

The Effect of Long-Term Exposure to Solitary Confinement on Institutional Misconduct: A Propensity Score Analysis

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Solitary Confinement

- Solitary confinement (SC) remains a controversial practice, and typically involves the physical separation of an inmate in a closed cell for 20 or more hours per day.
- Prison administrators often contend that SC is essential for maintaining safety and security in prison environments.
- Critics argue that SC is associated with many negative outcomes, including increased criminal behavior (and especially when used for prolonged periods).

Theoretical Perspectives

- **General and specific deterrence**
 - SC suppresses antisocial behavior and is an important tool for the management of safe prisons.
- **Schools of crime/Cruel and unusual punishment**
 - The experience of SC causes undue psychological distress and increases criminal behavior.
- **Importation/Behavioral deep freeze**
 - SC has little impact (depending on conditions of confinement and other moderators).

Current Statistics

- Prisons in North America routinely use SC:
 - More than 20% of U.S. inmates spent time in SC in the previous year (Beck, 2015).
 - Approximately 24% of Canadian inmates in the federal system spent time in SC over the course of one year (Zinger, 2013).
- Despite its widespread use, there are growing concerns regarding the ethical, legal, and other adverse effects of SC.

Previous Research

- The majority of SC studies focus on psychological outcomes.
- Few studies assess the impact of SC on behavioral indicators, and the results have been mixed (e.g., Ralph & Marquart, 1991; Lovell et al., 2007; Mears & Bales, 2009; Butler et al., 2016; Morris, 2016).

Previous Research

- The available behavioral research tends to focus on post-release recidivism outcomes.
- Curiously, few studies examine the effects of SC on measures of institutional adjustment (e.g., Labrecque, 2015; Lucas & Jones, 2017; Morris, 2016).
- This research suggests a null effect of SC; however, it focuses almost exclusively on disciplinary segregation that is used for relatively short durations (e.g., 30 days or less).

Current Study

- There is very little empirical information available regarding what effect SC has on measures of institutional adjustment, especially when used for prolonged durations (i.e., ≥ 90 days).
- The goal of this study is to examine the effect that long-term exposure to SC has on subsequent inmate behavior in a large sample of incarcerated offenders.

Method

- The sample included ODRC admissions between 2007-2011.
- Eligibility criteria used to select cases:
 - Inmate must have served at least 2 consecutive years in custody
 - Inmate must be incarcerated for the first time with ODRC
 - Sample was restricted to male inmates only
 - Measure of SC included administrative and disciplinary segregation
 - Long-term SC was defined as spending 90 continuous days or more in SC within the first year: N = 511
 - The comparison group included inmates who spent 14 or fewer days in SC during first year: N = 15,603
 - Inmates had to be returned to GP by the start of the second year

Method

- Institutional misconduct was defined as any violation of an ODRC rule of conduct during the second year of incarceration:
 - VIOLENT/SERIOUS OFFENCES (e.g., assault)
 - NONVIOLENT OFFENCES (e.g., damage to property, theft, drug use)
 - ANY INSTITUTIONAL MISCONDUCT
 - ANY PLACEMENT IN SC

Analyses

- Propensity score matching (PSM) without replacement, one-to-one nearest neighbor matching with .001 tolerance level
 - Matched inmates with prolonged exposure to SC (≥ 90 days) to inmates with minimal exposure to SC (≤ 15 days) on sixteen criminal history and institutional variables
 - Provided an unbiased estimate of SC group on institutional misconduct measures
 - Conducted chi-square tests to assess difference in outcomes between two groups

Pre and Post Match Comparisons

	Pre-match			Post-match		
	% 90+ SC (N = 511)	% <15 SC (N = 15,603)	% Bias	% 90+ SC (N = 505)	% <15 SC (N = 505)	% Bias
Mean age (SD)	***28.1 (9.7)	33.0 (11.3)	50.3	28.1 (9.7)	28.1 (9.9)	0.4
Black	46.6	48.6	4.0	46.7	48.3	3.2
Serious mental illness	***48.5	26.6	46.4	47.9	43.8	8.2
Gang affiliation	***44.4	19.3	55.9	43.8	39.6	8.5
Violent conviction	***77.5	65.7	26.4	77.2	74.9	5.4
F1 (most serious)	**38.4	32.8	11.7	38.8	35.0	7.9
F2	28.4	29.6	2.6	27.9	29.7	4.0
F3	26.4	30.4	8.9	26.3	28.5	4.9
F4	5.1	5.4	1.4	5.1	4.4	3.3
F5 (least serious)	1.8	1.8	0.0	1.8	2.4	4.2
Maximum	0.6	0.3	4.5	0.4	0.8	5.2
Close	***44.2	22.1	48.3	*44.0	36.8	14.7
Medium	***47.0	58.4	23.0	47.3	52.1	9.6
Minimum	***8.2	19.2	32.4	8.3	10.3	6.9
Pre-violent misconduct	***55.4	9.8	111.3	54.9	58.4	7.1
Pre-nonviolent misconduct	***91.6	17.6	267.0	91.5	91.5	0.0

Note: * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Model Fit Summary

	Pre-match	Post-match
Percent significant differences	62.50	6.25
Mean standardized percent difference or bias	43.38	5.84
Maximum percent bias	267.00	14.70
Percent with bias over 20	56.30	6.25
Percent with bias over 10	62.50	0.00
Area under the curve (AUC)	0.94	0.50

Difference in Misconduct Outcomes

	% 90+ SC	% <15 SC	Difference	ϕ
Pre-match				
Any misconduct	***66.7	31.4	35.3	0.13
<i>Violent</i>	***36.6	12.7	23.9	0.12
<i>Nonviolent</i>	***60.7	26.3	34.4	0.14
Any SC placement	***72.2	33.0	39.2	0.15
Post-match				
Any misconduct	**66.3	57.8	8.5	0.09
<i>Violent</i>	36.0	30.9	5.1	0.06
<i>Nonviolent</i>	***60.2	48.5	11.7	0.12
Any SC placement	***71.9	58.6	13.3	0.14

Note: * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Discussion

- This project is one of the first empirical studies to compare differences in institutional adjustment measures between inmates who experience long versus short stays in SC.
- Preliminary evidence suggests that the effects of long-term exposure to SC *may* lead to adverse behavioral effects.
- The prolonged exposure to SC (i.e., ≥ 90 days) in the first year of incarceration leads to a 12% increase in the occurrence non-violent misconduct and a 13% increase in the occurrence of placement in SC in the second year of incarceration.

Limitations

- The current study was limited to data routinely collected by ODRC.
- It is unknown if the current findings generalize to other jurisdictions and/or different lengths of time in SC.
- Other important (and unobserved) variables could impact the results (e.g., conditions of confinement, institutional climate, availability of programs and services, etc.).

Policy Recommendations

- Limit the length of time spent in SC to less than 90 days.
- Implement other (more effective) approaches to target the criminogenic needs of inmates to provide skills necessary to avoid future misconducts and improve institutional adjustment.

Future Research

- More research is needed on SC, particularly studies to evaluate its impact on behavioral outcomes.
- Researchers should seek to move beyond the analysis of administrative data and collect primary data.
- There is a need for more research on the influence of moderators (e.g., age, gender, race, mental health).
- Alternative options (e.g., treatment/intervention options) should be explored to determine if they may produce more positive effects on institutional adjustment and inmate behavior.

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