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Article

Innate Health: A Novel Examination of What Explains Well-being, Prosocial Behavior, and Aggression among Men Living in a UK Prison

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Abstract: Knowledge about one's innate health is central to a variety of positive mental health markers. However, men living in prison rarely receive education about how to access these internal resources. As such, this study seeks to replicate and extend emerging data on an *innate health* intervention. Volunteers from HMP Nottingham, England (n=126) participated in normal prison programming and the intervention group (n=65) received an additional 3-day intensive. The primary question: Does innate health function as a mediator in the same way self-control does within an incarcerated population? We conducted a mediation analysis, tested social desirability bias, and examined the impact of the intervention on crucial variables. This study found higher levels of innate health, self-control, wellbeing, and prosocial behavior and lower levels of aggression in the intervention group as compared to the control group. Importantly, innate health did play a mediating role equivalent to and/or partnering with self-control.

Keywords: well-being; innate health; positive psychology; mental health; self-control; pro-social behaviors; criminology; incarcerated men; prisoners; inmates

Introduction

Integral to the introduction of positive psychology was Seligman's insight into raising his daughter Nikki—it 'is about taking this marvelous strength she has' (Seligman & Csikszentmihalyi, 2000, p. 6). This philosophical stance that something is already *in existence*, that *she has* and therefore *everyone has*—some internal, integral, or natural essence that can help each of us—underlies any intervention designed to realize human potential. Smith et al.'s (2019) review found that knowledge about one's internal development capacity improved well-being even in the face of illness and has a significant impact on the framing and reasoning one makes about life events (i.e., meaning making; Baumeister, 1991). Changes in appraisal and meaning making are well-recognized processes for improving well-being outcomes such as emotional regulation and coping activities (Lazarus & Folkman, 1984). Unfortunately, marginalized groups (such as prisoners) receive few mental health programs that offer a health-promoting focus (Woodall & Freeman, 2021), for example positive psychology, inner strength development, and/or well-being interventions. Additionally, this *realization capacity* or *innate health* stance is rarely delivered directly, articulated clearly, operationalized, and/or empirically evidenced. As such, this study seeks to replicate and extend emerging data on the Insight to Well-being program, an *innate health* intervention showing promise within a prison rehabilitation setting, (Kelley et al., 2018; Kelley et al., 2019; Kelley et al., 2021).

Compared to the general population, imprisoned populations demonstrate higher levels of self-harm/suicide (Zhong et al., 2021), severe mental illness (Fazel et al., 2016), and substance abuse (Baranyi et al., 2019). Previous investigations have demonstrated that

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significant improvements in mental health while incarcerated, result in lower recidivism rates after release (Wallace et al., 2020). The number of prison residents who re-offend after release in the UK is almost 40% within 12 months and 75% within 9 years (Ministry of Justice [MoJ], 2019b). The total economic and social cost of reoffending by adults within one year was estimated at 16.7 billion in 2016 (Ministry of Justice [MoJ], 2019a). While the evidence demonstrates that: (a) patients with severe mental health disorders can experience higher outcomes in measures of well-being (Valiente et al., 2021); (b) well-being for mental health in prison is an important component of prison rehabilitation efforts (Woodall & Freeman, 2020); and (c) support for well-being initiatives in UK prisons has grown (Tweed et al., 2021)—investments into well-being interventions have lagged considerably (Turner et al., 2021).

Traditional criminological research explores crime, drugs, and anti-social behaviors from a risks-needs-assessment approach. Mental health interventions modelled on this approach, identify and target individual deficits, impose sentencing plans, and focus interventions on specific pathology (Andrews et al., 1990). Unfortunately, focusing solely on control, deterrence, and punitive-based interventions does not work (Barnett & Howard, 2018). However, a combination of methods that build skill acquisition, develops self-control, and perspective-taking have reliably demonstrated promising outcomes (McGuire, 2020). Complimentary interventions focused on fostering positive mental health within prison environments have already demonstrated a significant impact on well-being (e.g., yoga: Kerekes et al., 2019; forgiveness therapy: Praptomojati & Subandi, 2020; compassion development: Ptacek & Daubman, 2020). Similarly, Kelley et al., (2018) demonstrated that an innate health program can significantly decrease levels of depression, anxiety, and anger and increase levels of well-being and purpose in life for the intervention group as compared to the waitlist control group. However, Kelley et al.'s (2018, p. 2852) claim that accessing innate health leads inmates to 'mentally healthier lives' has not been adequately tested.

Suarez and Mills (1982) first articulated the notion of innate feelings of well-being, innate wisdom, or an unlimited capacity for experiencing love in the innate health and psychological literature. Later, Sedgeman, (2005) coined the term *innate health* as *a capacity for health realization*: where a positive state of mind can be accessed and sustained regardless of circumstances within the scientific literature. Larimer (2008, p. 4) further defined innate health as 'an inherent human capacity to access the wisdom and creativity required for optimal learning and development, regardless of conditions or circumstances. Beyond the developing definition, the shared theoretical foundation, that humans have an *innate* potential for *realization of one's capacity,* can be found across psychological literature. For example, the concepts of self-realization (Ryff, 1989), of inner strength (Rose, 1990), and a natural inherent growth tendency (Ryan & Deci, 2000)—all share this idea of a 'basic part of our essence' (Maslow & Hoffman, 1996, p. 83). This study aims to examine this overlooked construct. How does realization, understanding, or changes in meaning-making about one's innate health impact important psycho-social variables among a high-risk population?

Initial research into innate health interventions has demonstrated a decrease in psychological distress and an increase in well-being in organizations (Borg, 1997; Roy, 2007) and communities (Mills, 2005a, 2005b); decreased levels of stress, depression, and anxiety as well as enhanced wellbeing among female Somali refugees (Robertson et al., 2019) and first-year nursing students (Sedgeman, 2008); and, the first randomized control trial of an innate health intervention demonstrated significant improvements in communication, decision-making, problem-solving, emotional regulation and resilience in children (Green et al., 2021a; Green et al., 2021b).

Among men living in English prison, innate health was first defined as a source of 'resilience always available to people no matter what circumstances, stressors, or traumatic events they encounter over time' (Kelley et al., 2018, p. 2832). Later, Kelley et al., (2021, p. 5) added detail to the innate health description as 'the realization that people

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already have within them all the mental health/common sense/self-control they need'. A small but growing body of desistance literature recognizes that exploration of narratives (Maruna & Liem, 2021), high-meaning (Vanhooren et al., 2018), the reconceptualization of identity (Hallett & McCoy, 2015), and within person changes related to self-efficacy (Johnston et al., 2019) are all factors that may help prison residents desist from crime (Maruna, 2001). For example, Maier and Ricciardelli (2021, p. 4) found that male inmates identified self-reinvention, including a new sense of identification, as the key component to positive changes even while living in the hostile and impoverished prison environment. These inmates believed that these changes emanated 'from within prisoners' selves—their will, desires, introspection, and insight' —a description that points to beliefs in something innate.

While initial investigations into innate health programming delivered in English prisons are promising, no one has tested if innate health causes beneficial outcomes. To test whether innate health is causing these changes, a mediation analysis must be performed. This statistical test demonstrates whether the effects of the intervention are likely to be caused by innate health. Since innate health has not been tested this way before, it is also important to compare this new construct to a known, reliable, and tested measure, one that has already been proven to have significant impacts on well-being and behavioral outcomes. Perhaps the single most widely acknowledged concept within the criminological literature as 'one of the strongest correlates to crime' is self-control (Burt, 2020, p. 2).

Self-control is widely considered the key mediating factor for outcomes related to one's ability to override, change, or interrupt undesired emotional and behavioral responses (Tangney et al., 2004). Investigations into self-control have demonstrated a robust association between low self-control and deviance (Vazsonyi et al., 2017) and maladaptive behaviors (i.e., substance misuse, recidivism, and failure to positively adapt) and high self-control and adaptive behaviors such as pro-social behaviors (Malouf et al., 2014). While self-control theory widely applied in criminology (Gottfredson & Hirschi, 1990) demonstrates cross-cultural applicability (Vazsonyi et al., 2021), and low self-control has serious social consequences (Burt, 2020), it is not itself a permanent trait but a 'set of skills, capacities, and behaviors that we need to 'operate' in a self-regulation feedback loop' (Gillebaart, 2018, p. 4). Program interventions that improve self-control are considered an integral aspect of reducing crime, delinquency, and promoting overall health outcomes (Piquero & Rocque, 2020). While Kelley et al., (2021) found a significant decrease in low self-control for men incarcerated for sexual violence offenses, mediation analysis was not conducted. Additionally, few studies examining high-risk populations, like men living in prison, control for social desirability (Malouf et al., 2014). This is especially important because social desirability bias can threaten the validity of self-report assessments.

Study aim

The primary aim of this study was to replicate research on the effects of an innate health intervention on incarcerated participants wellbeing and extend research in three ways. The first extension concerns additional dependent variables: Does the intervention, next to wellbeing, also affect moral self-esteem, aggression, drug abuse, and anti- and pro-social behavior. The second extension is the test of the mechanism that is assumed to cause the beneficial outcomes of the intervention, a mediation analyses: Are changes in innate health responsible for changes in outcome measures? The third extension is the test of alternative explanations for the effects that are expected to occur: Are changes in self-control, rather than those in innate health, responsible for changes in outcome measures? Additionally, we controlled for social desirability bias. This bias appears to be particularly disturbing for results regarding individuals living in prison (Cobo et al., 2021).

Methods

Procedure

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A quasi-experimental study, with a wait-list control group and measurements both before and after the intervention, was performed between April 1st, 2019, through October 19th, 2019. This study and its procedures were approved by Her Majesties Prison and Probation Services and by the governor of Nottingham prison. Ethical approval was granted by the Human Research Review Committee (HRRC) of the California Institute of Integral Studies (CIIS).

Participants in this study were men living in the Incentivized Substance Free Living (ISFL; Delta Wing) of HMP Nottingham (a prison housing local, long-term, and high-risk men in England). At any given time, the Delta Wing housed 125 men. After enrollment into the Insight to Well-being program, residents were verbally informed by one of the researchers about the study and received a three-page Participation Information Sheet. Participants were ensured that participation in the study was voluntary, that the data would be processed anonymously and that enrolling in the study was rewarded with £3 phone credit. Before partaking, the participants signed an Informed Consent Form. After signing the form, participants filled out the first questionnaire.

The treatment program consisted of five sessions delivered over a three-day period. Key modules included philosophical conversations about the constant nature of life, the inside-out experience of reality, listening with awareness, separate realities, and limitless and innate potential. Content considered essential to the course included the human experience of thought and insight, the connection between feelings, moods, and behavior, exploration of mental clarity versus a busy mind, stepping into the unknown, and implications for life in and outside of prison. Perhaps most central to this investigation was the Insight to Well-being program context, where behavioral problems were not the focus. Instead, facilitators taught, modelled, and supported individual and group discussion around the central assumption that innate health exists, that it is universal, accessible and—when understood—transformative.

After having finished the program, both treatment and wait-list participants filled out a second questionnaire. The questionnaires were presented to the participants by one of the researchers. The questionnaires, both before and after, were digitalized, constructed in Qualtrics, and presented to the participants with the aid of an e-reader.

Participants

A total of 127 men participated in the study. Of the participants, 66 enrolled in the treatment and agreed to participate in the research. The other half, 61 participants, were invited from the Delta wing and functioned as controls. A total of 24% dropped out, before filling out the second questionnaire. Reasons for dropping out were transferred to another prison, released, stopped participation, or other activities (e.i., education or work). In the treatment and waiting-list groups, 42 and 52 filled out a questionnaire after the treatment took place.

The average age of participants was 32 years and varied from 18 to 56. Of the participants 10% had reached primary school level or below, 53% secondary school, 29% college or sixth form and 8% university or higher. The participants on average had been incarcerated eight times before. The time spent in prison during this sentence varied from zero days to 21 years, with an average of 19 months in prison of which 1 to 9 months were spent on the Delta wing.

Instruments

The questionnaires consisted of 87 items (ground variables and items measuring nine concepts). The questions were presented to the participants in a random order (both between concepts and within concepts between items). With regards to seven of the concepts, the items could be scored on visual analogue scales, rather than on traditional categorical scoring scales. Reason for the use of these scales is that such scales tend to be more

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appealing and feel more intuitive to participants, the use of these scales saves space on the screen, and the scales are more sensitive to small changes (Toepoel & Funke, 2018).

Dependent variables

In order to measure well-being the seven items of the short version of the Warwick-Edinburgh Mental Well-Being Scale were presented to the participants (e.g. 'I've been thinking clearly'). This well-being scale has found to have good psychometric qualities (Haver et al., 2015). Participants answered the questions on visual analogue scales ranging from 'never', via 'rarely', 'some of the time' and 'often' to 'all the time'. In this study, these seven items, both before and after the treatment, formed a reliable scale (Cronbach's α_{total} = .87; α_{before} = .83; α_{after} = .93).

Three concepts in this study were taken from the Dutch 'Connectedness Project' (De Jong & Denkers, 2020; Denkers & De Jong, 2020): moral self-esteem, anti-social behavior and pro-social behavior. This project developed tools for the measurement of psycho-social concepts and behavior among high-risk youths. These tools contain few words and are supported by graphics (constructed by a street artist), to enable unassisted participation of individuals with moderate learning disabilities and cognitive impediments. The participants in the current study filled out the two-item moral self-esteem scale ('Have you been a good / bad person (last three months)?'), the three item anti-social behavior scale (e.g. 'Did you damage things or people (past 3 months)?'), and the three item pro-social behavior scale (e.g. Did you help others (last 3 months)?'). All items were scored on visual analogue scales ranging from 'did not damage' to 'damaged a lot'. The correlations between the moral self-esteem items were .49 (both before and after this was .48). Reliabilities (Cronbach's α) of the two scales concerning pro-social and anti-social behavior were respectively .59 (before .46 and after .67) and .62 (before .58 and after .67). Reason for these relatively low reliabilities is that the three items for anti-social behavior reflect the three distinct factors (aggression, steeling, and drugs), underlying the traditional tools for measuring delinquent behavior (Sanches et al., 2016; Weerman, 2011). The pro-social items refer to the opposite of the anti-social behaviors scale (repairing, giving and healthy behavior).

To test the use of drugs, after asking 'How often during the last 3 months did you use the following substances?', eight different types of drugs were presented to the participant (e.g. cannabis and cocaine; Berman et al., 2005; Berman et al., 2007). Participants answered on visual analogue scales with as anchor-points 'never', 'once a month', '2 to 4 times a week' and 'more often'. The eight drug use items form a reasonably reliable scale, with Cronbach's α_{total} = .71 (α_{before} = .67; α_{after} = .67).

To measure participants' level of aggression, a short-version of the Buss and Perry (1992) Aggression Questionnaire Aggression scale was used (Bryant & Smith, 2001; Diamond & Magaletta, 2006). The scale consisted of eight items (e.g. 'Given enough provocation, I may hit another person' and 'I wonder why sometimes I feel so bitter about things'). These items were scored on a five-point rating scale, ranging from 'very unlike me' to 'very like me'. In this study these items prove to form a reliable scale, Cronbach's α_{total} = .91 (α_{before} = .89; α_{after} = .94).

Mediating variables

Innate health was measured with the aid of seven items (e.g. 'I concentrate on things that make me feel bad' (reversed), 'I take negative thoughts seriously' (reversed) and 'I know I'm part of something good'(Denkers & -Gray, 2021). This scale was specifically designed to measure the degree to which individuals relate to and accept assumptions about the central concepts of innate health: thought, consciousness and mind. The items in this study were scored on visual analogue scales, with 'never' and 'always' as scale ends. The scale was reliable, with Cronbach's α_{total} = .81 (α_{before} = .82; α_{after} = .82).

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The Brief Self-Control Scale (Tangney et al., 2004) consists of 13 questions, about the degree to which participants are willing to control thoughts, emotions, and impulses to conform to the normal demands of life (e.g. 'I am good at resisting temptation'). This scale has been frequently used and tested in psychological and criminological research (de Ridder et al., 2012). Participants answered the questions on visual analogue scales ranging from 'not at all' to 'very much'. The thirteen items formed a reliable scale (Cronbach's α_{total} = .86; α_{before} = .85; α_{after} = .88).

To be able to control for social desirability bias (Crowne & Marlowe, 1960), an eight item social desirability scale was presented to the participants (e.g. 'I'm always willing to admit it when I make a mistake'; Gorsira et al., 2018), scored on visual analogue scales ranging from (invisible for participants) 0.00 to 100.00, with scale ends 'never' to 'always'. The scale was reliable, Cronbach's α_{total} = .82 (α_{before} = .77; α_{after} = .86).

Analytic strategy

First, we explored the relationships between the variables. Then, we conducted a Generalized Estimating Equations (GEE) analysis to test the effect of condition (treatment versus wait-list) by time (before versus after) on the outcome measures and to establish possible mediation effects.

The GEE method of analyses was used because it is particularly suited to analyse longitudinal response data (Hanley et al., 2003). GEE estimates parameters while controlling for the within-subject correlated error present in longitudinal data (Liang & Zeger, 1986; Morrow-Howell et al., 2003). Before entering into the equations, all measurements were first standardized into z-scores. The product of condition and time was computed as the interaction term for condition by time.

First GEE analyses were applied to the mediating variables, innate health and self-control, to assess if these were influenced by the treatment. To do so a model was run with condition (control versus treatment), time (first versus second wave) and condition by time as independent variables. A positive and significant condition by time interaction term would suggest (relative) improvement of the outcome measures among participants over time in the treatment group compared to in the waiting-list group. Here, in line with Baron and Kenny (1986), we assume that mediation can only occur if the mediator is affected by the treatment (in this case indicated by a condition by time interaction). To control for its influence, next social desirability was added into the equation.

Next GEE analyses were applied to the dependent variables, wellbeing, moral self-esteem, pro-social and anti-social behavior, drug-use and aggression. As described above, a condition (control versus treatment), time (first versus second wave) and the condition by time model was run. In the case of a significant condition by time interaction term, innate health and self-control were separately added to the equation to test for possible mediating effects of these variables. If, after entering one of the mediators into the equation, an effect is to be found to diminish - Wald χ^2 for the effect of condition by time reduces at least by 3.84 ($p < .05$) or 6.64 ($p < .01$) - this suggests a mediation effect; the mediating variable might in such a case be held 'responsible' for the effects that were originally found. Finally, social desirability was added to the equation to check if the results might have been caused by this bias.

Results

The correlations, depicted in Table 1, suggest that all variables are at least moderately correlated with the all the other variables. The only exception is the correlation between social desirability bias and prosocial behavior, which is weakly correlated.

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Table 1 Correlations.

	Wellb.	AntiS.	ProS.	Moral SE	Drugs	Aggres.	Self-C.	In.Health
Wellbeing								
Antisocial	-.24***							
Prosocial	.50***	-.22***						
Moral SE	.27***	-.46***	.38***					
Drugs	-.34***	.50***	-.21**	-.43***				
Aggression	-.35***	.50***	-.24***	-.47***	.34***			
Self-Control	.41***	-.47***	.29***	.50***	-.46***	-.63***		
Innate health	.60***	-.34***	38***	.38***	-.30***	-.56***	.61***	
SDB	.27***	-.38***	15*	.36***	-.32***	-.70***	.61***	.51***

* p < .05, ** p < .01 and *** p< .001

This suggests that the measure for prosocial behavior is less likely to be influenced by this bias than the other variables are. The pattern of correlations is very much in line with what may expect. For instance, wellbeing is positively related to prosocial behavior, moral self-esteem, self-control, innate health and social desirability bias, while it is negatively related to anti-social behavior, drugs and aggression. The correlations of the dependent variables - wellbeing, antisocial and prosocial behavior, moral self-esteem, drugs and aggression - with the presumed mediators - self-control and innate health - are generally strong.

Table 2 shows the effects of condition, time and condition by time on innate health and on social control. Both variables appear to be affected by the interaction between condition and time, while neither are directly affected by time or condition.

Table 2 Innate health and self-control explained by condition, time and condition by time.

	Innate health			Self-control		
	B	Wald χ^2	p	B	Wald χ^2	p
Condition	-.08	.19	.67	-.20	1.26	.26
Time	.04	.24	.63	-.08	1.28	.26
Condition X Time	.28	7.33	.01	.40	8.43	.00

Next entering self-control into the equation appears to completely mediate the condition by time interaction influence on innate health (B = .11; Wald χ^2 = .94; p > .1). Likewise, entering innate health into the analysis, significantly diminishes the influence of condition by time on self-control (B = .26; Wald χ^2 = 3.90; p = .05), although, innate health partially mediates the influence of condition by time on self-control. Controlling for social desirability did not alter the pattern of results, suggesting that it is not likely to be responsible for the influence of the treatment on either innate health or self-control.

Figure 1 shows the mean z-scores of innate health by condition and by time. The figure suggests equal scores in the control condition at Time 1 and Time 2, while participants in the treatment condition show a large change in innate health scores over time. In the treatment condition participants report higher innate health after the intervention.

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Figure 1. Innate health before and after in treatment and control condition (z-scores)

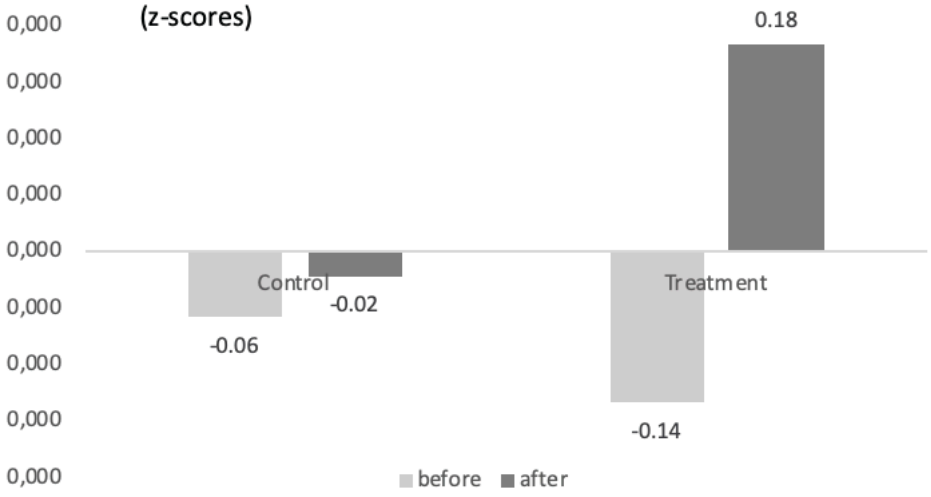
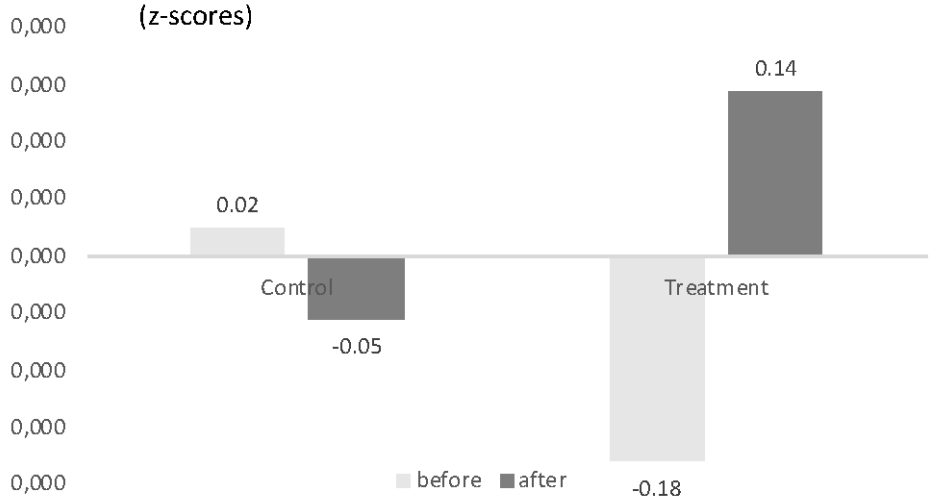


Figure 2. depicts the mean z-scores of self-control by condition and time. The pattern of results in this figure appear to be very similar to the pattern that was found with regards to innate health: no development over time in the control condition and great improvement among the participants in the treatment condition. This suggests that both innate health and self-control improve as result of the intervention.

Figure 2. Self-control before and after in treatment and control condition (z-scores)



The results in Table 3 suggest that moral self-esteem is not influenced by condition, time or by the interaction between these variables. Wellbeing, however, appears to be strongly influenced by the interaction between condition and time.

Table 3 Wellbeing and moral self-esteem explained by condition, time and condition by time.

	Wellbeing			Moral self-esteem		
	B	Wald χ^2	P	B	Wald χ^2	P
Condition	-.28	2.78	.10	.10	.32	.57
Time	-.12	1.13	.29	.00	.00	.98
Condition X Time	.73	15.36	.00	.04	.06	.80

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Next innate health and self-control were separately entered into the equation explaining wellbeing. Up and above the influence of condition, time and their interaction, both innate health and self-control contribute to explaining well-being (respectively: B = .58, Wald χ^2 = 105.80, p < .001; B = .35, Wald χ^2 = 24.64, p < .001) and moral self-esteem (respectively: B = .34, Wald χ^2 = 22.12, p < .001; B = .45, Wald χ^2 = 58.59, p < .001).

Entering innate health or self-control into the equation also diminishes the strength of the interaction term between condition and time on wellbeing (with innate health as mediator: B = .18; Waldχ^2 = 11.46; p < .01; and with self-control as mediator: B = .19; Wald χ^2 = 9.82; p < .01). This suggests that both innate health and self-control mediate the influence of the intervention on well-being. Adding social desirability into the equation, did not alter the pattern of results.

Figure 3 shows the means (of the z-sores) of wellbeing under influence of condition and time. This figure suggests no change in the waiting-list condition, while wellbeing in the treatment condition appears to seriously improve after the treatment. This suggests that the intervention improves participants wellbeing.

Figure 3. Wellbeing before and after in treatment and control condition (z-scores)

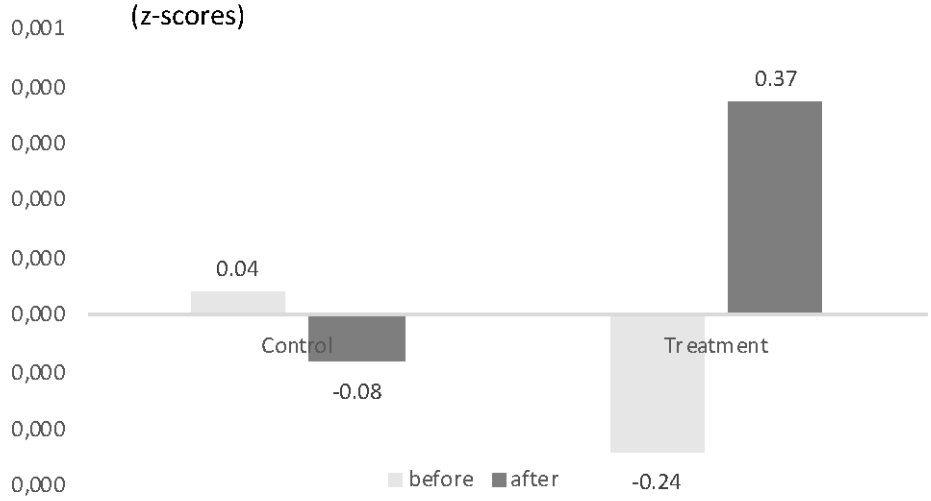

Table 4 shows the effects of condition, time and condition by time on antisocial and prosocial behavior. The results suggest no influence on antisocial behavior, however, prosocial behavior appears to be strongly influenced by condition by time.

Table 4 Behavior, antisocial and prosocial, explained by condition, time and condition by time.

	Antisocial			Prosocial		
	B	Wald χ^2	P	B	Wald χ^2	P
Condition	-.07	.16	.69	-.10	.34	.56
Time	-.07	.45	.50	-.19	3.47	.06
Condition X Time	.09	.27	.60	.60	13.00	.00

Both innate health and self-control were next entered into the equations. Innate health and self-control, above the variables entered in the first step of the analyses, did contribute to explaining both antisocial behavior (respectively: B = -.36, Wald χ^2 = 25.78, p < .001; B = -.41, Wald χ^2 = 37.89, p < .001) and the prosocial behavior (respectively: B = .36, Wald χ^2 = 27.08, p < .001; B = .21, Wald χ^2 = 7.38, p < .01).

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Entering innate health or self-control into the equation does appear to diminish the influence of condition by time on prosocial behavior (after entering innate health: B = .49; Wald $\chi^2 = 8.70$; $p < .01$; After entering self-control: B = .51; Wald $\chi^2 = 8.14$; $p < .01$), suggesting that both concepts might be partially responsible for the beneficial effects of the treatment on enhanced reports of prosocial behavior. Entering social desirability bias into the equation did not alter the pattern of results with regards to antisocial or prosocial behavior.

Figure 4. Pro-social behavior before and after in treatment and control condition (z-scores)

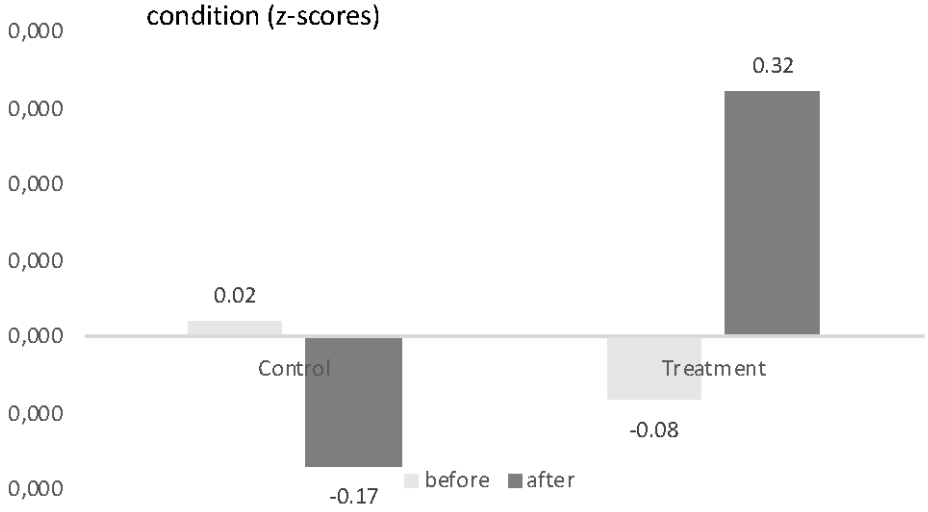

Figure 4 shows the means (of the z-sores) of prosocial behavior by time in the treatment and control condition. This figure suggests that prosocial behavior somewhat deteriorates in the control condition, while this behavior increases with time in the treatment condition.

Table 5 shows the results of the GEE analyses with regards to aggression and drugs. The table suggests that the treatment did not influence the use of drugs. This does not come as a surprise, because of wing in the prison where the study was conducted was an Incentivized Substance Free Living (ISFL) wing. Nonetheless, with time participants over both conditions did report to use less drugs. With regards to aggression, the results do show a marginally significant influence of condition by time.

Table 5 Aggression and drugs explained by condition, time and condition by time.

	Aggression			Drugs		
	B	Wald χ^2	P	B	Wald χ^2	P
Condition	.14	.60	.44	-.18	.93	.34
Time	-.05	.43	.51	-.11	3.78	.05
Condition X Time	-.27	3.38	.07	.04	.24	.63

Innate health and self-control were next separately entered into the equations. Innate health and self-control, above the variables entered in the first step of the analyses, did contribute to explaining both aggression (respectively: B = -.61, Wald $\chi^2 = 50.58$, $p < .001$; : B = -.63, Wald $\chi^2 = 75.55$, $p < .001$) and the use of drugs (respectively: B = -.13, Wald $\chi^2 = 7.72$, $p < .01$; B = -.14, Wald $\chi^2 = 9.92$, $p < .01$).

After entering innate health or self-control into the equation, the (marginally significant) influence of the interaction between condition and time on aggression disappears (respectively: B = -.16, Wald $\chi^2 = .20$, $p = .38$; and B = -.06, Wald $\chi^2 = .30$, $p = .73$. This also

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occurs when social desirability bias is entered into the equation (B = -.21, Wald $\chi^2 = 2.17$, p = .14). This suggests that innate health, self-esteem, and social desirability might all three be responsible for the decline of reported aggression of participants in the treatment condition.

Figure 5. Aggression before and after in treatment and control condition (z-scores)

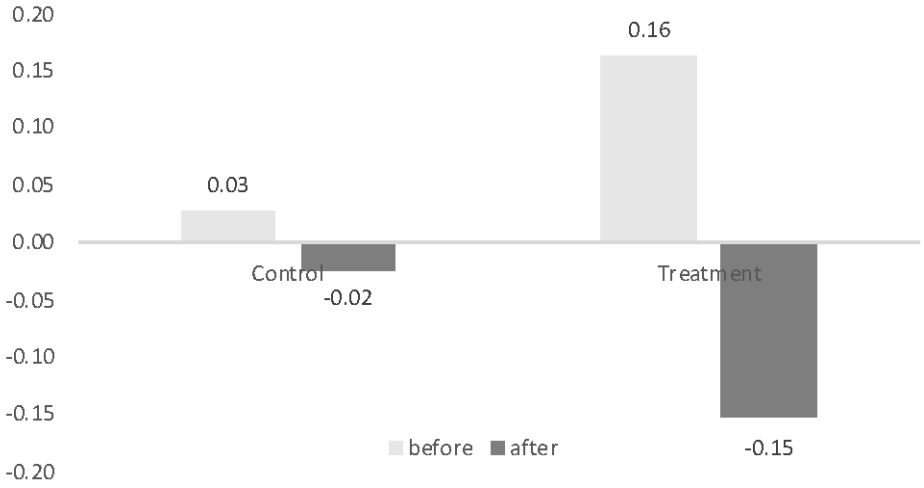

Figure 5 shows the means (of the z-sores) of aggression by time in the treatment and control condition. This figure suggests that aggression stays unaffected over time in the control condition, while aggression decreases with time in the treatment condition.

Discussion

The primary objective of this paper was to replicate and extend previous studies on the effects of innate health interventions among men living in prison. First, the results of the present study provide an almost perfect replication of previous studies: the innate health intervention appears to cause higher levels of wellbeing among the men living in prison. Second, the effects of the intervention do not seem to be limited to wellbeing: compared to controls, participants in the intervention condition report higher levels of innate health, self-control, prosocial behavior and lower levels of aggression. Although the innate health scale was found to strongly correlate with all the dependent variables, the intervention did not affect moral self-esteem, antisocial behavior, or drug use. Third, changes in innate health mediated the effects of the on self-control, well-being, prosocial behavior, and aggression, suggesting that innate health might be responsible for these changes. Fourth, changes in self-control mediated the effects of the intervention on innate health, wellbeing, prosocial behavior, and aggression, suggesting that, as is the case for innate health, self-control might be responsible for observed changes in the dependent variables.

Previous investigations into prison residents have found increases in levels of well-being and decreases in levels of aggression following a gratitude intervention (Deng et al., 2019) and positive associations between perception of relationships with staff and post-traumatic growth (Hearn et al., 2021), however investigations into what moderates these changes are still needed. In fact, research into what drives clinical effect more generally, the kinds of mechanisms and components that may fuel changes, are rarely measured in mental health science (Wolpert et al., 2021). This study specifically addresses this gap in the mental health literature more broadly, by finding innate health plays a mediating role equivalent to and/or partnering with self-control—suggesting distinct and potentially complementary mechanisms.

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While these findings are preliminary, they do go beyond positive correlations and testing relationships. Thus, this study suggests that realization of one's innate health may mediate similar or yet untested outcomes, in prison or in other populations. In fact, realization of innate health may act as a common factor across psychological interventions and is worth further investigation. Thus, this study provides evidence for the importance of measuring the impact of innate health programs and the need for researchers to examine well-being programming more broadly for innate health interactions with program outcomes—including taking a second look at previously well-defined mechanisms, such as self-control.

Future research

Future research should consider the contrast between cognitive-behavioral approaches, where interventions "are assumed to realize their effects through changing maladaptive cognitions" (Cuijpers et al., 2019, p. 208) and innate health models where the mechanism of change are assumed to be caused by realization about one's innate capacity and potential. These ideas about causation are reflected in the fabric of these therapies. Depending on perspective of the framework, the patient *does or does not* have an inner resource. For example, a control-restriction-adaptation orientation may require top-down teaching styles (i.e., experts *know*, and participants *do not know*), and might emphasize external methods for learning (i.e., participants must learn skills *to control* thought and action), potentially seeding a mistrust in oneself (i.e., *I am ignorant and incapable*). While an innate health orientation may encourage collaboration—investing in and learning to *trust oneself*.

Transformative learning theory (Mezirow, 1991) supports this *upstream* model: where *habits of mind* (i.e., larger systems undergirding one's meaning-making frameworks) are revised or restructured, from which *points of views* (i.e., individual beliefs, feelings, judgements, and behaviors) transform naturally. Thus, an innate health intervention, instead of challenging specific maladaptive issues, may work to challenge the 'web of assumptions and beliefs that act as a lens through which we see ourselves and the world around us' (Mezirow, 1991, p.6).

The results of the current study suggest that future research on the effects of interventions on wellbeing should consider focusing on, or at least incorporating, such 'habits of mind' or larger meaning making frameworks. Future research can examine different approaches by distinguishing interventions between these two underlying assumptions and, at the very least, consider the impact of these latent assumptions on the therapeutic and educational outcomes. We hypothesize that, no matter the setting, assuming innate capacity, and that this potential comes from within, results in a different kind of attention, structure, and potentially—a far more effective intervention.

Limitations

While this study does several novel things well, like other clinical trials conducted with a convenience sample among men living in prison, this study has several limitations. First, the research was not randomized so the control condition was not a perfect match (in the strictest sense). This was evidenced by differences on pre-test measure variables between intervention and control group participants. This suggests that participants who needed more help, were recruited first into the intervention group. Second, while this study was sufficiently powered, it only examined men living in one prison in the UK. Third, this study failed to capture longitudinal quantitative data and so it is difficult to extrapolate findings over a longer period.

Conclusion

This is a novel study that identified a common underlying assumption behind human potential and positive psychological interventions specifically—the human capacity for

innate health—and asked: Does innate health function as a mediator in the same way self-control does within an incarcerated population? We conducted a mediation analysis, tested social desirability bias, and examined the impact of the intervention on crucial variables such as well-being, self-control, aggression, drug abuse, anti- and prosocial behavior. This study showed significant improvements in higher levels of innate health, self-control, wellbeing, and prosocial behavior and lower levels of aggression in the intervention group as compared to the control group. More importantly, innate health was found to serve as a mediator that functions similarly to self-control among men living in prison. This indicates future research should incorporate innate health as a potential mechanism across mental health and well-being variables and populations.

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References

Andrews, D. A., Bonta, J., & Hoge, R. D. (1990). Classification for effective rehabilitation: Rediscovering psychology. *Criminal Justice and Behavior*, *17*(1), 19–52. https://doi.org/10.1177/0093854890017001004

Baranyi, G., Scholl, C., Fazel, S., Patel, V., Priebe, S., & Mundt, A. P. (2019). Severe mental illness and substance use disorders in prisoners in low-income and middle-income countries: A systematic review and meta-analysis of prevalence studies. *Lancet. Global Health*, *7*(4), e461–e471. https://doi.org/10.1016/S2214-109X(18)30539-4

Barnett, G. D., & Fitzalan Howard, F. F. (2018). What doesn't work to reduce reoffending? A review of reviews of ineffective interventions for adults convicted of crimes. *European Psychologist*, *23*(2), 111–129. https://doi.org/10.1027/1016-9040/a000323

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://pubmed.ncbi.nlm.nih.gov/3806354/

Baumeister, R. F. (1991). *Meanings of life*. Guilford press.

Borg, M. B. (1997). *The impact of training in the Health Realization/Community Empowerment model on affective states of psychological distress and well-being* (Dissertation No. 9831013) [Doctoral dissertation, California School of Professional Psychology, Los Angeles]. ProQuest Dissertations and Theses Global.

Bryant, F. B., & Smith, B. D. (2001). Refining the architecture of aggression: A measurement model for the Buss-Perry Aggression Questionnaire. *Journal of Research in Personality*, *35*(2), 138–167. http://dx.doi.org/10.1006/jrpe.2000.2302

Burt, C. H. (2020). Self-control and crime: Beyond Gottfredson and Hirschi's theory. *Annual Review of Criminology*, *3*, 43–73. https://doi.org/10.1146/annurev-criminol-011419-041344

Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology*, *63*(3), 452–459. https://psycnet.apa.org/buy/1993-00039-001

Cobo, B., Castillo, E., López-Torrecillas, F., & Rueda, M. D. M. (2021). Indirect questioning methods for sensitive survey questions: Modelling criminal behaviours among a prison population. *PLOS ONE*, *16*(1), e0245550. https://doi.org/10.1371/journal.pone.0245550

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, *24*(4), 349–354. https://doi.org/10.1037/h0047358

Cuijpers, P., Reijnders, M., & Huibers, M. J. H. (2019). The role of common factors in psychotherapy outcomes. *Annual Review of Clinical Psychology*, *15*, 207–231. https://doi.org/10.1146/annurev-clinpsy-050718-095424

De Jong, J. D., & Denkers, A. J. M. (2020). Anger with love: How professionals get through to high-risk youth in troublesome groups. In: C. Melde, & F. Weerman (Eds.). *Gangs in the era of internet and social media* (pp. 175–197). Springer. https://link.springer.com/chapter/10.1007/978-3-030-47214-6_9

de Ridder, D. T. D., Lensvelt-Mulders, G., Finkenauer, C., Stok, F. M., & Baumeister, R. F. (2012). Taking stock of self-control: A meta-analysis of how trait self-control relates to a wide range of behaviors. *Personality and Social Psychology Review*, *16*(1), 76–99. https://doi.org/10.1177/1088868311418749

Denkers, A. J. M., & Catherine-Gray, J. L. (2021). *Three principles, Expertise and Well-being: Introducing the 3PHR-scale*. *Research Square.* Under Review https://doi.org/10.21203/rs.3.rs-908242/v1.

Denkers, A. J. M., & De Jong, J. D. D. (2020). Delinquentie, Vrienden en boosheid met liefde. *Tijdschrift voor Criminologie*, *62*(2–3), 278–297. (2020).

Diamond, P. M., & Magaletta, P. R. (2006). The Short-Form Buss-Perry Aggression Questionnaire (BPAQ-SF): A validation study with federal offenders. *Assessment*, *13*(3), 227–240. https://doi.org/10.1177/1073191106287666

Fazel, S., Hayes, A. J., Bartellas, K., Clerici, M., & Trestman, R. (2016). Mental health of prisoners: Prevalence, adverse outcomes, and interventions. *Lancet Psychiatry*, *3*(9), 871–881. https://doi.org/10.1016/s2215-0366(16)30142-0

Gillebaart, M. (2018). The "operational" definition of self-control. *Frontiers in Psychology*, *9*, 1231. https://doi.org/10.3389/fpsyg.2018.01231

Gorsira, M., Denkers, A. J. M., & Huisman, W. (2018). Both sides of the coin: Motives for corruption among public officials and business employees. *Journal of Business Ethics*, *151*(1), 179–194. https://doi.org/10.1007/s10551-016-3219-2.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford University Press.

Green, A. L., Ferrante, S., Boaz, T. L., Kutash, K., & Wheeldon-Reece, B. (2021a). Evaluation of the SPARK child mentoring program: A social and emotional learning curriculum for elementary school students. *Journal of Primary Prevention*, *42*(5), 531–547. https://doi.org/10.1002/pits.22487

Green, A. L., Ferrante, S., Boaz, T. L., Kutash, K., & Wheeldon-Reece, B. (2021b). Social and emotional learning during early adolescence: Effectiveness of a classroom-based SEL program for middle school students. *Psychology in the Schools*, 58(6), 1056–1069. https://doi.org/10.1007/s10935-021-00642-3

Hallett, M., & McCoy, J. S. (2015). Religiously motivated desistance: An exploratory study. *International Journal of Offender Therapy and Comparative Criminology*, *59*(8), 855–872. https://doi.org/10.1177/0306624X14522112

Hanley, J. A., Negassa, A., Edwardes, M. D., & Forrester, J. E. (2003). Statistical analysis of correlated data using generalized estimating equations: An orientation. *American Journal of Epidemiology*, *157*(4), 364–375. https://doi.org/10.1093/aje/kwf215

Haver, A., Akerjordet, K., Caputi, P., Furunes, T., & Magee, C. (2015). Measuring mental well-being: A validation of the Short Warwick-Edinburgh Mental Well-Being Scale in Norwegian and Swedish. *Scandinavian Journal of Public Health*, *43*(7), 721–727. https://doi.org/10.1177/1403494815588862

Hearn, N., Joseph, S., & Fitzpatrick, S. (2021). Post-traumatic growth in prisoners and its association with the quality of staff–prisoner relationships. *Criminal Behaviour and Mental Health*, *31*(1), 49–59. https://doi.org/10.1002/cbm.2173

Johnston, T. M., Brezina, T., & Crank, B. R. (2019). Agency, self-efficacy, and desistance from crime: An application of social cognitive theory. *Journal of Developmental and Life-Course Criminology*, *5*(1), 60–85. https://doi.org/10.1007/s40865-018-0101-1

Kelley, T. M., Hollows, J., Lambert, E. G., Savard, D. M., & Pransky, J. (2018). Teaching health versus treating iillness: The efficacy of three principles correctional counseling with people in an English prison. *International Journal of Offender Therapy and Comparative Criminology*, *62*(9), 2831–2856. https://doi.org/10.1177/0306624x17735253

Kelley, T. M., Hollows, J., Pransky, J., Kryvanos, A., & Bowen, S. (2022). The efficacy of principle-based correctional counseling for improving thee self-control and mental health of people incarcerated for sexual violence. *Violence Against Women*, *28*(2), 573–592. https://doi.org/10.1177/10778012211022783

Kelley, T. M., Hollows, J., & Savard, D. M. (2019). Teaching health versus treating illness: The efficacy of intensive three principles correctional counseling for improving the mental health/resilience of people in an English prison. *Journal of Offender Rehabilitation*, *58*(8), 661–677. https://doi.org/10.1080/10509674.2019.1648352

Kerekes, N., Brändström, S., & Nilsson, T. (2019). Imprisoning yoga: Yoga practice may Increase the character maturity of male prison inmates. *Frontiers in Psychiatry*, *10*, article 406. https://doi.org/10.3389/fpsyt.2019.00406

Maslow, A. H., & Hoffman, E. E. (1996). *Future visions: The unpublished papers of Abraham Maslow*. Sage Publications, Inc.

Mezirow, J. (1991). *Transformative Dimensions of Adult Learning*. San Francisco, CA: Jossey-Bass Inc.

Larimer, M. D. (2008). *Authentic education and the innate health model: An approach to optimizing the education of the whole person* [Dissertation, (Publication Number 3326485) West Virginia University]. ProQuest Dissertations Publishing. https://www.proquest.com/openview/e94801440ca90f3f19466033aaef6415/1?pq-origsite=gscholar&cbl=18750.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, & coping*. Springer.

Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, *73*(1), 13–22. https://doi.org/10.1093/biomet/73.1.13

Maier, K., & Ricciardelli, R. (2021). 'Prison didn't change me, I have changed': Narratives of change, self, and prison time. *Criminology and Criminal Justice*. https://doi.org/10.1177/17488958211031336

Malouf, E. T., Schaefer, K. E., Witt, E. A., Moore, K. E., Stuewig, J., & Tangney, J. P. (2014). The brief self-control scale predicts jail inmates' recidivism, substance dependence, and post-release adjustment. *Personality and Social Psychology Bulletin*, *40*(3), 334–347. https://doi.org/10.1177/0146167213511666

Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. American Psychological Association.

Maruna, S., & Liem, M. (2021). Where is this story going? A critical analysis of the emerging field of narrative criminology. *Annual Review of Criminology*, *4*(1), 125–146. https://doi.org/10.1146/annurev-criminol-061020-021757

McGuire, J. (2020). What works with violent offenders: A response to "nothing works". In S. Wormith, L. A. Craig & T. E. Hogue (Eds.), *The Wiley Handbook of what works in violence risk management: Theory, research, and practice* (pp. 53–78). John Wiley & Sons. https://doi.org/10.1002/9781119315933

Mills, R. C. (2005a, April). *Empowering communities: Prevention from the inside out. Creating a Dialogue Between Science and spirituality conference*, Morgantown, WV, United States.

Mills, R. C. (2005b). Sustainable community change: A new paradigm for leadership in community revitalization efforts. *National Civic Review*, *94*(1), 9–16.

Ministry of Justice. (2019a). Economic and social costs of reoffending: Analytic report*Official Statistics* Website: UK Government. http://www.justice.gov.uk/publications/research-and-analysis/moj

Ministry of Justice. (2019b). Prison population figures: 2019. *Journal of Official Statistics* [Web site]. UK Government. https://www.gov.uk/government/statistics/prison-population-figures-2019.

Morrow-Howell, N., Hinterlong, J., Rozario, P. A., Tang, F. (2003). Effects of volunteering on the well-being of older adults. *Journals of Gerontology: Series B*, *58*(3), S137–S145. https://doi.org/10.1093/geronb/58.3.S137

Piquero, A. R., & Rocque, M. (2020). Changing self-control: Promising efforts and a way forward. *New Directions for Child and Adolescent Development*, *2020*(173), 39–47. https://doi.org/10.1002/cad.20368

Praptomojati, A., & Subandi, M. A. (2020). Forgiveness therapy for adult inmate in Indonesian correctional facility: A pilot study. *Journal of Forensic Psychiatry and Psychology*, *31*(3), 391–408. https://doi.org/10.1080/14789949.2020.1751869

Ptacek, J. T., & Daubman, K. A. (2020). An exploration of self-compassion in incarcerated women. *Journal of Police and Criminal Psychology*, *35*(2), 182–190. https://doi.org/10.1007/s11896-018-9304-y

Robertson, C. L., Halcon, L., Hoffman, S. J., Osman, N., Mohamed, A., Areba, E., Savik, K., & Mathiason, M. A. (2019). Health realization community coping intervention for Somali refugee women. *Journal of Immigrant and Minority Health*, *21*(5), 1077–1084. https://doi.org/10.1007/s10903-018-0804-8

Rose, J. F. (1990). Psychologic health of women: A phenomenologic study of women's inner strength. *ANS. Advances in Nursing Science*, *12*(2), 56–70. https://oce-ovid-com.proxy.library.vcu.edu/article/00012272-199001000-00009/PDF

Roy, A. F. (2007). *An examination of the principle-based leadership trainings and business consultations of a group private practice* (Dissertation No. 3265862) [Doctoral dissertation, Massachusetts School of Professional Psychology]. ProQuest Dissertations and Theses Global.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68–78. https://doi.org/10.1037/0003-066x.55.1.68

Ryff, C. D. (1989). Happiness is everything, or Is It? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Sanches, C., Gouveia-Pereira, M., Marôco, J., Gomes, H., & Roncon, F. (2016). Deviant behavior variety scale: Development and validation with a sample of Portuguese adolescents. *Psicologia: Reflexão e Crítica*, *29*(1), 1–8. https://doi.org/10.1186/s41155-016-0035-7

Sedgeman, J. A. (2005). Health realiizatoin/innate health: Can a quiet mind and a positive feeling state be accessible over the lifespan without stress-relief techniques? *Medical Science Monitor*, *11*(12), 47–52. http://www.medscimonit.com/fulltxt.php?IDMAN=8224

Sedgeman, J. A. (2008). *Effects of a mind-consciousness-thought (MCT) intervention on stress and well-being in freshman nursing students* [Graduate theses, dissertations, and problem reports 2848]. https://researchrepository.wvu.edu/etd/2848

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5–14. https://doi.org/10.1037/0003-066x.56.1.89

Smith, C. S., Dingley, C., & Roux, G. (2019). Inner strength—State of the science. *Canadian Journal of Nursing Research*, *51*(1), 38–48. https://doi.org/10.1177/0844562118790714

Suarez, E. M., & Mills, R. C. (1982). *Sanity, insanity, and common sense: The missing link in understanding mental health*. Med-Psych Publications.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*(2), 271–324. http://lazypants.org/dl/files/public/TangneyBaumeisterBoone2004.pdf

Toepoel, V., & Funke, F. (2018). Sliders, visual analogue scales, or buttons: Influence of formats and scales in mobile and desktop surveys. *Mathematical Population Studies*, *25*(2), 112–122. https://doi.org/10.1080/08898480.2018.1439245

Turner, M., King, N., Mojtahedi, D., Burr, V., Gall, V., Gibbs, G. R., Hudspith, L. F., Leadley, C. B., & Walker, T. (2021). Well-being programmes in prisons in England and Wales: A mixed-methods study. *International Journal of Prisoner Health.* Ahead of print. https://doi.org/10.1108/IJPH-03-2021-0021

Tweed, E. J., Gounari, X., & Graham, L. (2021). Mental wellbeing among people in prison in Scotland: An analysis of repeat cross-sectional surveys. *Journal of Public Health*, *43*(2), e188–e195. https://doi.org/10.1093/pubmed/fdz106

Valiente, C., Espinosa, R., Contreras, A., Trucharte, A., Caballero, R., & Peinado, V. (2021). The feasibility and acceptability study of a positive psychology group intervention for people with severe psychiatric conditions. *Journal of Positive Psychology*, 1–14. https://doi.org/10.1080/17439760.2021.1871940

Vanhooren, S., Leijssen, M., & Dezutter, J. (2018). Coping strategies and posttraumatic growth in prison. *Prison Journal*, *98*(2), 123–142. https://doi.org/10.1177/0032885517753151

Vazsonyi, A. T., Ksinan, A. J., & Javakhishvili, M. (2021). Problems of cross-cultural criminology no more! Testing two central tenets of Self-Control Theory across 28 nations. *Journal of Criminal Justice*, *75*, article 101827. https://doi.org/10.1016/j.jcrimjus.2021.101827

Vazsonyi, A. T., Mikuška, J., & Kelley, E. L. (2017). It's time: A meta-analysis on the self-control-deviance link. *Journal of Criminal Justice*, *48*, 48–63. http://dx.doi.org/10.1016/j.jcrimjus.2016.10.001

Wallace, D., Larson, M., Somers, L., Padilla, K. E., & Mays, R. (2020). Recidivism and relationships: Examining the role of relationships, transitions, and relationship quality in reincarceration. *Journal of Developmental and Life-Course Criminology*, *6*(3), 321–352. https://doi.org/10.1007/s40865-020-00144-6

Weerman, F. M. (2011). Delinquent peers in context: A longitudinal network analysis of selection and influence effects. *Criminology*, *49*(1), 253–286. https://doi.org/10.1111/j.

Wolpert, M., Pote, I., & Sebastian, C. L. (2021). Identifying and integrating active ingredients for mental health. *Lancet Psychiatry*, *8*(9), 741–743. https://doi.org/10.1016/S2215-0366(21)00283-2

Woodall, J., & Freeman, C. (2020). Promoting health and well-being in prisons: An analysis of one year's prison inspection reports. *Critical Public Health*, *30*(5), 555–566. https://doi.org/10.1080/09581596.2019.1612516

Woodall, J., & Freeman, C. (2021). Developing health and wellbeing in prisons: An analysis of prison inspection reports in Scotland. *BMC Health Services Research*, *21*(1), article 314. https://doi.org/10.1186/s12913-021-06337-z

Zhong, S. L., Senior, M., Yu, R. Q., Perry, A., Hawton, K., Shaw, J., & Fazel, S. (2021). Risk factors for suicide in prisons: A systematic review and meta-analysis. *Lancet Public Health*, *6*(3), e164–e174. https://doi.org/10.1016/s2468-2667(20)30233-4