

Appraising the 200-Year Debate: A Meta-Analysis on the Effects of Segregated Confinement

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Introduction

The practice of administrative segregation (AS) has existed in American prisons for more than 200 years (Foucault, 1995). Administrators use AS, also referred to as solitary confinement (SC), to deal with inmates in prison much like society uses prison to deal with criminals in the community. Essentially, AS is used as a form of “detention” within the institution. Although the physical conditions and routines vary by setting and situation, AS generally includes 23 hour a day lockdown in conjunction with very few physical amenities (Metcalf et al., 2013). Since the inception of AS, it has been the center of much controversy. At the present time, just as it was more than 200 years ago, AS remains an unsettled and core issue for the field of corrections.

There has been a long-standing and deep-seated debate in the field with respect to whether or not AS produces any harmful effects in which three claims have been made: (1) AS is psychologically damaging, which tends to align with the deprivation or “schools of crime” theory; (2) AS has little, if any, negative effects, which tends to align with the importation or “behavioral deep freeze” theory; and (3) AS deters misbehavior, with tends to align with deterrence theory. Surprisingly, despite its widespread use, AS has remained an elusive subject of extensive empirical investigation. Instead the majority of AS studies have been limited to those including volunteer participants and those that are qualitative in nature. To illustrate this point, take for example Peter Scharff-Smith’s (2006) historical review of the literature in which he examined segregation studies from 1847 to 2004. Despite including research spanning more than 150 years, Scharff-Smith (2006) was only able to locate 11 studies that used quantitative data and included the use of a control group. Thus, given the limited and complicated nature of the current literature base, which has produced conflicting conclusions and recommendations, it is perhaps not surprising that after more than 200 years, there is still no agreement as to whether or not segregation produces any negative effects.

Purpose of Study

It has been well documented that the application of narrative reviews and vote counting methods based on the direction of the findings to summarize research literatures is vulnerable to reviewer biases and can lead to imprecise estimates of true effect sizes (Hunter & Schmidt, 2004). In contrast, meta-analysis has been shown to help researchers arrive at more accurate and credible conclusions (Hunt, 1997). Therefore, this study will provide the first meta-analysis of the available literature on AS. The main purpose of this study is to provide a clearer understanding of the underlying theory and empirical evidence on the effects of AS. This process will not only assist in the cumulation of knowledge on this important topic, but will also help identify the existing gaps in the research.

Method

In the current investigation, an attempt was made to collect all studies conducted on the effects of segregation on prisoners in custodial settings. In order to locate these studies, the following four steps were taken:

- Conducted literature search with the use of computerized databases
- Examined all of the issues from journals that frequently publish AS topics
- Reviewed annual conference programs (e.g., ASC, ACJS)
- Identified additional studies using an ancestry approach

Eligibility Criteria

To be included in the meta-analysis, studies had to meet the following eligibility criteria:

- IV was placement in AS
- Sample included prisoners in custodial setting and comparison group
- DV occurred after placement in AS
- Study contained sufficient data to calculate an effect size (i.e., Pearson *r* or phi coefficient).

Dependent Variables

The outcome measures employed in the studies reviewed were grouped into one of three categories:

Behavioral indices

- Institutional adjustment; misconduct; recidivism

Physiological indices

- Physical health (e.g., raised blood pressure); sensory arousal/cortisol levels (e.g., EEG)

Psychological indices

- Psychological instruments that measure personality, mood, cognitive functioning, and adaptive functioning

Results

A total of 150 studies were reviewed for the purposes of this meta-analysis including books, published articles, and reports from correctional agencies. Of the 150 studies located, only 15 (or 10%) were suitable for analysis according to our inclusion criteria. This finding reveals a critical limitation of the current AS literature base—the majority of the segregation research is anecdotal and based largely on opinion.

We were able to generate 266 separate effect sizes from the 15 studies examined, which included a total of 31 effect sizes involving behavioral indices, 16 involving physiological indices, and 219 involving psychological indices. Studies were able to contribute more than one effect size to an outcome category. As such, the *k* values do not necessarily represent a unique set of offenders within each category.

The majority of the studies examined were journal articles published within the last 13 years, and the authors were primarily academics from the disciplines of psychology and criminology. Approximately three quarters of the studies included in this meta-analysis were conducted in the United States. Furthermore, the vast majority of samples involved adult male inmates, although a small proportion had mixed gender (male and female) samples.

The mean effect size (*r*) of AS on outcome was -.04, and after weighting by sample size, the weighted mean effect size (*Z*⁺) was -.03. When the results were examined by type of outcome, the confidence intervals from both the behavioral (*r* = .00, *CI* = -.02 to .01) and physiological (*r* = -.08, *CI* = -.17 to .01) outcome categories overlapped with zero. In contrast, the mean *r* for the psychological indices was -.04, and its confidence interval (-.06 to -.02) did not overlap with zero. These findings suggest there is a negative relationship between AS and the outcomes examined; however, it must also be noted that the magnitude of these effect sizes are also rather small.

When the mean effect size correlations are examined by specific outcome type there are a few interesting findings that emerge. First, the two behavioral indicators measured within the institution (adjustment and misconduct) actually represent an advantage for the AS inmates, whereas the post-release measure (recidivism) represents a disadvantage. Second, both of the physiological outcomes examined seem to favor the comparison group, but the confidence intervals also overlap with zero. Finally, taken together the five psychological measures seem to represent a disadvantage for the AS inmates. However, with the exception of the adaptive functioning measure, the magnitudes of the correlations in this category are all relatively small.

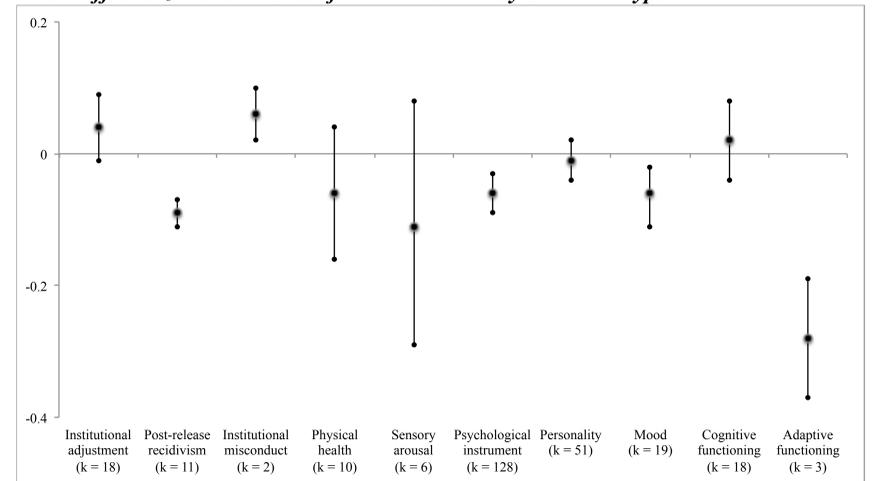
Listing of Study Author, Year, Type of Indicator, and Number of Effect Sizes

Author (Year)	Indicator	Number of ES
Andersen et al. (2003)	Adaptive functioning	3
	Mood	2
	Physical health	4
Briggs, Sundt, & Castellano, (2003)	Institutional misconduct	2
Butler et al. (2013)	Recidivism	2
Ecclestone, Gendreau, & Knox (1974)	Cognitive functioning	2
	Physical health	6
	Stress	2
	Sensory arousal/cortisol level	2
	Sensory arousal/cortisol level	2
	Recidivism	3
Gendreau et al. (1968)	Sensory arousal/cortisol level	2
	Sensory arousal/cortisol level	2
Gendreau et al. (1972)	Sensory arousal/cortisol level	2
	Sensory arousal/cortisol level	2
Lovell & Johnson (2004)	Recidivism	3
Lovell, Johnson, & Cain (2007)	Recidivism	2
Mears & Bales (2009)	Recidivism	2
Miller (1994)	Psychological instrument	6
Miller & Young (1997)	Psychological instrument	18
Motiuk & Blanchette (2001)	Recidivism	2
O’Keefe et al. (2010)	Institutional adjustment	18
	Cognitive functioning	6
	Personality	30
	Mood	14
	Psychological instrument	30
	Cognitive functioning	8
	Personality	20
	Psychological instrument	30
	Cognitive functioning	2
	Personality	1
Mood	3	
Psychological instrument	2	
Suedfeld et al. (1982)	Cognitive functioning	8
	Personality	20
	Psychological instrument	30
	Cognitive functioning	2
Zinger, Wichmann, & Andrews (2001)	Personality	1
	Mood	3
	Psychological instrument	2
	Psychological instrument	2

Mean Effect Sizes by Outcome Category Type

Outcome	<i>k</i>	<i>n</i>	<i>r</i> (sd)	95% CI	<i>Z</i> ⁺
Behavioral	31	11,853	.00 (.15)	-.02 to .01	-.03
Physiological	16	480	-.08 (.27)	-.17 to .01	-.13
Psychological	219	11,740	-.04 (.14)	-.06 to -.02	-.03
Total	266	24,073	-.04 (.15)	-.05 to -.03	-.03

Mean Effect Sizes and 95% Confidence Intervals by Outcome Type



Discussion

Despite the fact that AS has existed in our prison system since its inception, and has also remained a popular point of discussion throughout history, not only in academic, but also professional circles, it has an unfortunate unimpressive literature base. That is not to say that impressive studies do not exist, but rather that they are the exception and not the rule. Ironically, despite the lack of clear and convincing empirical support, most reviewers tend to suggest that AS is detrimental to the well being of inmates.

The findings of this meta-analysis do not support the popular contention that AS is a psychologically destructive environment that leads to lasting emotional damage, functional disability, and psychosis (as suggested by Grassian, 1983; Grassian & Friedman, 1986; Haney, 2003; Jackson, 1983; Scharff-Smith, 2006). Although this study found there was an overall negative effect of AS on offender outcomes, the magnitude of the effect size was very small (*r* = -.04). These results lend support to the importation or “behavioral deep freeze” perspective in that AS does appear to produce some negative effects, but the outcomes are not nearly as dramatic as described by its critics. It must be cautioned, however, that this investigation is based on surprisingly little evidence (only 15 studies), and it remains plausible that AS may differentially impact the outcomes of certain offenders. Of course, more research with strong experimental designs that examine the influence of theoretically important moderators (e.g., risk, institutional climate, mental health) is needed before conclusions of this nature can effectively be drawn.

In conclusion, policy makers should be weary of basing decisions regarding AS exclusively from the dearth of available narrative reviews. As evidenced in this meta-analysis, many of the conclusions drawn from this type of investigation simply do not have the backing of empirical support. It is also very important that this study not be interpreted as support for the use of AS. Remember the analyses conducted here also did not find evidence of a deterrent effect of AS, and given the significant correlation with recidivism (*r* = -.09, *CI* = -.11 to -.07), it is suggested here that more careful consideration should be placed on who is placed in AS and why. Despite all of the limitations therein, this study represents a significant advancement in the AS literature and hopes to serve as a rallying call for researchers to produce better quality studies in the future.