macro-level, all variables were obtained from each state's Department of Correction, departmental web sites, or from prison officials. Similar to previous studies, prison-overcrowding, staff-to-inmate ratios, programming availability, proportion of non-White offenders, and inmates younger than age 25 were utilized as measures of structural deprivation.

Analysis of the data revealed that age and aggression were the most significant predictors of inmate-on-inmate assaults. Specifically, this finding suggests that there is a strong correlation between the context of importation theory and inmate violence. Interestingly enough, inmate beliefs, initially thought to be one of the strongest catalysts in predicting aggressive behavior through importation theory, were found to have produced null effects on inmate violence. Although there was a lack of significance for beliefs as a predictive variable, the study does stress the importance of including the importation of beliefs into prison in future research, as it is often very difficult and problematic for inmates to recall a large portion of their criminal beliefs during incarceration. Utilizing a more longitudinal approach or developmental model to measure criminal beliefs and value systems could prove more revealing. Among other micro-level indicators which proved to be unsuccessful in predicting violent inmate behavior were time served, sentence length, and outside contact (visits).

At the macro-level, the proportion of non-Whites and overall population size produced significant multilevel effects, thus indicating the importance of prisons operating within a specified population limit and overall prison design. The finding that the proportion of non-White inmates in a prison is strongly correlated with inmate violence suggests that there could be numerous deprivation effects occurring in response to a multitude of institutional conditions. However, this variable is multifaceted and complex, thus warranting further investigation.

The study also mentions that perhaps one of the most intriguing and important findings was the correlation between the proportion of a prison's population under the age of 25 and inmate violence. While it is commonly assumed that younger inmates are more prone to aggressive and violent behaviors, this study indicates there seems to be a possible blending of deprivation and importation theories to explain inmate assaults. While age is an important factor in determining propensity

towards prison violence, it may also be acting as a catalyst for those inmates who enter prison with aggressive or violent tendencies. Those who exhibit these tendencies, in combination with institutional conditions such as overcrowding and greater presence of young inmates, committed an overall greater number of inmate-on-inmate, non-serious assaults. From a policy perspective, this finding can inform classification guidelines and assessments in order to minimize prison violence, as the relationship between age and assaults was constant across all contexts.

There are several limitations mentioned in the study, including geographic location of the samples institutions and the sampling techniques. Several groups of inmates were excluded from participation for various reasons such as safety risks and temporary restricted housing. However, the overall study sample was heavily populated by violent offenders (67%) with long sentences. This overrepresentation could account for the low incidence rate of violence among the sampled inmates, thus making it difficult to extend and generalize the findings to the rest of the U.S. prison population.

Nevertheless, this study does serve as an interesting and integral piece in building the foundation for future research exploring inmate-on-inmate assaults and prison violence. Both inmates and prison context are important factors in explaining prison violence, as attempting to explain prison violence from only one level seems inadequate. Extensive and intricate data collection that focuses on multilevel modeling could provide even greater results than a simple single-level analysis. This study suggests that prison violence, while mainly an individual-level phenomena, was accentuated in specific prison contexts.