

The Impact of Solitary Confinement on Inmate Behavior: A Meta-Analytic Review

Paula Smith, Ph.D.

Associate Professor, University of Cincinnati

Paul Gendreau, Ph.D., O.C.

Professor Emeritus, University of New Brunswick

Ryan M. Labrecque, M.S., ABD

Assistant Professor, Portland State University

Previous Literature Reviews

- Previous reviews of the SC literature have relied on ideographic methods to summarize findings.
- The most extensive review conducted to date (see Scharff-Smith, 2006) did not use quantitative techniques (e.g., vote counting technique or calculation of effect size estimate) to summarize findings.

Current Literature Review

- This study represents one of the first meta-analytic reviews of the research on SC.
- The results have important policy implications for the management of correctional institutions, as well as practical applications within the context of offender treatment.
- Specifically, this meta-analysis aims to further our understanding of the empirical evidence on the effects of SC:
 - Cumulating knowledge
 - Identifying gaps in the empirical literature
 - Generating recommendations for future research

Eligibility Criteria

- In order to be eligible for inclusion, studies were required to:
 - Use some measure of SC as the independent variable
 - Use a randomized or comparison control group design
 - Contain sufficient data to calculate an effect size (i.e., Pearson r or phi coefficient) between SC and outcome
- The longest follow-up period available was coded.

Dependent Measures

- **Medical/physiological indicators**
 - Physical health (e.g., increased blood pressure); lowered sensory arousal (e.g., EEG, VEP)
- **Psychological indicators**
 - Anger, hostility, anxiety, depression, psychosis, paranoid ideation, intelligence, cognitive impairment, somatization, coping, negative attitude, hypersensitivity, global functioning
- **Behavioral indicators**
 - Post-release recidivism; institutional misconduct

Effect Size Calculation and Interpretation

- Pearson r was selected as common metric with 95% confidence intervals (CIs) to estimate the magnitude of effect size (ES).
 - Positive correlation indicates an *iatrogenic effect*.
 - Negative correlation indicates a *positive effect*.
- Studies could contribute more than one ES as long as each one represented an estimate for unique samples of offenders.
- If a study reported multiple outcome measures for a similar construct, the estimates in this domain were averaged.
- Random effects model results are reported.

Effect Size Calculation and Interpretation

- Interpretation focuses on the CIs of the point estimates.
 - The CI provides a robust estimate of the probability of replicating a specific result (Cumming, 2012).
 - If the CI contains 0, it does not necessarily mean that there is no effect (see Schmidt & Hunter, 1997).
 - CIs with a width greater than .10 are considered to be imprecise (see Gendreau & Smith, 2007).
- The statistic I^2 is used to evaluate the heterogeneity of the ES estimates (Higgins & Thompson, 2002)

Description of Studies

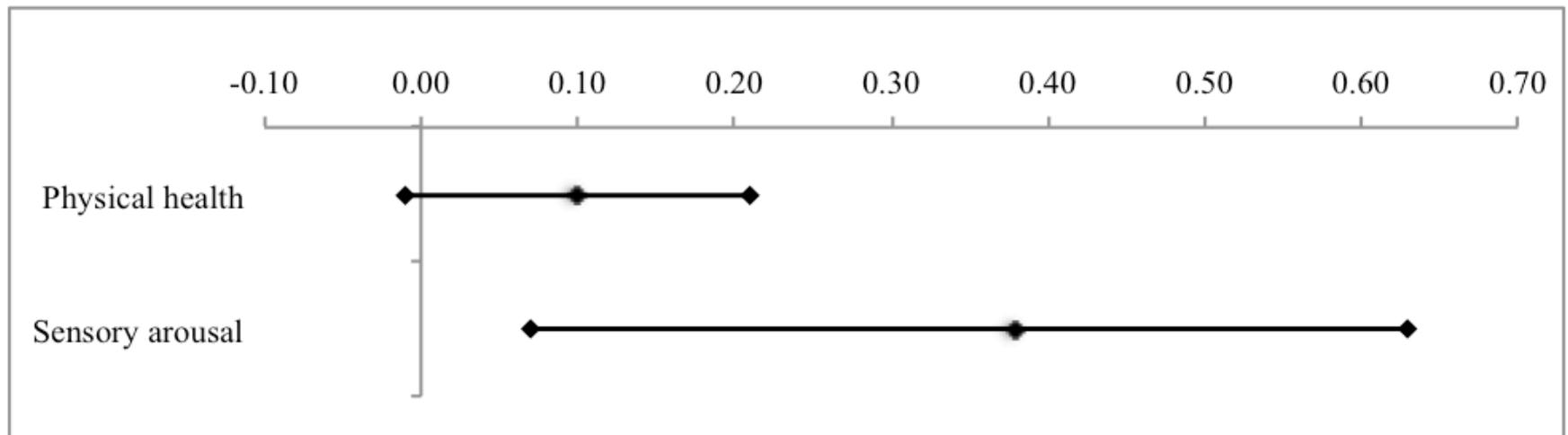
- Total # of studies reviewed = 150
- Total # of studies included = 14 ($\approx 90\%$ rejection rate)

- 71% of studies were published after 2000
- 64% of studies were conducted in the U.S.
- All samples were $\geq 80\%$ male inmates

- Total # of effect size estimates = 65
 - Medical/Physiological $k = 6$
 - Psychological $k = 50$
 - Behavioral $k = 9$

Physiological Measures

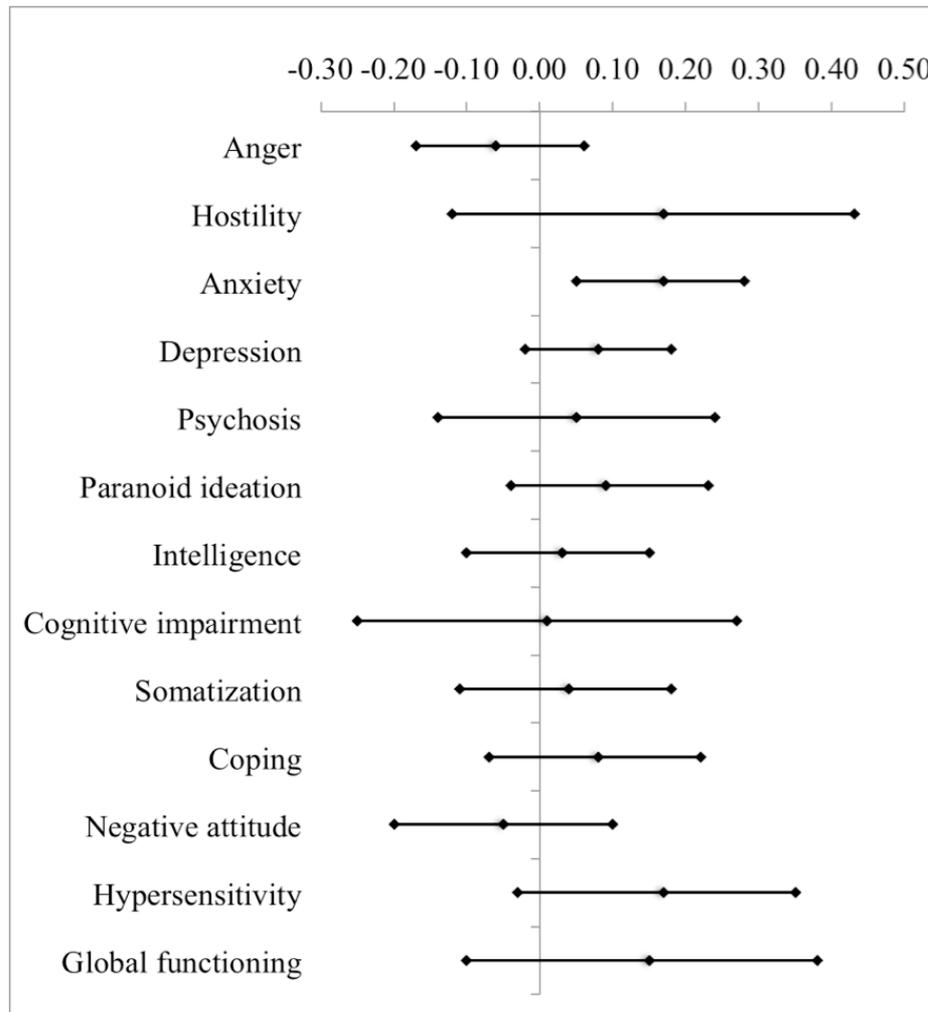
	<i>r</i>	95% <i>CI</i>	<i>I</i> ²	<i>n</i>	<i>k</i>
Physical health	.10	-.01 to .21	0%	314	4
Sensory arousal	.38	.07 to .63	0%	40	2



Psychological Measures

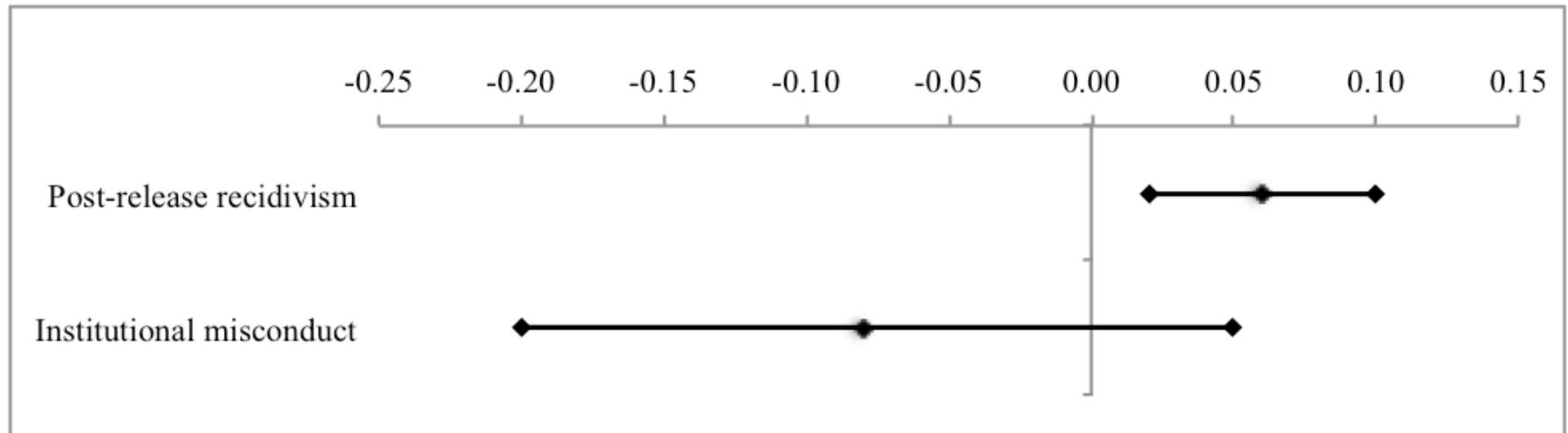
	<i>r</i>	95% <i>CI</i>	<i>I</i> ²	<i>n</i>	<i>k</i>
Anger	-.06	-.17 to .06	0%	315	3
Hostility	.17	-.12 to .43	74%	244	5
Anxiety	.17	.05 to .28	36%	474	6
Depression	.08	-.02 to .18	13%	474	6
Psychosis	.05	-.14 to .24	39%	219	4
Paranoid ideation	.09	-.04 to .23	0%	219	4
Intelligence	.03	-.10 to .15	23%	315	3
Cognitive impairment	.01	-.25 to .27	79%	314	4
Somatization	.04	-.11 to .18	8%	219	4
Coping	.08	-.07 to .22	0%	179	2
Negative attitude	-.05	-.20 to .10	0%	179	2
Hypersensitivity	.17	-.03 to .35	40%	219	4
Global functioning	.15	-.10 to .38	73%	280	3

Psychological Measures



Behavioral Measures

	<i>r</i>	95% CI	<i>I</i> ²	<i>n</i>	<i>k</i>
Post-release recidivism	.06	.02 to .10	25%	4,636	7
Institutional misconduct	-.08	-.20 to .05	87%	1,904	2



Moderators

- Very little information was available on important moderators (i.e., age, gender, race, mental health status, risk for recidivism).
- Data on situational variables were virtually non-existent.
- Design strength
 - Weaker designs ($k = 24$): $r = .21$ [.12, .29]
 - Stronger designs ($k = 41$): $r = .03$ [<.001, .05]

Conclusion

- Despite its long history of use in corrections, SC does not have an extensive empirical literature base.
- Most reviewers tend to suggest that SC is detrimental to the well-being of inmates.
- However, this meta-analysis does not support the popular contention that SC produces long-lasting psychological damage.
- Medical/physiological effects have often been misinterpreted.
- There is tentative support for the notion that SC increases recidivism.

Contact Information

Paula Smith

School of Criminal Justice

University of Cincinnati

P.O. Box 210389

Cincinnati, OH 45221-0389

E-mail: paula.smith@uc.edu