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Public Support for Solitary Confinement: A Randomized Experiment of Belief Updating and Confirmation Bias

Kayla J. LaBranche[a] and Ryan M. Labrecque[b]

[a]Department of Criminology and Criminal Justice, Portland State University, Portland, Oregon, USA;
[b]Department of Criminal Justice, University of Central Florida, Orlando, Florida, USA

ABSTRACT

This randomized control experiment investigates whether providing educational information about solitary confinement (SC) cause respondents to update their beliefs about the practice. It also examines whether prior views about punishment moderate the influence of the message content on changes in level of support for SC. Study participants were recruited from Amazon's MTurk workplace to complete an on-line survey about their level of punitive orientation and support for SC. Participants were randomly assigned to one of two treatment conditions that provided differing messages about SC through brief, educational videos. Study results suggest participants who received information that SC is necessary for institutional order increased their support for the practice at post-test, while those who viewed information that SC is harmful to its inhabitants decreased their support for its use. This study did not find evidence that punitive orientation influenced the impact of the message received on changes in attitude toward SC.

KEYWORDS

solitary confinement; administrative segregation; restrictive housing; prisons; public support

Introduction

Solitary confinement (SC) refers to the isolation of an inmate in a single cell for 20 or more hours per day (Cochran et al., 2018). One's ability to interact with other people is largely limited in SC, as are opportunities to participate in treatment programs and other services (Gendreau & Labrecque, 2018; Labrecque, 2016). Solitary confinement has become at the center of a contentious debate regarding its efficacy and unintended effects (Frost & Monteiro, 2016; Haney, 2018; Mears, 2016). Prison officials often support the use of SC because they believe it reduces institutional violence and disorder, while its critics oppose the practice on the grounds that it causes serious psychological damage and increases institutional rule violations (see Labrecque & Mears, 2019). Despite its notable rise in academic and media attention during the last decade (Garcia, 2016), public perceptions about SC remain largely unknown (see, however, Jagel, 2013; Mears et al., 2013).

This study seeks to address this gap in knowledge by conducting a randomized control experiment that assesses if perceptions about SC can be altered when given information regarding its uses and effects. More specifically, study participants were randomly assigned to view a short educational video supporting either the proponent or opponent view on SC. The former condition conveyed the message that SC helps corrections officials maintain

CONTACT Ryan M. Labrecque ryan.labrecque@ucf.edu Department of Criminal Justice, University of Central Florida, Orlando, FL 32816, USA.

safety and order in dangerous and chaotic prison environments and the latter communicated the message that SC causes serious psychological damage and further increases criminal behavior. After watching the educational videos, participants were reassessed to determine if one's beliefs about SC were updated in relation to his or her assigned treatment condition. We anticipate that people will modify their beliefs in the direction of message received. In addition, this study explores if prior attitude about punishment more generally has any influence on the direction or magnitude of the change in one's level of support for SC in both treatment conditions. We predict that people will be more likely to update their beliefs when the message received aligns with their prior views about punishment. The implications of the study's findings are discussed.

Background

On any given day in the United States, there are more than 1.5 million adults incarcerated in prison (Kaeble & Cowhig, 2018). Considering the size of this population, prison authorities face significant challenges in ensuring safety and order within these institutions. One strategy for keeping the peace involves spreading problematic inmates across facilities throughout the prison system (Shalev, 2009). This dispersal approach seeks to dilute the negative influence of disruptive inmates by housing them among other more compliant offenders. In contrast, another tactic involves removing the troublesome inmates from the general prison population and consolidating them into tightly controlled facilities or units (e.g., supermax prisons, special housing units). This concentrated approach anticipates greater systemwide safety and order as a result of isolating dangerous and disruptive inmates into these SC settings (Shalev, 2009).

In the United States, prison administrators have largely sought to concentrate rather than disperse difficult-to-manage inmates. Current estimates suggest that authorities place nearly 66,000 inmates (or 4.4% of the total prison population) in SC settings each year (see Beck, 2015). Despite this widespread use, however, SC remains one of the most severe punishments that correctional authorities can impose upon inmates in the modern penological age (Butler & Steiner, 2017). In an SC unit, for example, inmates spend the majority of their day within the confines of a single, small cell (Cochran et al., 2018). These individuals receive little opportunity to meaningfully interact with staff and other inmates (Butler et al., 2013). In addition, these inmates have limited access to recreation, visits, programs and other services more commonly available in the general prison population (Gendreau & Labrecque, 2018). Given the level of these restrictions, SC raises ethical and legal concerns. While commonplace in United States prisons, the use of this practice remains controversial.

The solitary confinement debate

Prison officials often justify the use of SC on the premise that it is necessary for ensuring institutional safety and order (Labrecque & Mears, 2019). According to this position, SC operates as an effective incapacitator and deterrent of unwanted behavior (Mears & Reisig, 2006; Pizarro et al., 2006). It is reasoned that the placement of the "worst of the worst" inmates into SC ensures these offenders will not be able to violate the institutional rules in the general prison population. Furthermore, the punitive nature of the conditions in SC encourage inmates to comply with the institutional rules and expectations in the general

prison population for fear of for being sent to this unpleasant environment (Mears, 2016; Morris, 2016; Pizarro et al., 2014).

In contrast, critics often describe SC as a form of torture which violates constitutional protections against cruel and unusual punishment (Bennion, 2015; Kelsall, 2014). According to this view, the deprivations of human contact and mental stimulation in SC cause inmates to suffer serious psychological damage which further serves to increase, rather than decrease, criminal behavior (Haney, 2003; Kupers, 2008; Toch & Kupers, 2007). This position also maintains that while all inmates are adversely affected by the experience of SC, its negative effects are more pronounced among those suffering from serious mental illnesses (Haney, 2018; Kupers, 2017).

There is a notable lack of empirical research on the effects of SC (Mears et al., 2019). Reviews of this literature suggest that SC has a null to small negative effect on a range of psychological outcomes (Astor et al., 2018; Glancy & Murray, 2006; Kapoor & Trestman, 2016; Morgan et al., 2016; O'Donnell, 2014), and no meaningful influence on measures of institutional order or individual inmate behavior (Gendreau & Goggin, 2019; Labrecque & Smith, 2019; Steiner & Cain, 2016). The commentary on SC, however, remains largely untethered to this evidence. Proponents maintain SC is necessary for maintaining institutional safety and order, while opponents continue to insist this practice is devastating to the mental well-being of its inhabitants and also increases criminal behavior. Despite the differences of opinion expressed in academic and other media reports, public perceptions about the use and effect of SC remains an understudied research area.

Public support for solitary confinement

To our knowledge, there have been only two public opinion polls on SC. In the first study, Jagel (2013) reported that 56% of respondents in a YouGov poll described the use of SC as an appropriate punishment, 13% believed the practice was torture, 16% indicated it was inappropriate, but not torture, and 14% were not sure. In another survey of Florida residents, Mears et al. (2013) found that the majority of respondents generally supported the use of SC (82%). Despite this seemingly high level of public support for SC, it is unknown if and how public beliefs about this practice can be changed. The Mears et al. (2013) study provides tentative evidence for the notion that one's attitude toward SC can be altered when presented with information about its effectiveness. When respondents were told to anticipate no crime-reduction benefit of SC, the support for the practice dropped by 21% (Mears et al., 2013). Although this finding suggests that opinions about SC are not fixed, it is still unclear whether some people are more likely to update their beliefs than others, or if changes depend on the content of the message.

Although social science research generally suggests perceptions are malleable (Aly & Turk-Browne, 2018; Kearns, 2015), it also indicates beliefs deeply rooted in one's sense of morality are more difficult to modify (Horne et al., 2015). For example, when presented with information that conflicts with one's existing values, people may be unwilling to revise their attitudes and instead distort the content of the message to conform to their existing beliefs (i.e., confirmation bias; Nickerson, 1998) or simply ignore the information altogether (i.e., belief perseverance; Cobb et al., 2012). On the other hand, people may be more likely to update their opinions when the information aligns with their preexisting values (Howard, 2019; Tappin et al., 2017). Accordingly, we anticipate individuals harboring more punitive

attitudes about crime and punishment will be more likely to support the use of SC and also less influenced by information about its inefficacy or harmfulness. We also expect individuals with less punitive attitudes toward crime and punishment will be less likely to support the use of SC and less influenced by information about its benefits and null psychological effects.

Current study

This randomized control experiment investigates whether beliefs about SC change after receiving information regarding either its benefits or detriments. More specifically, it uses survey data collected from a sample of United States residents to test the following two hypotheses. First, we anticipate that people who receive educational information about SC will update their beliefs toward the practice in the direction of the content provided. Those viewing information that SC is necessary for institutional order will update their beliefs in further support of the practice, while those receiving information that SC is harmful to its inhabitants will update their beliefs in further opposition of the practice.

Second, we predict that people who receive educational information about SC will update their beliefs about the practice when the content aligns with their preexisting views toward punishment and will not update their beliefs when the content differs from these views. Those harboring more punitive sentiments will update their beliefs in further support of SC when presented with information that the practice is necessary, but will not modify their beliefs when presented with information that it is harmful. Those with less punitive values will update their beliefs in further opposition of SC when presented with information that the practice is harmful, but will not modify their beliefs when presented with information that it is necessary.

Methods

Design

This study involved a pretest-posttest experimental design with random assignment to one of two treatment conditions. Participants were recruited from Amazon's Mechanical Turk (MTurk) workplace[1] to complete an online survey about their level of punitive orientation and support for the use of SC. The participants then viewed an educational video containing information either that SC is necessary in prisons or that SC is harmful to its inhabitants. Participants were then reassessed to see if their views about SC changed in response to the assigned treatment condition or varied by one's level of punitive orientation (i.e., less punitive versus more punitive individuals).

Participants

Participation in this study was limited to people living in the United States who were 18 years of age or older. Recruitment in MTurk was kept open until 500 participants who correctly responded to our attention check questions were obtained.[2] All participants were compensated 2.50 USD for completing the survey. Fourteen of these individuals failed to

complete all parts of the survey and were excluded from the study due to missing information. The final sample included 486 participants.

Procedure

The online survey contained six sections. The first gathered basic demographic information (i.e., gender, race, political affiliation). The second assessed perceptions toward empathy and desire for retaliation, which was used to split the sample into less and more punitive oriented groups. The third asked questions about how inmates should be treated in prison, which were used to construct the pretest support for SC score. The fourth provided a standard definition of SC and then randomly assigned participants with a link to watch a short educational video on either the necessity of SC or the harm that SC causes to its inhabitants. The fifth consisted of a filler task, which was assigned to increase the time between the pretest and posttest support for SC measurements.[3] The sixth reassessed the questions from section three but varied the order to lessen the possibility that participants would remember the earlier responses. Participants took an average of 15 and a half minutes to complete the survey.

Data and measures

Survey participants were asked to provide basic demographic information about themselves, including their age (measured in years), gender (1 = male, 0 = female), race (1 = white, 0 = nonwhite), highest educational level (four-year college degree: 1 = yes, 0 = no), political ideology (dummy variables for Democrat, Independent, and Republican), religious preference (1 = religious, 0 = not religious), gross annual family income (1 = 50,000 USD and above, 0 = less than 50,000 USD), and region of United States residence (dummy variables for Midwest, Northeast, South, and West). Everyone was then given a standardized definition of SC:

> For the purpose of this investigation, the study defines solitary confinement as isolation in a single cell for 20 or more hours per day with minimal access to programming, services, recreation, and interaction with other people. Inmates in solitary confinement settings eat, sleep, and use the bathroom in their cell. Whenever an inmate leaves his or her solitary cell, they are handcuffed and escorted by correctional staff.
>
> Inmates are held in solitary confinement for various amounts of time, with some spending only a few days and others spending multiple years. The reasons for placement also vary, with some sent for punitive (e.g., punishment for rule violation), protective (e.g., prevent vulnerable inmate from being the victim of attack), and other administrative purposes (e.g., threat to the institution).

Participants were then randomly assigned into one of two treatment conditions: SC is necessary for institutional order (n = 244) or SC is harmful to its inhabitants (n = 242). The participants viewed a three-minute educational video with recorded prison footage and a text overlay with information supportive of their assigned condition.[4] The first condition contends that SC is necessary in prison because some inmates are violent and pose a threat to the safety of staff and other inmates (see Appendix A). The second condition argues that SC causes serious psychological damage and should not be used in prisons (see Appendix B).

A 20-item survey was constructed to assess level of support for SC (see Appendix C). This instrument asked participants to provide their opinion on a series of statements related to their correctional ideology, including "placing disruptive inmates in solitary confinement is the only way to stop them from engaging in more acts of violence and breaking the rules," and "the best way to prevent violence within prisons is to provide inmates with something to do, such as educational and recreational programs." Participants ranked their level of agreement with each statement using a sliding scale from zero to 100. Positive statements were reversed coded so lower values indicated greater support for punitive correctional policies. These scores were then summed and transformed to create a final scale that ranged from zero (less support for SC) to 100 (more support for SC). Our survey displayed a high level of internal consistency (Cronbach's α =.93). Participants completed this assessment twice – both before and after the treatment condition. The two survey scores served as the study's pretest and posttest measures.

In order to determine one's level of punitive orientation, participants completed the Vengeance Scale (Stuckless & Goranson, 1992). This instrument was designed to measure how supportive one is to the belief that people who commit criminal acts deserve severe punishment as retribution for the harms they have caused (Cullen et al., 2000). This scale asked participants to give their opinion to 20 statements, including "I don't just get mad, I get even," and "revenge is morally wrong." Items were ranked on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree." Responses were given a numerical value based on one's level of agreement with each statement (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neither, 5 = slightly agree, 6 = agree, 7 = strongly agree). Positive responses to statements that indicated support for empathy were reverse coded. These values were then summed to produce an overall score that ranged from 0 (i.e., extremely empathetic) to 140 (i.e., extremely vengeful).

The mean vengeance scale score for the participants in our study was 46.7. This information was used to dichotomize the sample into two groups. Those with scores below the mean were placed in the low punitive group (n = 268), and those with scores at or above the mean were placed in the high punitive group (n = 218).

Statistical analysis

This investigation begins with a comparison of the demographic characteristics of the participants assigned to both treatment conditions (i.e., SC is necessary, SC is harmful). A series of independent samples t-tests were then conducted to assess the influence of the educational videos on the level of support for SC scale. More specifically, these tests examine if the SC support scores differed from pretest to posttest by treatment condition, and if the changes in score also varied by level of punitive orientation and treatment condition (i.e., high punitive and SC is necessary, high punitive and SC is harmful, low punitive and SC is necessary, low punitive and SC is harmful). The interpretation of the results focus on three aspects of each effect size, including its statistical significance (i.e., $p < .05$), direction (i.e., positive or negative changes), and magnitude (i.e., strength of the association).[5] Finally, a multivariate ordinary least squares regression analysis was conducted to determine the influence of treatment condition on one's change in support for SC score while accounting for their punitive orientation and other demographic information.

Results

As can be seen in Table 1, the survey respondents in this study were primarily white and in their late-30s. The sample was pretty evenly split on the categories of gender, education, religiosity, and family income. Participants were also most likely to reside in a southern state and identify their political beliefs as democrat.

Independent samples *t*-tests indicated no statistically significant group differences at the .01 level on any of the characteristics examined between the participants assigned to the SC is necessary condition and those assigned to the SC is harmful condition (see Table 1). This finding provides support that the randomization process was effective. With the exception of the treatment condition received, the individuals assigned to both groups were statistically and substantively similar to one another on all characteristics examined.

Table 2 shows the two groups held nearly identical levels of support for SC at the pretest assessment (mean scores of 36.8 vs. 36.3); however, at posttest, the support scores for both groups changed significantly in the direction of the assigned condition ($p < .001$). More specifically, as anticipated by the first hypothesis, those receiving the SC is necessary information significantly increased their level of support for SC at posttest (+4.9 points), while those receiving the SC is harmful information significantly decreased their level of support for the practice at posttest (–7.1 points).

Table 1. Demographic characteristics by treatment condition.

	SC is necessary (n = 244)		SC is harmful (n = 242)			
Characteristic	*Mean*	*SD*	*Mean*	*SD*	*t*	*p*
Age	38.54	11.83	38.26	38.54	0.3	.790
Male	0.43	0.50	0.51	0.43	−1.8	.086
White	0.76	0.43	0.74	0.76	0.5	.601
College graduate	0.43	0.50	0.53	0.43	−2.2	.030
Political ideology						
Republican	0.20	0.40	0.20	0.20	0.1	.946
Independent	0.36	0.48	0.28	0.36	1.8	.074
Democrat	0.44	0.50	0.52	0.44	−1.7	.085
Religious	0.49	0.50	0.53	0.49	−0.9	.364
Family income ≥ $50,000	0.48	0.50	0.44	0.48	1.0	.338
U.S. region of residence						
Midwest	0.19	0.39	0.20	0.19	−0.4	.713
Northeast	0.23	0.42	0.21	0.23	0.4	.678
South	0.37	0.48	0.35	0.37	0.3	.731
West	0.22	0.41	0.24	0.22	−0.5	.647
Vengeance Scale score	47.89	29.01	45.43	47.89	0.9	.358

SC = solitary confinement. SD = standard deviation.

Table 2. Differences in pretest-posttest support for sc scores, by treatment condition.

	Pretest	Posttest	Change			
Condition	*M (SD)*	*M (SD)*	*M (SD)*	*t*	*p*	Cohen's *d*
SC is necessary	36.8 (17.7)	41.8 (18.0)	+4.9 (9.2)	−8.3	<.001	.28
SC is harmful	36.3 (16.4)	29.2 (17.4)	−7.1 (9.0)	12.2	<.001	.42

SC = solitary confinement. M = mean. SD = standard deviation.

Table 3. Differences in pretest-posttest support for SC scores, by punitive orientation and treatment condition.

	Pretest	Posttest	Change			
Group	*M (SD)*	*M (SD)*	*M (SD)*	*t*	*p*	Cohen's *d*
High pun. + necessary	43.7 (16.1)	47.9 (16.8)	+4.3 (6.8)	−6.9	<.001	.26
High pun. + harmful	42.9 (14.3)	36.0 (17.2)	−6.9 (9.6)	7.4	<.001	.43
Low pun. + necessary	31.0 (16.9)	36.5 (17.4)	+5.5 (11.1)	−5.7	<.001	.32
Low pun. + harmful	31.2 (16.2)	23.9 (15.7)	−7.3 (8.6)	8.6	<.001	.46

SC = solitary confinement. M = mean. SD = standard deviation. Pun. = punitive.

The next set of analyses examines if one's preexisting views about punishment influenced their belief updating (see Table 3). As expected, the individuals classified as high punitive on the Vengeance Scale reported much greater support for SC during the pretest assessment than those classified as low punitive on this scale (mean scores of 43.3 vs. 31.1). Nevertheless, we did not find support for the predictions in our second hypothesis. Although the participants receiving information that aligned with their prior views about punishment altered their level of support for SC in the direction of the information viewed at posttest as expected, those receiving content that differed from their views did not maintain similar beliefs about SC at posttest, but rather also updated their beliefs in the direction of the content received.

Finally, multivariate ordinary least squares regression was conducted to investigate the best predictors of the change in support for SC scores from pretest to posttest (see Table 4). The combination of variables used in this analysis were statistically significant in predicting the changes in score ($p < .001$) and 30% of the variance in the score changes were explained by the model. When all 13 of these variables were considered together, the only statistically significant predictor that emerged was the condition assignment. For those in the SC is harmful condition, there was a significant decrease in the SC level of support score from pretest to posttest ($\beta = -.54$, $p < .001$).

Table 4. Multivariate ordinary least squares regression predicting change in SC support score.

Variable	*B*	*SE B*	*β*	*t*	*p*
SC is harmful condition	−11.83	.87	−0.54	−13.7	<.001
High punitive orientation	−0.37	.87	−0.02	−0.4	.672
Age	−0.05	.04	−0.05	−1.2	.242
Male	−0.22	.90	−0.01	−0.2	.807
White	0.55	1.05	0.02	0.5	.601
College graduate	−1.24	.88	−0.06	−1.4	.160
Political ideology[a]					
Republican	−1.14	1.22	−0.04	−0.9	.351
Independent	0.84	.99	0.04	0.9	.393
Religious	0.20	.92	0.01	0.2	.829
Family income ≥ $50,000	1.08	.88	0.05	1.2	.222
U.S. region of residence[b]					
Midwest	−0.81	1.21	−0.03	−0.7	.505
Northeast	−1.13	1.17	−0.04	−1.0	.335
West	−1.24	1.15	−0.05	−1.1	.284
Constant	7.05	2.04			

SC = solitary confinement. [a] Reference group = Democrat. [b] Reference group = South.
R^2 =.32; F(13, 460) = 16.26, p <.001.

Discussion

The results from this randomized experiment suggest that providing people with information about the use and effect of SC can influence their belief updating about the practice in the direction of the content received. More specifically, this study found that participants viewing a short educational video with information emphasizing that SC is necessary for institutional order had a significant increase in their support for the use of the practice, while those viewing a video with information indicating that SC is harmful to its inhabitants had a significant decrease in their support for the practice. These findings suggest that attitudes about SC are malleable, and further emphasize the role that educational information can play in shaping public opinion on this topic.

Contrary to expectations, this investigation did not uncover evidence of confirmation bias. This study anticipated that participants would be more likely to modify their opinions when presented with information aligning with their preexisting beliefs, and less likely to update their opinions when presented with content contradicting their initial position. The results, however, revealed the two treatment conditions produced similar effects on both the low and high punitive orientation groups. Given these findings, it appears the content in the videos was responsible for the changes in support for SC, which was irrespective of one's prior views about punishment.

Despite the advancements this study makes, it is not without limitations. One concern about the research design is the relatively short duration of time that passed between the pre- and post-intervention measurements of support for SC (i.e., only minutes). It is possible, therefore, that participants recognized that the survey was designed to measure change in attitudes toward SC and may have been more inclined to respond in the way they perceived would be desirable by the research team (see e.g., McCambridge et al., 2014). We attempted to mitigate this potential by assigning a filler task between the treatment video and posttest but recognize that this task may have had an influence on the results. A better way to overcome this limitation in future investigations would be to assess participant attitudes hours or even days after exposure to the treatment condition.

Another shortcoming of the study is that it included only two research conditions. Different types of educational content may not impact views about SC in the same way. Future scholarship should explore how varying the content of the educational message may impact one's beliefs about SC. In addition, this study did not assess how knowledgeable participants were about SC prior to viewing the educational videos. It is possible that one's previous level of understanding about the use and effect of SC may have had an influence on how the educational information was interpreted. Our sample was comprised primarily of white respondents with college degrees, which may have impacted findings. There are also several other potential factors that might have moderated the influence of the type of information received on one's change in attitude, including demographic information (e.g., age, gender), political ideology, religious beliefs, financial situation, region of residence, and experience with the criminal justice system. Given the sample size and composition, we were unable to test for these possibilities. Future research should seek to unpack what role, if any, these types of variables may play in influencing one's belief updating. Finally, this study took an inductive approach toward addressing its research questions. We

encourage researchers to explore how different theoretical perspectives, such as social constructionism (Berger & Luckman, 1966), may be used to frame and interpret scholarship on this topic.

Despite these limitations, this study contributes to the limited body of knowledge on public support for SC. The results suggest that educational information can be used to facilitate belief updating about SC. This study also finds no evidence of an interaction effect between prior views about punishment and the impact of the message on changes in attitude toward SC. If replicated, these findings may have significant research and policy implications. If lawmaker's base policy decisions on their constituents' desires – even if only in part – then it is incumbent upon scholars to ensure that public attitude about SC is appropriately measured and documented. It is likely that the general public may be under-informed about the use and effect of SC. This study suggests one way to better gauge beliefs about SC is to provide people with educational information on the practice prior to assessing their attitude regarding its use in prison. We believe that it is the responsibility of academics to keep the public properly informed on what is known about the uses and effects of SC, as well as to correct misinformation that is dispersed on the topic. Ultimately, a more informed public may lead to the enactment of better laws and policies surrounding the use of SC.

Notes

1. MTurk is an online crowdsourcing space that allows for the recruitment of workers to complete various tasks, such as online surveys and document transcription (Mullinix et al., 2015). Research indicates that participants recruited using crowdsourcing sites are more representative of the U.S. population than university samples (Berinsky et al., 2012), and further that MTurk participants pay more attention to survey instructions than college student participants (Hauser & Schwarz, 2015).
2. There were an additional 63 people who responded to the MTurk task, but failed the attention check questions. These individuals were not surveyed or included in this study.
3. Participants were asked to rate the conditions in three prison photos as "too harsh," "too comfortable," or "about right." This information was not used in this study.
4. Prior to the current study, a separate sample of 41 participants were recruited from MTurk to assess if the two treatment conditions conveyed the intended message. After watching either the SC is necessary ($n = 20$) or SC is harmful video ($n = 21$), participants were asked a series of questions to identify its primary message. The results of this pilot test indicated that participants appropriately understood the content in both videos. Those in former group correctly identified 93.6% of the responses that aligned with the position that SC is necessary for institutional order, while those in the latter group correctly identified 98.8% of the responses that aligned with the position that SC is harmful to its inhabitants. Given these findings, we elected to use the same two videos in the current study without modification. The SC is necessary video can be viewed at https://youtu.be/HupNOJejBLg and the SC is harmful video can be viewed at https://youtu.be/MrO94XwBhwk.
5. This study applies Cohen's (1988) guidelines for interpreting the magnitude of the effect sizes, where Cohen's d =.2 represents a small difference, Cohen's d =.5 represents a medium difference, and Cohen's d =.8 represents a large difference.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Ryan M. Labrecque http://orcid.org/0000-0002-8468-1733

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Appendix.A
Solitary confinement is necessary video transcript

In 2016, there was an estimated 1.2 million violent crimes in the United States. According to the FBI this is the second consecutive year that there has been an increase in these types of crimes. Over 64% of these violent crimes were physical assaults. When we are able to arrest and prosecute these violent offenders, we most often sentence them to prisons. What happens when many violent offenders are forced to share a space? Often times this means that prisons can be very violent places, which places everyone who has to work and live within them at risk for serious harm.

Some inmates pose serious threats to safety and order in prisons. Prison administrators have a duty to keep the staff and other inmates safe. Solitary confinement is the only tool available to remove these threats of harm. Solitary confinement is used to house the "worst of the worst". These are not people who disobey minor institutional rules. They are violent and pose a serious threat to the safety and security of the institution. Nearly 70% of inmates who spent 30 or more days in solitary confinement were placed there because they assaulted other inmates or staff. Their continued presence among the general population places everyone at risk.

Without the ability to use solitary confinement, there would be little order in prisons and inmates and staff would be placed at risk for harm daily. In facilities that limit the use of confinement, the inmates and staff are at 30% greater risk for assault. Even with current policies allowing the use of confinement, more than 4,500 members of corrections staff are injured each year during encounters with inmates, and approximately 11 members of corrections staff are killed at work each year. Assaults, violent acts, and transportation-related fatalities account for 80% of these deaths.

Without the ability to confine violent inmates, other inmates may have to resort to higher levels of violence to protect themselves from harm, thus creating more violence. Imagine what it would be like to live in constant fear of being harmed and not being able to escape it. It is likely that the fear of harm in itself may create more harmful effects. When people are fearful, they are unable to act rationally,

they may misinterpret verbal and visual cues and overreact to situations, maybe even violently. Constantly living in fear may induce other mental conditions such as depression and PTSD. Think about what this might do to people with preexisting mental health conditions.

Despite recent reports from the media and human rights groups, solitary confinement is not the source of mental health harms among inmates. Prior mental health issues affect roughly 40% of the inmates in prison. What this suggests is that some inmates with preexisting mental health issues sometimes act out, and in some instances, those outbursts are violent. If these inmates are placed in segregation, it often is not for more than 30 days. The reports of people spending years in solitary confinement is not a common occurrence. Only 10% of the entire prison population spent more than 30 days in segregation.

Solitary confinement is not just for punishment; it can be used as a powerful to deterrent to curb unwanted behavior and encourage rehabilitation. Upon breaking a rule, inmates are stripped of many of the privileges afforded to them in the general population. They learn what life is like without these privileges and have to earn them back. This is reinforcement that actions have consequences. Without having confinement as a tool, the inmates do not see there are consequences to their actions, and they would likely continue to act out and disobey orders. Using confinement also benefits the inmates who abide by the rules of conduct. Constant violent outbursts threaten the ability for the other inmates to rehabilitate. Removing threats from the housing areas allows for others to continue free from distraction.

Corrections officials have a duty to protect the inmates and staff from threats of harm. Containing violence and serious threats of harm should take the highest priority within our prisons. If officials ignore the risks, terrible things may happen, such as what happened to a corrections officer in Texas. An inmate, who had been housed in segregation, slipped one hand out of his shackles and beat the officer with a pipe. Prisoners can be very dangerous, and we have to use the only tool we have to contain these threats of violence.

Appendix.B
Solitary confinement is harmful video transcript

On any given day in the United States, more than 60,000 people are held in some type of solitary confinement. Prisoners in solitary often spend 23 hours of every day in a spartan concrete box the size of a parking space with fluorescent lighting that never turns off. In general, their cells have only enough space for a bed, a sink and a toilet. They usually do not have windows, so their access to natural light is limited. Inmates are served meals in their cells through a slot in the door, and interactions with other people are generally limited. Sometimes they will add a second occupant, forcing two people to live together in a tight space. This may cause more problems because the people may not get along, and the amount of free space to walk around in is further limited.

Decisions to place inmates in solitary confinement are not made by judges or juries, but rather by prison staff. These decisions are often made without any considerations to the person's mental health. The decision to confine may not be based on serious rule violations or acts of violence, and in some cases, may be applied discriminatorily. Minorities, younger inmates, persons with mental illnesses, and those who are gay, lesbian, or bisexual are more likely to be confined than those who are not.

Some are placed in confinement for simply being gang members or speaking to a known gang member. The trouble with using confinement in these instances is that it is difficult to verify gang membership. Not all people suspected of being part of a gang actually are. Even if they were part of a gang, once they are placed in confinement there is little they can do to get out. If they cut ties with their gang to leave confinement, they may be targeted and physically injured or killed.

Solitary confinement can affect the health and well-being of the inmates. Those who spend time in solitary confinement are at increased risk for health issues such as nervousness, anxiety, violent thoughts, and insomnia. Isolated prisoners experience twice the number of stress-related symptoms, and these symptoms are twice as intense, compared with the general population of maximum-security prisoners. Some also experience forms of cognitive deterioration, such as not being able to remember well, learn new things or concentrate, and they can even begin to lose their grip on reality. One man who spent more than 15 years in solitary said, I've had these cell walls make me see

delusions. I've tried to kill myself a few times. I've smeared my own blood on my cell walls and ceiling. I would cut myself just to see my own blood." Another said that the worst experience of his life is when he wakes up. Another said that he lived the same day over and over. Those who spend time in solitary confinement are at an increased risk of suicide in comparison to the general population.

Not only does solitary confinement contribute to mental health issues among inmates, it does not work to reduce violence or future crimes. Being housed in solitary confinement reduces the opportunities for rehabilitation which means once they are released, they will not have the tools to prevent them from committing future crimes. Some studies indicate that solitary confinement may actually increase rates of reoffending, particularly acts of violence. This effect is more pronounced when people are released from confinement directly into the community than it is when they spend at least six months in the general prison population. One warden from a prison in Maine described releasing inmates into society directly from confinement as releasing a wild dog into a community.

Keeping inmates in solitary confinement can cost two to three times more than what it costs to put them in the general population. Some estimates suggest that it can cost nearly $80,000 per year. It does not make sense to spend more money to restrict their access to rehabilitative programs and services with no added benefits to the inmates or society.

Solitary confinement is harmful to inmates. The United Nations Convention Against Torture cites that long-term confinement can amount to cruel and unusual punishment. The effects on the well-being of the inmates, combined with its lack of deterrent effects on unwanted behavior, suggest that we need to find a solution that actually works.

Appendix.C
Support for solitary confinement survey

Listed below are a number of statements that describe attitudes that different people have about how inmates should be managed in prisons. There are no right or wrong answers, only opinions. Please indicate your level of agreement with each of the following statements using a sliding scale from 0 (lowest) to 100 (highest).

1. The best way to prevent violence in prison is to teach inmates a skill that they can use to get a job when they are released. ®
2. Prison officials should isolate violent criminals because, if given the chance, they will hurt other inmates and staff.
3. The best way to rehabilitate offenders is to help them change their values and deal with the emotional problems that cause them to break the rules. ®
4. Placing disruptive inmates in solitary confinement is the only way to stop them from engaging in more acts of violence and general disobedience.
5. The best way to prevent violence in prison is to provide inmates with something productive to do, such as educational and recreational programs. ®
6. Since most criminals continue to commit crimes over and over again, the only way to protect society, prison staff, and other inmates is to lock these inmates away from everyone else and throw away the key.
7. Placing inmates in solitary confinement makes them angrier and more violent. ®
8. Inmates deserve to be punished because they have harmed society.
9. People in prisons have made mistakes, but they deserve the opportunity to rehabilitate themselves and become productive members of society. ®
10. The best way to prevent violence and rule violations in prisons is to limit interactions between the inmates.
11. People convicted of crimes deserve whatever punishments they receive in prison; if they believe it is too harsh, they should not have committed crimes.
12. Inmates should have basic human rights and deserve to be treated humanely. ®
13. There should not be restrictions on the amount of punishment a person can receive in prison.
14. Prison life is far too comfortable; keeping prisoners confined to their cells is the best way to ensure they are being properly punished for their crimes.

(*Continued*)

(Continued).

15. There would be fewer acts of violence in prison if the inmates were treated better by staff. ®
16. People in prison are dangerous; therefore, administrators should take every precaution to make sure they are not able to hurt anyone.
17. The only way that inmates will learn that their actions are wrong is to punish them for every rule violation.
18. Keeping prisoners confined to their cells will not help them once they leave prison. ®
19. For the safety of prison staff, inmates should be kept in their cells as much as possible.
20. Attempting to rehabilitate criminals is a waste of money; once a criminal, always a criminal.

® = Reverse-coded.