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The Efficacy of the Growing Pro-social Program in Reducing Anger, Shame, and Paranoia over Time in Male Prison Inmates: A Randomized Controlled Trial

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Abstract

Objectives: This randomized controlled trial aimed to assess the efficacy of a cognitive-behavioral group program, Growing Pro-Social (GPS), in reducing anger, shame, and paranoia over time in Portuguese male prison inmates. *Methods:* Participants were randomized to the GPS treatment ($n = 121$) or control group ($n = 133$). The State-Trait Anger Expression Inventory, the Other as Shamer Scale, and the Paranoia Scale were completed at baseline, at the middle of treatment, at posttreatment, and at 12 months' follow-up. Intervention effects were tested with latent growth curve models (LGCM).

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Results: At baseline, no significant differences between groups were found. Results from LGCM showed that condition was a significant predictor of change observed in all outcome measures over time. While treatment participants showed a significant increase in anger-control over time, controls presented a significant decrease over time in this same variable. For the remaining dimensions of anger, as well as for external shame and paranoia, while the treatment group showed a significant decrease over time, the control group showed a significant increase or no change. *Conclusions:* These results pointed out the GPS's ability to promote significant change in cognitive and emotional relevant variables associated with antisocial behavior.

The debate surrounding the effectiveness of rehabilitation efforts for criminal offenders has moved from the rather pessimistic perspective of the 1970s, exemplified best by Martinson (1974), to a more optimistic perspective driven by research from the 1980s and 1990s. A consistent theme in numerous reviews of the rehabilitation literature is the positive effects of cognitive and cognitive-behavioral approaches in the treatment of the offender population (e.g., Bonta et al. 2011; Koehler et al. 2013; Raynor, Ugwudike, and Vanstone 2014; Trotter 2013). For instance, Andrews and Bonta (2010) concluded from a meta-analysis of adult and juvenile correctional treatment that cognitive and behavioral methods were critical aspects of effective correctional treatment. Research reviews of cognitive-behavioral group programs for offenders have also drawn favorable conclusions (e.g., Antonio and Crossett 2017).

In addition to providing support for particular types of programs, meta-analytic evidence has highlighted certain specific features of effective treatment. Of these, the well-known Risk-Need-Responsivity (RNR) model is supported by robust empirical evidence (e.g., Andrews and Bonta 2010). The RNR model is based in the "human service principles," which state that recidivism reduction should be achieved through some type of treatment instead of punishment. According to RNR, treatment should correspond to the offenders' risk level of reoffending, address their dynamic risk factors, and match their learning styles and abilities (Andrews, Bonta, and Wormith 2011; Andrews and Bonta 2010).

Cognitive-behavioral programs usually include different modules or sessions addressing cognitive, emotional, and behavioral skills, assumed to be lacking in offenders. Nevertheless, each of these skills tends to be conceptualized as independent from the others instead of seeing them as intertwined variables (Rijo et al. 2007). For instance, emotional control sessions are carried out as if emotional control was totally independent from social reasoning or interpersonal behavior (Brazão, da Motta, and Rijo 2013). Rijo and colleagues (2007) developed a new cognitive-behavioral rehabilitation program, the Growing Pro-Social (GPS), adapting its contents and methodology to the features of the target population, and taking into account the RNR model.

GPS is based on the developments of cognitive-behavioral therapies for personality disordered individuals, namely, schema therapy (e.g., Rafaeli, Young, and Bernstein 2011; Young, Klosko, and Weishaar 2003), which conceptualizes antisocial behavior as the result of cognitive malfunctioning in the attribution of meaning, underlying cognitive distortions, and core cognitive structures responsible for the social information processing. GPS aims to achieve behavioral change, not only through the rehearsal of prosocial behaviors but also through the promotion of change in cognitive and emotional correlates of antisocial behavior. The program's ultimate goal is to promote change in the dysfunctional cognitive structures underlying antisocial behavior (for a review, see Brazão et al. 2013) throughout a progressive strategy of change (for a program overview, see the Interventions section).

Although a considerable amount of research has recognized the role that cognitive malfunctioning plays in the onset and maintenance of antisocial behavior, recent developments in the cognitive-behavioral therapies highlight the importance of variables, such as anger, shame, and paranoia (in a nonclinical sense), in psychopathology (Gilbert et al. 2009; Matos and Pinto-Gouveia 2010; Matos, Pinto-Gouveia, and Gilbert 2013; Novaco 2010), including antisocial and aggressive behavior (Elison, Garofalo, and Velotti 2014; Gilbert 2009, 2010, 2014, 2017; Gold, Sullivan, and Lewis 2011; Koltz and Gilbert 2018; Velotti, Elison, and Garofalo 2014).

According to the evolutionary framework, seeking dominance and displaying threat behaviors toward others can be conceptualized as a strategy to cope with the experience of shame and the consequent threat it represents to one's position in the social rank (Castilho et al. 2015; Gilbert 2009, 2010, 2014, 2017; Koltz and Gilbert 2018). Shame has been defined as a painful and disruptive emotion because the self (and not simply the person's behavior) is negatively evaluated and scrutinized (Owen and Fox 2011). When

people feel shame about the self, they feel "small," worthless, and power-less. Shamed people also feel exposed, and although an actual observing audience need not to be present, there is often the imagery of how one's defective self would appear to others (Tangney et al. 2011). Shame-proneness has been linked to early experiences of abuse, highly critical parenting, and insecure parental attachment (Gilbert 2009, 2010, 2014, 2017; Koltz and Gilbert 2018) which, in turn, have been found to be asso-ciated with antisocial behavior (e.g., Abram et al. 2004).

It is well known that offenders tend to use aggressive behaviors (exter-nalizing anger) as a defensive strategy against feelings of shame instead of displaying a submissive strategy (Farmer and Andrews 2009; Gilbert 2017; Koltz and Gilbert 2018). Anger is also a common response to rejection by others, criticism, and social put-down (Castilho et al. 2015). From this point of view, anger can be seen as an effective coping strategy against perceived attacks to the self (Beck 1999; Gilbert et al. 2005; Ribeiro da Silva, Rijo, and Salekin 2015; Rijo, Oliveira, and Brazão 2017; Shanahan, Jones, and Thomas-Peter 2014; Thomaes et al. 2011). The perception of being inferior, incompetent, and socially devalued, which generally arises during the expe-rience of shame (Farmer and Andrews 2009; Thomaes et al. 2011), can lead to the expression of anger. This shame-induced anger state is often per-ceived as a particular anger state where hostility prevails, conceptualized as "humiliated fury" (Thomaes et al. 2011). In these cases, individuals tend to repress shame and to become angry when faced with shameful events. People who experience humiliated furry reappraise shameful events as externally caused, replacing self-blame (e.g., "What a terrible person I am for doing this") with other-blame (e.g., "What a terrible person you are for doing this to me"; Thomaes et al. 2011). Such mechanisms are quite common in offenders, in which shame is bypassed and replaced with other-directed anger and aggression (Beck 1999; Jones 2014).

Several studies have found that anger is a significant predictor of aggres-sion (e.g., Cornel, Peterson, and Richards 1999), assaults (e.g., Novaco and Taylor 2004), and disciplinary infractions (e.g., Marsee and Frick 2007). A meta-analytic review which included 133 studies with prison inmates found a strong relationship between anger and violence, suggesting that anger had a significant predictive role in eliciting offending behavior (Chereji, Pintea, and David 2012). Anger has also been implicated as a motivator for crim-inal activities and reoffending (Walters 1990) and as a personal attribute that puts an offender at a higher risk of reoffending (Andrews 1996; Andrews and Bonta 2010). These findings suggest that anger may be an important emotional cause of violent behavior. Therefore, anger becomes

an important criminogenic need considered in treatment programs for offenders (Chereji et al. 2012).

Research also indicates a robust link between shame and tendencies to externalize blame and anger (Tangney et al. 2011), with shame-proneness being systematically associated with anger arousal, suspiciousness, resentment, irritability, propensity to blame others, and hostility (Bear et al. 2009; Lobbestael et al. 2009; Shanahan et al. 2014; Tangney, Wagner, and Gramzow 1992). In a study with 60 male prison inmates, Wright, Gudjonsson and Young (2008) found that feelings of shame were associated with high levels of anger difficulties. In turn, Tangney and colleagues (2011) found, in a sample of 550 male prison inmates, that proneness to shame was associated with substance abuse, impulsivity, and antisocial behavior. Studies with forensic samples have also shown that shame is a significant predictor of aggressive or violent behavior, recidivism risk, and reoffending (e.g., Hosser, Windzio, and Greve 2008; Thomaes et al. 2008). Taken together, these findings suggest that reducing offenders' propensity to experience shame may be an important focus for treatment, as shame may contribute to other psychological difficulties such as aggressiveness and anger (Wright et al. 2008), which have been conceptualized as criminogenic needs (Andrews and Bonta 2010).

Additionally, individuals with high levels of shame tend to adopt external attributions (blaming others) as a self-preserving bias, thus triggering paranoid ideation (Castilho et al. 2015). Paranoia (in a nonclinical sense) can be conceptualized as a defense system against the perception of threats in order to protect the individual in a social context where he or she perceives him or herself as an undesirable social object, due to the loss of attractiveness of the self (De la Rubia 2014; Gilbert 2010, 2014; Salvatore et al. 2012). Studies within forensic samples (e.g., Chakhssi, Bernstein, and de Ruiter 2012) pointed out that antisocial individuals tend to easily detect a hidden treat or competitor ("paranoid overcontroller mode"), being highly distrusting and hostile toward others (Joyce, Dillane, and Vasquez 2013; Novaco 2010). This externalization and counterattack response is mostly associated with feelings of anger and shame (Gilbert 2009, 2010, 2014, 2017; Koltz and Gilbert 2018). A study by Castilho and colleagues (2015) showed that external shame had a significant and independent contribution to the feelings of anger and the expression of anger toward others. Results also showed that individuals with high anger-proneness tended to endorse more paranoid ideation.

Despite empirical evidence on the role that anger, shame, and paranoia may play in the origins and maintenance of criminal behavior, a great

amount of research on rehabilitation programs for offenders has identified recidivism reduction as the preferred measure of its efficacy. Less is known about cognitive and emotional variables underlying behavioral change (Antonio and Crossett 2017; Skeem, Polaschek, and Manchak 2009), and further research is needed to assess not only the behavioral change but also the change in other variables associated with the onset and maintenance of antisocial behavior. A former pilot study on the effects of the GPS program tried to address this issue, by testing the ability of the program in reducing anger, shame, and paranoia in male prison inmates. Data were analyzed with the Reliable Change Index (Jacobson and Truax 1991), which assesses individual clinical change (for a detailed description on how this statistical method was used in this study, see Brazão et al. 2015a). Results showed that, while the 24 treatment participants presented clinical improvement in anger, shame, and paranoia, the majority of the 24 controls showed clinical deterioration in the same variables between baseline and posttreatment assessments. Nonetheless, this pilot study suffered from a number of methodological flaws such as the small sample size in each condition, the absence of blind assessments, and the lack of a follow-up assessment, which did not allow to draw conclusions about delayed effects and/or stability of change over time.

The present study tried to overcome limitations of previous research and consisted of a randomized controlled trial testing GPS's effects in anger, shame, and paranoia in a larger sample of male prison inmates. This study's main goal was, therefore, to assess whether male prison inmates who participated in GPS showed a decrease in anger, shame, and paranoia over time, when compared with controls. Another goal was to examine the extent to which any improvements were maintained after treatment. The association between GPS completion and change over time was also analyzed in the treatment group in order to investigate whether participants who completed the program presented higher improvements in anger, shame, and paranoia than noncompleters.

We hypothesized that GPS can reduce paranoia, shame, and anger because it engenders a less threatening view of the self and the others. After GPS treatment, participants are expected to see themselves as more worthy individuals, thus decreasing the severity and frequency of feelings of shame. If change occurs at this level, it is likely that paranoia will also decrease, as a consequence of seeing others as less threatening. Following these assumptions, we can also expect that more confident individuals (about themselves and others) should experience a decrease in the frequency and intensity of anger feelings, assuming that anger could consist,

at least partially, in a strategy to cope with shame and perceived external attacks. We also expect that treatment effects would be maintained over time and that participants who completed the program would present higher improvements in anger, shame, and paranoia over time, when compared with noncompleters.

Method

This study was designed in accordance with the Consolidated Standards of Reporting Trials (CONSORT) Statement (Moher et al. 2010) for reporting randomized trials.

Trial Design and Participants

This was a randomized controlled trial with blind assessments, carried out in nine prisons in three city areas in mainland Portugal (Lisbon, Oporto, and Coimbra) and in the Madeira Island. Participants were male prison inmates from Portugal and African countries (whose official language is Portuguese) aged between 18 and 40 years old. The selection of inmates obeyed to the following exclusion criteria: (1) presence of cognitive disabilities (GPS is not suitable for the cognitively impaired because the program encompasses the development of metacognition) or (2) psychotic symptoms (the experiential exercises used in the program are contraindicated for psychotic patients); (3) being treated for drug abuse or dependence (cessation or at least substantial reduction of drug or alcohol use must precede GPS treatment); (4) being sentenced exclusively for sexual offenses (sex offenders would benefit from more specific intervention programs, although this subgroup of offenders are more likely to present significant levels of anger, shame, and paranoia); and (5) remaining in prison less than 24 months since the beginning of the program (taking into account GPS's 12-month length and 12-month follow-up assessment). Exclusion criteria (1) to (3) were assessed by staff psychologists and/or collected from the justice report files. Female offenders were also excluded from the sample because women represent less than 6 percent of the total inmates in Portugal, and any possible idiosyncrasies from this cohort would be underrepresented.

Sample size. A power analysis showed that a sample of 203 inmates was necessary to detect medium effects with a significance level of .05 and a power of .90. The power analysis was conducted a priori, that is, before the study onset, and repeated measures analysis of variance (ANOVA) was

planned as the data analytic strategy. However, taking into account the advantages of latent growth curve models (LGCM) over repeated measures ANOVA (see Data Analysis section), as well as the enough large sample size to perform LGCM, this methodology was selected.

Interventions

GPS (Rijo et al. 2007) is a manualized group rehabilitation program for juvenile (from 16 years of age) and adult offenders, either male or female, based on schema therapy (e.g., Rafaeli et al. 2011; Young et al. 2003), which conceptualizes aggressive behavioral patterns as a result of a distorted view of the self and of the others.

In an effort to improve the traditional group exercises in this kind of programs, GPS sessions include experiential exercises. Participants are encouraged to achieve insight through systematic questioning about the reactions noticed during the activities (guided discovery approach) and to apply this knowledge to real-life situations (Brazão et al. 2013; Rijo et al. 2007). The program was developed to promote gradual change in behavioral and emotional correlates, while promoting a more adaptive and prosocial information processing style. The ultimate goal of the GPS is to promote change in particular dysfunctional core beliefs about the self and the others, which underlie the social information processing of antisocial individuals (Calvete 2008; Chakhssi et al. 2012; Gilbert and Daffern 2013; Shorey, Anderson, and Stuart 2014; Specht, Chapman, and Cellucci 2009). It is expected that a change at a cognitive level (e.g., less prominence of dysfunctional core beliefs and cognitive distortions) will be followed by a change in behavioral and emotional correlates of antisocial behavior.

GPS consists of 40 sessions, each lasting about 90 minutes. Sessions must be carried out by two therapists who should be skillful in schema therapy. As summarized in Table 1, sessions are grouped into five modules, preceded by an initial session for the presentation of the program. While modules 1 and 2 are focused in communication skills and interpersonal behavior, modules 3 to 5 directly address cognitive and emotional variables. GPS ends with a final session, and follow-up sessions can be carried out afterward. The extension of each module varies depending on the contents and the time needed to achieve the defined goals.

The treatment group attended the GPS program for about 12 months, in addition to the treatment as usual (TAU) delivered at Portuguese prisons: supervision of school frequency, occupational and job-related tasks, and sentence planning supervision over time. The control group received TAU

Table 1. GPS Modules and Contents.

Modules	Number of Sessions	Contents Summary
Initial session	1	Presentation of the participants, the structure, and the methodology of the program.
1. Human communication	5	The communication process and its obstacles; verbal and nonverbal communication skills, the ambiguity of human communication; the (in)congruences between digital and analogical languages.
2. Interpersonal relationships	10	Behavioral styles (assertive, aggressive, passive, and manipulative) in relationships; self-concept and interpersonal behavior; ideas about the others and interpersonal behavior; specific interpersonal contexts and assertive behavior; negotiation as a strategy to deal with conflicts.
3. Cognitive distortions	6	Understanding cognitive distortions (thinking errors); identifying and changing cognitive distortions: selective abstraction, overgeneralization, mind reading, crystal ball, minimization, disqualifying the positive experiences, dichotomous thinking, labeling and personalization.
4. Function and meaning of emotions	7	The diversity of the emotional experience; the nature and function of emotions: sadness, shame, fear, anger, guilt, and happiness.
5. Maladaptive schemas	10	The role of core schemas about the self and the others; maladaptive schemas and their influence in giving meaning to reality; identifying and changing core schemas: failure, social isolation/alienation, mistrust/abuse, defectiveness/shame, emotional deprivation, abandonment/instability, grandiosity/entitlement; fighting core schema's influences in thoughts, emotions, and behavior.
Final session	1	Reflection and consolidation of learning, and generalization of gains made during the program.

Note: Adapted from Brazão et al. 2013:640.

and did not attend the GPS program or any other kind of structured intervention during the research period.

GPS is used in the Portuguese Prison system as a universal delivery program, with most prison inmates receiving the program a few months after prison intake. Offenders presenting specific criminogenic needs also receive other structured interventions after GPS completion.

Outcome Measures

Participants completed self-report measures of anger, shame, and paranoia. Additionally, demographic and legal information were collected from prison records.

State-Trait Anger Expression Inventory (STAXI). STAXI (Spielberger 1988; Portuguese version by Silva, Campos, and Prazeres 1999) is a 44-item questionnaire divided into three parts: the first part assesses anger-state (how one feels in the present moment), the second part assesses anger-trait (how one generally feels), and the third part assesses anger-expression (how one generally reacts or behaves when feeling enraged or angry). Anger-trait encompasses two factors (temperament and angry-reaction), and anger-expression is composed by three factors (anger-in, anger-out, and anger-control). Each item is rated on a four-point scale (1 = not at all to 4 = almost always), and higher scores (resulting from the sum of the items) suggest high levels of anger (Spielberger 1988).

In the original version, internal consistency of the different subscales ranged from .73 to .93 (Spielberger 1988), while in the Portuguese version the same values ranged between .60 and .85 (Silva et al. 1999). In the present study, internal consistency values were .91 for anger-state, .86 for anger-trait, .81 for anger-temperament, .77 for anger-reaction, .76 for anger-expression and anger-in, .80 for anger-out, and .84 for anger-control.

Other as Shamer Scale (OAS). OAS (Allan, Gilbert, and Goss 1994; Portuguese version by Matos, Pinto-Gouveia, and Duarte 2011) is an 18-item scale that assesses external shame (i.e., subject's perception of being negatively judged by others). Each item is rated on a five-point scale (0 = never to 4 = almost always) according to how frequently the individual feels she or he is being judged by others (e.g., "Other people seem me as small and insignificant"), and higher scores (resulting from the sum of the items) suggest high levels of external shame. In the original version, an exploratory factor analysis found a one-factor measurement model and good

internal consistency values, either with community ($\alpha = .96$) or clinical samples ($\alpha = .92$; Goss, Gilbert, and Allan 1994). In the Portuguese version, a confirmatory factor analysis supported the one-factor measurement model, with a Cronbach's α was .91 (Matos et al. 2011). In the current study, internal consistency was .86.

Paranoia Scale (PS). PS (Fenigstein and Vanable 1992; Portuguese version by Lopes and Pinto-Gouveia 2005) is a 20-item self-report measure that assesses paranoid ideation in nonclinical samples. Items are rated on a five-point Likert scale (1 = not at all applicable to 5 = extremely applicable), where higher scores (resulting from the sum of the items) suggest high paranoid ideation, namely, suspicion of conspiracy against the self, of being observed, judged, or talked behind their back, that other people or instances can exert some kind of thought control and lack of trust in others (Fenigstein and Vanable 1992). In the original study, internal consistency was .89 in a community sample (Fenigstein and Vanable 1992). In a Portuguese study (Barreto Carvalho et al. 2015), internal consistency was .92, whereas in the current sample internal consistency was .85.

Procedures

The current study was approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra where the Research Center is based. Additionally, researchers sought authorization by the Portuguese Data Protection Authority in order to assure data protection from all participants involved in the study. A list of potential participants (who did not meet the exclusion criteria) was made available to the research team by psychologists from the justice system, after approval was obtained from the Head of the General Directorate of Reintegration and Prison Services of the Portuguese Ministry of Justice. Next, a large sample of participants was randomly selected using a random number table by a research assistant who was blind to any personal information about each inmate. Then, a first meeting between the research team and the randomized inmates occurred, in which researchers invited inmates to participate voluntarily. In this meeting, researchers explained the goals of the study and presented a brief overview of the intervention program. It was also explained to inmates that their participation in the study would not impact their sentencing in any way and that they would not receive incentives for participating in the study.

Participants who agreed to participate, gave written informed consent, completed the baseline assessment and were randomly assigned to treatment conditions (treatment and control groups) using a random number table by a research assistant who was blind to any information about each participant. Afterward, the research team informed the psychologists in each prison of the result of the randomization so that GPS could be initiated. Participants in the control group were informed that they would be offered the GPS treatment after the study's completion (including the follow-up period).

Besides baseline assessment, participants completed the midtreatment assessment (after the 20th session of the program and six months after baseline), the posttreatment assessment (at the end of GPS and six months after midtreatment), and the follow-up assessment (12 months after GPS completion, while participants were still incarcerated). So, all participants (either from treatment group or control group) were assessed exactly at 0 months, 6 months, 12 months, and 24 months. Staff who conducted randomization did not serve as therapists or assessors, and assessors were blind to condition assignment. Respondent-specific codes were used to link the data from one time point to the next one.

GPS's facilitators were chosen among the psychologists who already had training and experience in delivering the program with inmates (who were not selected for this study). In order to assure program integrity and consistency, facilitators received regular supervision by the research team (including the program's main author) during the time GPS was run in prisons. Moreover, the program's structured and manualized design ensures integrity, at least partially. It is important to add that the GPS sessions were delivered by two psychologists, which may have contributed to treatment fidelity. While one therapist was leading the session, the other one observed the implementation and helped in keeping it close to the program handbook. Quality control procedures, such as recording sessions and/or the presence of external assessors in the treatment sessions, were not allowed in prisons.

Data Analysis

Data were analyzed with the Mplus v7.4 (Muthén and Muthén 2010) and the IBM SPSS Statistics v22.0 software. The IBM SPSS was used for preliminary analyses that included comparisons between groups on demographic and criminal features, using independent samples *t*-tests or chi-square tests depending on the nature of the data. Groups were also compared on the dependent variables at baseline using independent samples

t-tests. In order to assess the association between the outcome measures, SPSS was also used to perform Pearson correlations.

Mplus was used for LGCM (Duncan and Duncan 1995). Although repeated measures statistical methods (e.g., ANOVA) can handle multiple data points, there is a growing recognition that these approaches may not be adequate when assessing change over time (Curran, Obeidat, and Losardo 2010; Duncan and Duncan 2009; Hesser 2015). These traditional methods only analyze change in observed group means, thus being incapable of capturing individual differences in change (differences in trajectories are treated as error variance). Also, these methods assume that change in participants is linear. Alternatively, LGCM examine linear and nonlinear change, and individuals are allowed to differ on the rate of change in the dependent variables over time. Therefore, LGCM is a reliable method to assess individual variation in the growth of the dependent variables and to examine if treatment condition might predict changes over time (Duncan and Duncan 1995, 2009; Malmberg et al. 2015; Muthén 1997; Muthén and Muthén 2010).

All LGCM were carried out in accordance with both intention-to-treat and per-protocol approaches. When following an intent-to-treat approach, full information maximum likelihood estimation was used to handle missing data.[1] Chi-square (χ^2), comparative fit index (CFI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) were used as model fit indices. Following the guidelines by Hu and Bentler (1999), a CFI $\geq$ .95 combined with either RMSEA $\leq$ .06 or an SRMR $\leq$ .09 were considered as indicators of acceptable or good fit.

In each LGCM, the intercept (i.e., initial status) and slope (i.e., change over time) were modeled as latent variables from data at baseline (time 1), at the middle of the treatment (time 2), at the posttreatment (time 3), and at the follow-up assessment (time 4). First, unconditional models testing a linear and a nonlinear (i.e., quadratic trend) of change in the outcome measures over time were estimated separately in each group without any predictors. Effect sizes for the rate of change observed in the dependent variables in each group were computed using Cohen's *d*, with 0.2 indicating a small effect, 0.5 a medium effect, and 0.8 a large effect (Cohen 1988).

After establishing the unconditional models, the association between condition and change over time was examined by including condition (control group vs. treatment group coded as 0 and 1, respectively) as a predictor of the growth factors (i.e., intercept and slope). The path from condition to intercept reflects group differences at the baseline and should be

nonsignificant due to randomization. The path from condition to slope reflects group differences on the trajectory of change in the outcome measures over time. The association between GPS completion and change over time in the outcome measures was also analyzed in the treatment group by including the number of sessions (<32 sessions vs. $\geq$32 sessions coded as 0 and 1, respectively) as a predictor of change over time. A cutoff of $\geq$32 sessions (80 percent of attendance) was used to classify participants as completers, in accordance with the guidelines by Cullen and colleagues (2012). For a graphical representation of a LGCM, see Appendix A.

Results

Recruitment and Retention

Two-hundred and seventy inmates, who did not meet the exclusion criteria, were invited to participate in this randomized trial (see Figure 1). Sixteen (5.9 percent) inmates refused to participate and 254 (94.1 percent) inmates completed the baseline assessment. Of these, 121 (47.63 percent) were randomly assigned to the GPS treatment, and 133 (52.37 percent) were randomly assigned to the control group.

From the initial 121 treatment participants, 108 (89.2 percent) completed the midtreatment assessment, 97 (80.1 percent) completed the posttreatment assessment and 69 (57 percent) completed the follow-up assessment. Only 17 (14 percent) inmates dropped out the program. The majority of losses to subsequent assessments were due to transference to another prison or parole. Seventy-nine treatment participants (65.4 percent) attended more than 32 sessions, 19 (15.7 percent) attended between 31 and 21 sessions, 12 (9.9 percent) attended between 20 and 11 sessions, and 11 (9 percent) attended less than 10 sessions. Participants attended in average 30 sessions ($M = 30.18$; $SD = 11.45$) of the program.

Of the 133 inmates randomized to the control group, 104 (85.9 percent) completed the midtreatment assessment, 89 (66.9 percent) completed the posttreatment assessment, and 67 (50.3 percent) completed the follow-up assessment.

Baseline Differences

Groups were compared on demographic features and no significant differences were found (all $p > .05$). In treatment and control groups, the mean age was 28.24 ($SD = 6.32$) and 28.74 years ($SD = 6.14$), respectively. The majority of participants were single (69.4 percent in the treatment group and
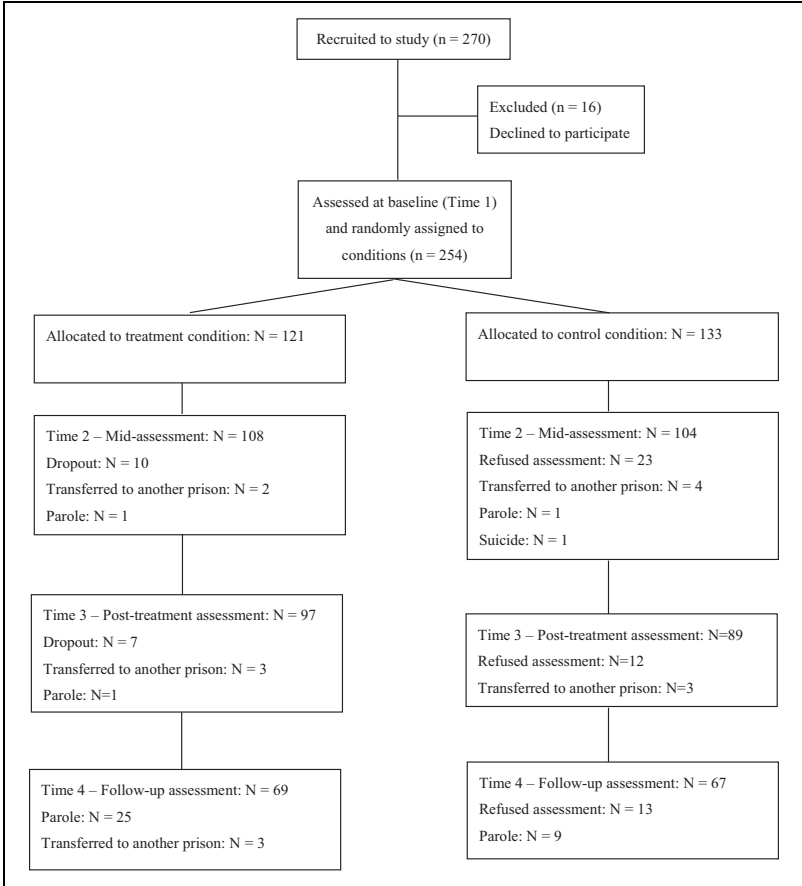
Figure 1. Flowchart of inmate participation.

70.7 percent in the control group), with a low socioeconomic status (94.2 percent in the treatment group and 97 percent in the control group).[2]

Regarding legal and criminal features, no significant differences were found (all $p > .05$). In treatment and control groups, the average sentence length was 111.53 ($SD = 59.25$) and 120.76 months ($SD = 63.22$), respectively. Even though participants were mainly first-time offenders (62.8 percent in the treatment group and 60.9 percent in the control group),[3] most of them were charged in the current conviction for having committed several crimes (56.2 percent in the treatment group and 50.4 percent in the

Table 2. Baseline Differences on the Outcome Measures by Group.

	Treatment Group		Control Group				
	M	*SD*	*M*	*SD*	*t*	*p*	Cohen's *d*
Anger-state	12.73	4.07	13.21	5.55	.794	.428	.09
Anger-trait	18.23	5.33	18.38	5.73	.206	.837	.02
Temperament	6.78	2.50	6.58	2.36	.651	.516	.08
Reaction	7.91	2.48	8.23	2.71	.963	.336	.12
Anger-expression	23.99	10.13	24.57	10.39	.449	.654	.05
Anger-in	16.82	3.97	16.93	4.33	.196	.845	.02
Anger-out	14.23	4.54	13.68	4.34	.982	.327	.12
Anger-control	23.06	5.59	23.04	5.72	.030	.976	.00
External shame	24.04	9.68	22.56	9.94	.215	.830	.15
Paranoia	50.41	10.25	50.15	11.81	.188	.851	.02

Note: M = mean; *SD* = standard deviation.

control group). Crimes for which they were sentenced to prison were predominantly against property (55.4 percent in the treatment group and 51.1 percent in the control group), followed by crimes against people (28.7 percent in the treatment group and 31.6 percent in the control group), drug-related offenses (14.2 percent in the treatment group and 13.5 percent in the control group), and crimes against the state (1.7 percent in the treatment group and 3.8 percent in the control group).[4]

Descriptive statistics for anger, shame, and paranoia by groups are presented in Table 2. No significant differences were found between conditions at baseline, which suggested that randomization was successful.

Association between the Outcome Measures at Baseline

As presented in Table 3, most outcome measures were moderately intercorrelated at the baseline, with the exception of anger-in and anger-control ($r = .009$), anger-control and shame ($r = -.110$), and anger-control and paranoia ($r = -.110$), which were not associated. These results indicated that the outcome measures were independent (thus not overlapping).

Intervention Effects in Anger, Shame, and Paranoia in Accordance with the Intention-to-treat Approach

Firstly, distribution of normality was analyzed, and no variable had indicators of severe violations to the normal distribution (SK <|3| and

Table 3. Correlation Values between the Outcome Measures.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Anger-state	—									
(2) Anger-trait	.378***	—								
(3) Temperament	.323***	.756***	—							
(4) Reaction	.333***	.766***	.535***	—						
(5) Anger-expression	.345***	.732***	.666***	.560***	—					
(6) Anger-in	.256***	.404***	.293***	.394***	.548***	—				
(7) Anger-out	.312***	.706***	.637***	.520***	.732***	.333***	—			
(8) Anger-control	−.191***	−.474***	−.491***	−.316***	−.754***	.009^{ns}	−.477***	—		
(9) External shame	.151**	.358***	.293***	.321***	.313***	.281***	.260***	−.154**	—	
(10) Paranoia	.267***	.527***	.445***	.462***	.398***	.476***	.330***	−.110^{ns}	.548***	—

Note: ns = nonsignificant.
**$p < .05$. ***$p < .001$.

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Ku <|10| Ku <|10|; Kline 2005) with skewness values ranging from .31 to .70 and kurtosis values ranging from −.58 to 1.70.

Taking into account the considerable amount of missing data, a missing completely at random (MCAR) test was performed in order to test the randomness of missing values and no patterns were found in the missing data, $MCAR_{(30)} = 15.317; p = .988$. Additionally, a chi-square test pointed out to a nonsignificant difference between the treatment and the control groups ($\chi^2 = 0.997; p = .318$; Cramer's $V = .063$), concerning missing values.

As previously stated, unconditional models were carried out separately for each group. Afterward, conditional models with group as a predictor of the growth factors (i.e., intercept and slope) were tested. All analyses were carried out in accordance with the intention-to-treat approach.

Unconditional models in the treatment group. A linear and nonlinear (i.e., quadratic) trends of the unconditional models of change in anger, shame, and paranoia over time were performed. Although a significant quadratic trend was found for anger-state, it did not achieve acceptable fit. We performed a chi-square difference test and including the quadratic trend significantly worsened the model fit, $\chi^2(5) = 39.39, p < .001$. For the remaining variables, none of the models showed a significant quadratic trend. As such, only the linear trend was included in the subsequent analyses, which presented good fit indices to the observed data (see Table 4).

The average intercept was significant for all outcome measures, indicating that the mean at baseline was significantly different from zero. The average variances of the intercept were also significant, indicating significant individual variation around the mean of self-reported anger, external shame, and paranoia at baseline. Concerning change over time, the average slope was always significant. While anger-control increased over time, the remaining variables decreased over time. The observed effect sizes were medium or strong, except for anger-state, in which the effect size was small. In addition, individual differences around the mean growth trajectory of the outcome measures were found, except for anger-state (see Appendix B).

Unconditional models in the control group. Linear and quadratic trends of the unconditional models in the control group were also performed. A significant quadratic trend was found for anger-expression. However, it did not achieve acceptable fit, and including the quadratic trend significantly worsened the model, $\chi^2(5) = 15.450, p < .001$. For the remaining variables, none of the models presented a significant quadratic trend. Therefore, only

Table 4. Model Fit Indices for the Unconditional Models in the Treatment and Control Groups, and for the Conditional Model with Condition as Predictor.

	χ^2 (df)	χ^2 p Value	RMSEA	90% CI for RMSEA	CFI	SRMR
Unconditional model in the TG						
Anger-state	5.192 (5)	.329	.019	[.000, .135]	.998	.084
Anger-trait	0.979 (5)	.964	.000	[.000, .000]	1.000	.041
Temperament	2.176 (5)	.824	.000	[.000, .000]	1.000	.069
Reaction	1.951 (5)	.855	.000	[.000, .072]	1.000	.036
Anger-expression	4.632 (5)	.462	.000	[.000, .128]	1.000	.048
Anger-in	4.380 (5)	.496	.000	[.000, .125]	1.000	.007
Anger-out	3.943 (5)	.557	.000	[.000, .118]	1.000	.070
Anger-control	4.325 (5)	.503	.000	[.000, .124]	1.000	.074
External shame	6.348 (5)	.273	.050	[.000, .149]	0.971	.069
Paranoia	3.807 (5)	.577	.000	[.000, .116]	1.000	.052
Unconditional model in the CG						
Anger-state	6.686 (5)	.245	.057	[.000, .158]	0.974	.051
Anger-trait	4.826 (5)	.437	.000	[.000, .135]	1.000	.041
Temperament	7.652 (5)	.176	.072	[.000, .168]	0.961	.073
Reaction	5.435 (5)	.365	.029	[.000, .143]	0.996	.052
Anger-expression	1.626 (5)	.203	.079	[.000, 199]	0.990	.027
Anger-in	5.846 (5)	.321	.045	[.000, .195]	0.988	.053
Anger-out	8.232 (5)	.143	.080	[.000, .173]	0.960	.048
Anger-control	3.230 (5)	.664	.000	[.000, .109]	1.000	.032
External shame	8.529 (5)	.129	.083	[.000, .176]	0.971	.061
Paranoia	7.614 (5)	.178	.072	[.000, .245]	0.959	.059
Conditional model with condition as predictor						
Anger-state	10.355 (7)	.169	.048	[.000, .105]	0.957	.041
Anger-trait	4.639 (7)	.703	.000	[.000, .064]	1.000	.039
Temperament	9.129 (7)	.243	.038	[.000, .098]	0.988	.062
Reaction	4.990 (7)	.661	.000	[.000, .068]	1.000	.026
Anger-expression	5.742 (7)	.332	.037	[.000, .125]	0.994	.028
Anger-in	13.462 (7)	.061	.066	[.000, .124]	0.971	.036
Anger-out	10.018 (7)	.187	.045	[.000, .103]	0.983	.041
Anger-control	5.849 (7)	.557	.000	[.000, .076]	1.000	.031
External shame	13.698 (7)	.056	.068	[.000, .123]	0.970	.035
Paranoia	10.531 (7)	.160	.049	[.000, .121]	0.984	.048

Note: RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root-mean square residual; TG = treatment group; CG = control group; df = degrees of freedom; CI = confidence interval.

Table 5. Conditional Model with Condition as Predictor of the Initial Level (Intercept) and Rate of Change (Slope) in Anger, Shame, and Paranoia.

	Intercept		Slope	
	B	p	B	P
Anger-state	−0.05	.930	−0.41	.045
Anger-trait	−0.10	.880	−1.34	<.001
Temperament	0.20	.513	−0.54	<.001
Reaction	−0.27	.411	−0.52	<.001
Anger-expression	−0.54	.694	−3.49	<.001
Anger-in	−0.28	.419	−0.72	.001
Anger-out	0.59	.299	−1.40	<.001
Anger-control	−0.16	.834	1.46	<.001
External shame	1.58	.223	−3.36	<.001
Paranoia	1.03	.497	−4.07	<.001

the linear trend was included in the following models, which presented good fit indices to the data (see Table 4).

The average intercept was significant for all the outcome measures, indicating that the mean at baseline was significantly different from zero. Individual differences around the mean of the outcome measures at baseline were found, as indicated by the significant intercept factor variances. Regarding change over time, and for anger-expression, anger-out, and external shame, results showed that scores on these variables increased over time. The observed effect sizes were medium. The average slope was also significant for anger-control. Nonetheless, scores on this variable decreased over time, and the effect size was medium. For the remaining variables, the average slopes were nonsignificant, suggesting no change over time. Additionally, the average variances of the slope were significant, indicating individual variation around the mean of the growth trajectories (see Appendix C).

Conditional models with group as a predictor of the growth factors. The conditional models with group (control vs. treatment) as a predictor of the growth factors provided good fit indices to the observed data (see Table 4).

As presented in Table 5, condition did not predict variation in the intercept, indicating that the groups did not differ in self-reported anger, shame, and paranoia at baseline. In regard to the slope factor, condition was a significant predictor of change over time observed in all outcome measures. Concerning anger control, treatment participants showed a greater increase (of 1.45 units) over time than the control group, as indicated by the B

positive value. For the other dimensions of anger, the treatment group presented always a greater decrease than the control group, as indicated by the B negative values. The same tendency of results was found for external shame and paranoia, with treatment participants presenting a greater decrease over time than the control group (of 3.36 and 4.07 units, respectively).

Conditional models with GPS completion as predictor of the rate of change in the treatment group. Conditional models with GPS completion (i.e., ≤ 32 sessions vs. ≥ 32 sessions) as predictor of the rate of change in anger, shame, and paranoia were also analyzed in the treatment group. As previously specified, participants who completed at least 32 sessions were considered completers. In turn, participants who attend less than 32 sessions were considered noncompleters.

Results showed that GPS completion was a significant predictor of change over time observed in the outcome measures. Specifically, completers showed a greater increase in anger-control ($B = 1.12$, $p = .008$), when compared with noncompleters. Completers also showed a greater decrease in anger-state ($B = -0.58$, $p < .001$), anger-trait ($B = -0.58$, $p < .001$), temperament ($B = -0.72$, $p < .001$), reaction ($B = -0.68$, $p < .001$), anger-expression ($B = -3.99$, $p < .001$), anger-in ($B = -0.94$, $p < .001$), and anger-out ($B = -1.79$, $p < .001$) than noncompleters. Finally, completers showed a greater decrease in external shame ($B = -4.46$, $p < .001$) and paranoia ($B = -5.02$, $p < .001$), when compared with noncompleters.

Intervention Effects in Anger, Shame, and Paranoia in Accordance with the Per-protocol Approach

In addition to the intent-to-treat analysis, latent growth curve unconditional and conditional models were carried out in accordance with the per-protocol approach in order to assess treatment effects in the participants who fulfilled the protocol.

No significant differences were found between treatment and control completers on demographic and criminal features as well as on the outcome measures at the onset of the study (all $p > .05$).

Unconditional models in the treatment group. Concerning the rate of change observed in anger outcomes, results showed, on one hand, that anger-control increased over time ($S = 0.61$, $p < .001$) and, on the other hand, anger-state ($S = -0.48$, $p < .001$), anger-trait ($S = -0.93$, $p < .001$),

temperament ($S = -0.34, p < .001$), reaction ($S = -0.45, p < .001$), anger-expression ($S = -2.12, p < .001$), anger-in ($S = -0.74, p < .001$), and anger-out ($S = -0.65, p < .001$) decreased over time in treatment participants who fulfilled the protocol. Results also showed that external shame ($S = -2.48, p < .001$) and paranoia ($S = -3.81, p < .001$) decreased over time.

Unconditional models in the control group. Results pointed out to nonsignificant increases in anger-state ($S = 0.22, p = .198$) and anger-in ($S = 0.05, p = .754$) in controls who fulfilled the protocol. For the anger-control, participants showed a significant decrease over time ($S = -0.92, p < .001$). For the remaining variables, participants showed a significant increase over time, namely, anger-trait ($S = 0.57, p = .003$), temperament ($S = 0.23, p = .017$), reaction ($S = 0.18, p = .033$), anger-expression ($S = 1.72, p < .001$), anger-out ($S = 0.80, p < .001$), external shame ($S = 1.24, p < .001$), and paranoia ($S = 1.00, p < .041$).

Conditional models with group as a predictor of the growth factors. Results showed that condition was a significant predictor of change over time observed in all the outcome measures. When compared with the control group, the treatment group showed not only a greater increase in anger-control ($B = 1.53, p < .001$) but also a greater decrease in anger-state ($B = -0.63, p = .003$), anger-trait ($B = -1.53, p < .001$), temperament ($B = -0.56, p < .001$), reaction ($B = -0.64, p < .001$), anger-expression ($B = -3.90, p < .001$), anger-in ($B = -0.85, p < .001$), anger-out ($B = -1.44, p < .001$), external shame ($B = -3.74, p < .001$), and paranoia ($B = -4.84, p < .001$) over time.

Conditional models with GPS completion as predictor of the rate of change in the treatment group. Results showed that GPS completion was a significant predictor of change over time observed in the outcome measures. The completers showed a greater increase in anger-control ($B = 1.83, p < .001$) and a greater decrease in the remaining variables, namely, anger-state ($B = -0.31, p = .003$), anger-trait ($B = -1.34, p < .001$), temperament ($B = -0.60, p < .001$), reaction ($B = -0.45, p < .001$), anger-expression ($B = -2.33, p < .001$), anger-in ($B = -0.58, p < .001$), anger-out ($B = -1.22, p < .001$), external shame ($B = -3.71, p < .001$), and paranoia ($B = -3.44, p < .001$).

Discussion

While the majority of the research on the efficacy of cognitive-behavioral programs for offender rehabilitation focuses mainly on recidivism reduction

as the main outcome, a recent trend (e.g., Antonio and Crossett 2017; Skeem et al. 2009) focuses on change in cognitive and emotional correlates of antisocial behavior. Following this tendency, this randomized controlled trial studied the impact of a 40-session cognitive-behavioral group program, GPS (Rijo et al. 2007), in producing significant change in cognitive and emotional variables, which, from an evolutionary perspective, are conceptualized as relevant variables related with aggressiveness and antisocial behavior (Elison et al. 2014; Gilbert 2009, 2010, 2014, 2017; Gold et al. 2011; Koltz and Gilbert 2018; Velotti et al. 2014). Specifically, it was assessed whether offenders who participated in GPS showed change in anger, shame, and paranoia, when compared with the controls. It was also examined the extent to which any improvements were maintained for 12 months after treatment. The association between GPS completion and change over time was also analyzed in order to investigate whether participants who completed the GPS sessions presented higher improvements in anger, shame, and paranoia than noncompleters.

The flow of inmates' participation showed that most of the inmates randomized to GPS (70.8 percent) completed the intervention (32 or more sessions). Only a small number of inmates (14.0 percent) dropped out the program. These data suggested that GPS's length and methodology may account for the favorable program retention. Losses observed in follow-up assessments in the treatment group were mainly due to external variables (such as transference to another prison and/or parole), that researchers could not overcome. The same occurred in the control group, although a considerable percentage of inmates from this group refused to complete subsequent assessments (namely between mid and follow-up assessments). Nonetheless, and in accordance with the CONSORT guidelines (Moher et al. 2010), an intent-to-treat analysis was followed and all participants (including the noncompleters from both groups) were considered in the subsequent analyses, thus overcoming selection bias into the findings. Additionally, analyses were carried out in accordance with the per-protocol approach, in order to assess treatment effects in the participants who fulfilled the protocol.

The treatment and control group were compared on demographic and criminal characteristics, as well as in the outcome measures at baseline, and no significant differences were found. This result sustains that randomization was successful, allowing for reliable conclusions on the predictor effect of condition in the decrease of anger, shame, and paranoia over time.

Results from LGCM (in accordance with both intention-to-treat and per-protocol approaches) showed that condition was a significant predictor of

change over time observed in all outcome measures, with the treatment group presenting a significant reduction in anger, shame, and paranoia, when compared with the control group. Moreover, treatment effects were maintained 12 months after GPS (while participants were still incarcerated), suggesting that those who participated in the program continued to use and consolidate the strategies learned along the intervention.

In a closer look, and concerning anger main factors—anger-state, anger-trait, and anger-expression—the treatment group presented a significant decrease over time. The same tendency was observed for anger-trait sub-scales—temperament and reaction—and for the anger-expression sub-scales—anger-in and anger-out. For the anger-control subscale, the treatment group showed a significant increase over time. The specific work done in the GPS's module 4, Function and Meaning of Emotions, may have played an important role in the changes observed in the treatment group. The main goal of this module was emotion regulation, and participants were encouraged to trigger basic emotions (including anger), to feel them in their body and relate them with real-life scenarios. By learning about the feelings and the expression of emotions, participants were invited to discover the usefulness and the diversity of the emotional states that humans can experience. Finally, participants were challenged to assess the adequacy and usefulness of their own emotional experiences (Brazão et al. 2013; Brazão et al. 2015a; Rijo et al. 2007). We hypothesized that awareness and understanding about the function and meaning of emotions would promote emotion regulation, thus decreasing the severity and frequency of anger feelings and, consequently, increasing anger control.

In the control group, results pointed out to no significant changes in anger-state and anger-trait, temperament, reaction, and anger-in. For anger-expression and anger-out, controls showed a significant increase over time, and for anger-control, these same individuals presented a significant decrease over time. It is worth noting that the dimensions assessing the externalization of anger seemed to get worse over time in prison inmates not receiving the GPS treatment. These findings raise important questions about the impact of incarceration on inmates' psychological and emotional functioning. The deterioration observed in controls (in anger-expression, anger-out, and anger-control) over a two-year period raises the question of whether traditional prison practices work toward rehabilitation or may be bolstering psychological and emotional processes related to maladaptive behavior (Ashkar and Kenny 2008; Constantine et al. 2012; Lambie and Randell 2013; Morgan et al. 2012). The traditional penitentiary interventions usually delivered in Portuguese prisons may not be effective enough to

promote change at this level (Brazão et al. 2015a, 2015b). From this point of view, outcomes in inmates who completed GPS may indicate that such a program can be useful in buffering a tendency to get worse over time.

LGCM also pointed out to a significant decrease of external shame and paranoia over time in the treatment group. In contrast, the control group showed no change over time in these same variables. According to the GPS theoretical assumptions, by the end of the program, participants should be able to look at themselves in a more valuable and healthy manner (Brazão et al. 2013; Rijo et al. 2007), thus decreasing the severity and intensity of shame feelings. Considering the results on the association between external shame and paranoia found by Castilho and colleagues (2015), a decrease in shame should also be accompanied by a decrease in paranoid ideation. A similar decrease in anger would also be expected, as anger could be conceptualized as a defensive strategy to cope with shame (Beck 1999; Gilbert et al. 2005; Ribeiro da Silva et al. 2015; Rijo et al. 2017; Shanahan et al. 2014; Thomaes et al. 2011).

The decrease in paranoia observed in the treatment group may also be attributed to the fact that GPS works toward changing participants' distorted view of the others in several different manners: (1) by recognizing the subjectivity of information processing in interpersonal contexts; (2) by recognizing the frequent misattribution of others' behavior toward us, thus becoming conscious of cognitive distortions underlying the attribution of meaning to interpersonal behaviors, and (3) by changing core cognitive structures, namely, those related to a distorted view of others as malevolent and/or abusive (Brazão et al. 2013; Brazão et al. 2015b; Rijo et al. 2007). Change at this level may lead the individual to reduce paranoid ideation through the development of less distorted or more realistic social information processing.

Finally, analyses on GPS completion as predictor of change over time in the treatment group showed that completers (i.e., participants who completed at least 32 sessions) presented a greater decrease in anger, shame, and paranoia, when compared with noncompleters (i.e., participants who attended less than 32 sessions). These findings stress the need for facilitators to engage inmates with the full treatment in order to optimize the GPS's effects. This issue is especially relevant, taking into account that research has shown that noncompleters reoffend at a higher rate than treatment completers (Bennett et al. 2007; Kroner and Takahashi 2012; Prendergast et al. 2004).

Overall, this study confirms and extends previous findings from a former pilot study and showed that a structured cognitive-behavioral group

program, such as the GPS, can produce significant changes in anger, shame, and paranoia in male prison inmates, which have been systematically associated with criminal and violent behavior, disciplinary infractions, recidivism risk, and reoffending (Andrews 1996; Andrews and Bonta 2010; Chereji et al. 2012; Cornel et al. 1999; Hosser et al. 2008; Marsee and Frick 2007; Novaco and Taylor 2004; Thomaes et al. 2008). Taking into account these findings, results in the current study may suggest that the GPS treatment could have a positive effect in crime and delinquency, namely, in criminal career desistance, by producing changes in cognitive and emotional correlates of antisocial behavior that may predispose individuals to criminal behavior and reoffending (Andrews 1996; Andrews and Bonta 2010). Moreover, by reducing anger, shame, and paranoia, GPS may facilitate inmate's adhesion to further treatment efforts, aiming to modify criminogenic needs in accordance with the RNR model (Andrews and Bonta 2010). In this sense, GPS may be used in forensic settings as a first choice cognitive-behavioral program and/or combined with other treatments that directly address criminogenic needs. In fact, the GPS is used in Portuguese prisons as a universal delivery program, with inmates receiving the program a few months after prison intake. Offenders with specific criminogenic needs receive other structured interventions (addressing those same needs) after GPS completion.

It is important to add that the effects of the GPS in the reduction of criminal recidivism rates were not analyzed in this study. The positive effects of a rehabilitation program over recidivism rates are usually presented as a major requirement for the selection of effective intervention practices (e.g., McGuire 2011, 2013). In this sense, it seems of the utmost importance to test whether the positive changes in anger, shame, and paranoia result in a significant reduction of reoffending, thus contributing to criminal career desistance.

Generalization should also be made carefully because all the participants included in this study were male prison inmates. As previously specified, female prison inmates were excluded from the current study due to their small numbers. Nonetheless, and in order to assess the generalizability of the program, future GPS efficacy studies should be carried out with female offenders. Future studies are also needed with other type of offenders (e.g., juvenile offenders) and settings (e.g., community-based interventions). Multigroup invariance LGCM tests could, then, be conducted in order to assess the predictive effect of sex (male vs. female), age (juvenile vs. adult offender), and setting (institution vs. community) on the GPS's efficacy, which will allow for reliable conclusions on the program's generalizability.

Taking into account that the current sample was mainly involved in acquisitive offending, it seems relevant to test the GPS effects in violent and persistent offenders, while accounting for the risk profile of the sample (low, moderate, or high risk). The program's impact on behavioral change (e.g., in the reduction of disciplinary incidents and prison records) should also be tested in further research to ascertain if changes observed in cognitive and emotional variables are reflected in a more adjusted behavioral pattern.

Our results were based on self-report measures and the use of other assessment methods (for instance, clinical interviews focused on shame and anger feelings, as well as in paranoid ideation) should be included in future works. Taking into account the individual variability observed in the outcome measures over time in the current study, future research should test for relevant variables that could explain this variability. Personality disorders, which are well-known to be highly prevalent among male prison inmates (e.g., Brazão et al. 2015c), should be tested as predictors or moderators of treatment effects in the outcome measures. In the current study, the integrity of GPS delivery was assured by training and supervising all psychologists who run the program. In future studies, more systematic quality control procedures of the program's delivery should be implemented.

This randomized controlled trial provided support for the efficacy of GPS in producing changes in cognitive and emotional correlates of antisocial and aggressive behavior. Findings from this study are encouraging for future research, not only for future efficacy studies of the GPS but also for the development of other interventions based on the manipulation of anger, shame, and paranoia as targets of change in offenders.

Appendix A

Latent Growth Curve Model for One Outcome Measure Measured on the Four Timepoints with Condition as Predictor.
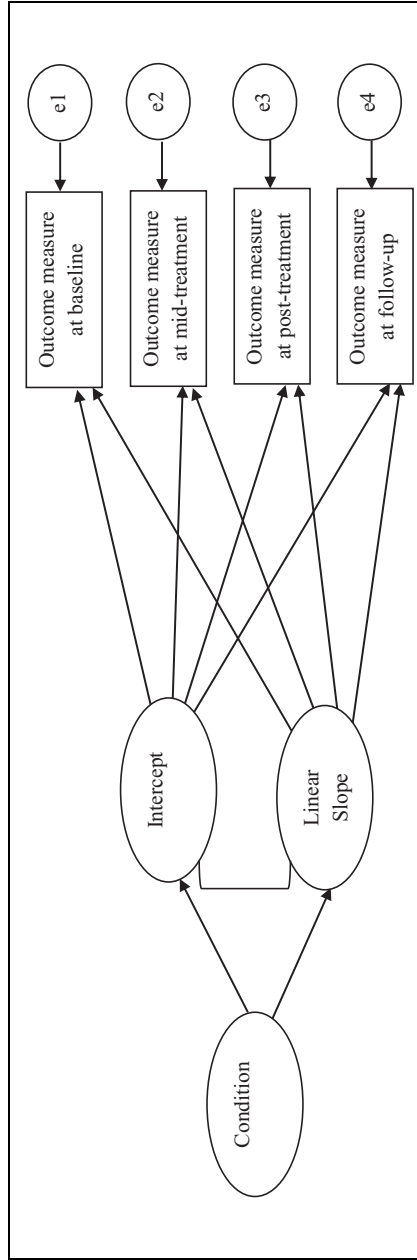
Note: The factor loadings for the intercept were set to 1, and the factor loadings for the linear slope were fixed to 0 at baseline, 1 at midtreatment, 2 at posttreatment, and 4 at follow-up. Condition was coded as 0 = control group and 1 = treatment group.

Appendix B

Unconditional Model of the Initial Status (Intercept) and the Rate of Change (Slope) in Anger, Shame, and Paranoia in the Treatment Group.

	T1 M (SD)	T2 M (SD)	T3 M (SD)	T4 M (SD)	T1–T4 Cohen's d	Intercept	Slope	Intercept (V)	Slope (V)	Intercept With Slope
Anger-state	12.89 (4.20)	12.54 (4.18)	11.61 (3.09)	11.30 (4.70)	0.35	12.86***	−0.46**	8.63**	0.58ns	−.16ns
Anger-trait	18.44 (5.48)	17.56 (5.10)	16.04 (4.78)	13.92 (3.65)	0.97	18.39***	−0.97***	16.03***	1.02***	−.86**
Temperament	6.86 (2.54)	6.63 (2.46)	6.00 (2.08)	5.20 (1.52)	0.79	6.88***	−0.37***	3.85***	0.19***	−.54***
Reaction	7.98 (2.54)	7.65 (2.41)	6.94 (2.53)	6.07 (2.07)	0.82	8.00***	−0.43***	2.91***	0.29**	−.28ns
Anger-expression	24.20 (10.40)	22.55 (9.05)	20.71 (10.32)	15.27 (7.80)	0.97	24.60***	−2.12***	4.11***	6.81***	−.78***
Anger-in	16.94 (4.11)	15.60 (3.84)	15.10 (4.46)	13.30 (3.71)	0.92	16.68***	−0.75***	8.42***	1.38***	−.33**
Anger-out	14.42 (4.60)	13.97 (3.65)	12.98 (3.45)	11.43 (2.47)	0.80	14.52***	−0.69***	7.98***	0.81**	−.29**
Anger-control	23.16 (5.69)	23.01 (5.78)	23.38 (7.33)	26.46 (5.10)	0.61	22.84***	0.58**	12.41***	2.64**	−.52**
External shame	24.49 (9.88)	20.92 (10.27)	19.80 (11.13)	14.02 (10.01)	1.05	24.10***	−2.37***	13.68***	9.28***	−.84***
Paranoia	50.62 (10.61)	46.44 (10.95)	43.73 (10.80)	35.13 (11.76)	1.38	50.53***	−3.60***	13.92***	8.74***	−.17ns

Note: ns = nonsignificant.
**$p < .05$. ***$p < .001$.

Appendix C

Unconditional Model of the Initial Level (Intercept) and Rate of Change (Slope) in Anger, Shame, and Paranoia in the Control Group.

	T1 M (SD)	T2 M (SD)	T3 M (SD)	T4 M (SD)	T1–T4 Cohen's d	Intercept	Slope	Intercept (V)	Slope (V)	Intercept With Slope
Anger-state	13.03 (5.05)	12.40 (4.65)	13.22 (5.30)	13.23 (5.77)	.03	12.76***	0.09ns	9.42**	1.50**	−.01ns
Anger-trait	18.71 (5.89)	18.54 (5.91)	19.21 (6.80)	20.35 (6.96)	.25	18.51***	0.37**	13.07***	2.51**	−.11ns
Temperament	6.68 (2.42)	6.70 (2.41)	7.14 (3.04)	7.46 (3.30)	.26	6.65***	0.18ns	2.88**	0.59**	−.26ns
Reaction	8.35 (2.48)	8.29 (2.99)	8.30 (2.90)	8.83 (3.17)	.16	8.28***	0.08ns	5.47***	0.48**	−.46ns
Anger-expression	25.39 (10.20)	25.88 (10.26)	27.56 (13.08)	31.94 (14.94)	.51	25.17***	1.40**	15.22***	13.02***	−.57**
Anger-in	18.26 (4.36)	17.66 (4.64)	17.82 (5.35)	18.35 (5.60)	.01	18.12***	0.09ns	3.44***	2.03***	−.22**
Anger-out	13.42 (4.82)	14.68 (4.85)	15.41 (5.46)	16.88 (6.20)	.63	13.82***	0.75***	5.43**	2.06**	−.18**
Anger-control	22.69 (5.91)	22.46 (5.88)	21.67 (6.06)	19.29 (6.38)	.55	22.97***	−0.86***	12.61***	2.10**	−.42**
External shame	22.80 (10.22)	22.85 (11.73)	25.00 (17.62)	27.65 (13.27)	.40	22.54***	0.97***	12.36***	10.07**	−.08ns
Paranoia	50.05 (12.37)	49.13 (13.84)	49.56 (16.05)	53.17 (14.91)	.22	49.62***	0.42ns	11.05***	8.30***	−.85**

Note: ns = nonsignificant.
**$p < .05$. ***$p < .001$.

Declaration of Conflicting Interests

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Notes

1. The rate of missing values at midtreatment was 16.9 percent, at posttreatment was 26.8 percent, and at follow-up was 46.5 percent.
2. Socioeconomic status (SES) was measured by inmates' profession, considering the Portuguese professions classification (Instituto Nacional de Estatística 2011). Examples of professions in the high SES group are judges, higher education professors, or MDs; in the medium SES group are nurses, psychologists, or schoolteachers; and in the low SES group are farmers, cleaning staff, or undifferentiated workers.
3. Inmates convicted for the first time.
4. Crimes against property include robbery, theft, and qualified theft; Crimes against people include simple and aggravated assault, intimidation, kidnapping, attempted homicide, and homicide; and crimes against the state include counterfeiting and forgery of documents.

References

Abram, K. M., L. A. Teplin, D. R. Charles, S. L. Longworth, G. M. McClelland, and M. K. Dulcan. 2004. "Posttraumatic Stress Disorder and Trauma in Youth in Juvenile Detention." *Archives of General Psychiatry* 61:403-10.

Allan, S., P. Gilbert, and K. Goss. 1994. "An Exploration of Shame Measures: Psychopathology." *Personality and Individual Differences* 17:719-22.

Andrews, D. A. 1996. "Recidivism is Predictable and Can be Influenced: An Update." *Forum of Corrections Research* 8:42-44.

Andrews, D. A. and J. Bonta. 2010. *The Psychology of Criminal Conduct*. Newark, NJ: LexisNexis/Matthew Bender.

Andrews, D. A., J. Bonta, and S. Wormith. 2011. "The Risk-need-responsivity (RNR) Model: Does Adding the Good Lives Model Contribute to Effective Crime Prevention?" *Criminal, Justice and Behavior* 38:735-55.

Antonio, M. E. and A. Crosset. 2017. "Evaluating the Effectiveness of the National Curriculum and Training Institute's "Cognitive Life Skills" Program among Parolees Supervised by Pennsylvania's Board of Probation & Parole." *American Journal of Criminal Justice* 42:514-32.

Ashkar, P. J. and D. T. Kenny. 2008. "Young Offenders' Subjective Experiences of Incarceration." *International Journal of Offender Therapy and Comparative Criminology* 52:584-97.

Barreto Carvalho, C., M. Sousa, C. da Motta, J. Pinto-Gouveia, S. N. Caldeira, E. B. Peixoto, J. Cabral, and A. Fenigstein. 2015. "Paranoia in the General Population: A Revised Version of the General Paranoia Scale for Adults." *Clinical Psychologist* 21:125-34.

Bear, G. G., X. Urbe-Zarain, M. A. Manning, and K. Shiomi. 2009. "Shame, Guilt, Blaming, and Anger: Differences between Children in Japan and the US." *Motivation and Emotion* 33:229-38.

Beck, A. T. 1999. *Prisoners of Hate: The Cognitive Basis of Anger, Hostility and Violence*. New York: Harper Collins.

Bennett, L. W., C. Stoops, C. Call, and H. Flett. 2007. "Program Completion and Re-arrest in a Batterer Intervention System." *Research on Social Work Practice* 17:42-54.

Brazão, N., C. da Motta, and D. Rijo. 2013. "From Multimodal Programs to a New Cognitive-interpersonal Approach in the Rehabilitation of Offenders." *Aggression and Violent Behavior* 18:636-43.

Brazão, N., C. da Motta, D. Rijo, M. C. Salvador, J. Pinto-Gouveia, and J. Ramos. 2015a. "Clinical Change in Anger, Shame and Paranoia after a Structured Cognitive-behavioral Group Program: Early Findings from a Randomized Trial with Male Prison Inmates." *Journal of Experimental Criminology* 11: 217-37.

Brazão, N., C. da Motta, D. Rijo, M. C. Salvador, J. Pinto-Gouveia, and J. Ramos. 2015b. "Clinical Change in Cognitive Distortions and Core Schemas after a Cognitive-behavioral Group Intervention: Preliminary Findings from a Randomized Trial with Male Prison Inmates." *Cognitive Therapy and Research* 39: 578-89.

Brazão, N., C. da Motta, D. Rijo, and J. Pinto-Gouveia. 2015c. "The Prevalence of Personality Disorders in Portuguese Male Prison Inmates: Implications for the Penitentiary Treatment." *Análise Psicológica* 3:279-90.

Bonta, J., G. Bourgon, T. Rugge, T. L. Scott, A. K. Yessine, L. Gutierrez, and J. Li. 2011. "Community Supervision: An Experimental Demonstration of Training Probation Officers in Evidence-based Practice." *Criminal Justice and Behavior* 38:1127-48.

Calvete, E. 2008. "Justification of Violence and Grandiosity Schemas as Predictors of Antisocial Behavior in Adolescents." *Journal of Abnormal Child Psychology* 36:1083-95.

Castilho, P., A. Xavier, J. Pinto-Gouveia, and T. Costa. 2015. "When the "Threat System" is Switched On: The Impact of Anger and Shame on Paranoia." *Revista de Psicopatología y Psicología Clínica* 20:199-208.

Chakhssi, F., D. P. Bernstein, and C. de Ruiter. 2012. "Early Maladaptive Schemas in Relation to Facets of Psychopathy and Institutional Violence in Offenders with Personality Disorders." *Legal and Criminological Psychology* 18:1-17.

Chereji, S. V., S. Pintea, and D. David. 2012. "The Relationship of Anger and Cognitive Distortions with Violence in Violent Offenders' Population: A Meta-analytic Review." *The European Journal of Psychology Applied to Legal Context* 4:1-98.

Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences*. Mahwah, NJ: Lawrence Erlbaum.

Constantine, R. J., J. Robst, R. Ander, and G. Teague. 2012. "The Impact of Mental Health Services on Arrests of Offenders with a Serious Mental Illness." *Law and Human Behavior* 36:170-76.

Cornel, D. G., C. S. Peterson, and H. Richards. 1999. "Anger as Predictor of Aggression among Incarcerated Adolescents." *Journal of Consulting and Clinical Psychology* 67:108-15.

Cullen, A. E., A. Y. Clarke, E. Kuipers, S. Hodgins, K. Dean, and T. Fahy. 2012. "A Multi-site Randomized Controlled Trial of a Cognitive Skills Program for Male Mentally Disordered Offenders: Social-cognitive Outcomes." *Psychological Medicine* 42:557-69.

Curran, P. J., K. Obeidat, and D. Losardo. 2010. "Twelve Frequently Questions Asked about Growth Curve Modeling." *Journal of Cognition and Development* 11:121-36.

De la Rubia, J. M. 2014. "Dimensiones Psicopatológicas De Las Escalas Clínicas Del MMPI-2" (Psychopathological Dimensions of the Clinical Scales of MMPI-2) [In Spanish]. *Revista de Psicopatología y Psicología Clínica* 19: 45-62.

Duncan, T. E. and S. C. Duncan. 1995. "Modeling the Process of Development via Latent Variable Growth Curve Methodology." *Structural Equation Modeling: A Multidisciplinary Journal* 2:187-213.

Duncan, T. E. and S. C. Duncan. 2009. "The ABC's of LGM: An Introductory Guide to Latent Variable Growth Curve Modeling." *Social and Personality Psychology Compass* 3:979-91.

Elison, J., C. Garofalo, and P. Velotti. 2014. "Shame and Aggression: Theoretical Considerations." *Aggression and Violent Behavior* 19:447-53.

Farmer, E. and B. Andrews. 2009. "Shameless Yet Angry: Shame and Its Relationship to Anger in Male Young Offenders and Undergraduate Controls." *The Journal of Forensic Psychiatry & Psychology* 20:48-65.

Fenigstein, A. and P. Vanable. 1992. "Paranoia and Self-consciousness." *Journal of Personality and Social Psychology* 62:129-38.

Gilbert, F. and M. Daffern. 2013. "The Association between Early Maladaptive Schema and Personality Disorder Traits in an Offender Population." *Psychology, Crime & Law* 19:933-46.

Gilbert, P. 2009. "Introduction to Compassion Focused Therapy." *Advances in Psychiatric Treatment* 5:199-208.

Gilbert, P. 2010. *Compassion Focused Therapy*. New York: Routledge.

Gilbert, P. 2014. "The Origins and Nature of Compassion Focused Therapy." *British Journal of Clinical Psychology* 53:6-41.

Gilbert, P. 2017. "Compassion Focused Therapy in Forensic Settings." Pp. 60-80 in *Individual Psychological Therapies in Forensic Settings*, edited by J. Davies and C. Nagi. New York: Routledge.

Gilbert, P., M. Boxall, M. Cheung, and C. Irons. 2005. "The Relationship of Paranoid Ideation and Social Anxiety in a Mixed Clinical Population." *Clinical Psychology and Psychotherapy* 12:124-33.

Gilbert, P., K. McEwan, C. Irons, C. Broomhead, R. Bellew, A. Mills, and C. Gale. 2009. "The Dark Side of Competition: How Competitive Behaviour and Striving to Avoid Inferiority are Linked to Depression, Anxiety, Stress and Self-harm." *Psychology and Psychotherapy: Theory, Research and Practice* 82:123-36.

Gold, J., M. W. Sullivan, and M. Lewis. 2011. "The Relation between Abuse and Violent Delinquency: The Conversion of Shame to Blame in Juvenile Offenders." *Child Abuse & Neglect* 35:459-67.

Goss, K., P. Gilbert, and S. Allan. 1994. "An Exploration of Shame Measures: The "Other as Shamer Scale." *Personality and Individual Differences* 17:713-17.

Hesser, H. 2015. "Modeling Individual Differences in Randomized Experiments Using Growth Models: Recommendations for Design, Statistical Analysis and Reporting of Results of Internet Interventions." *Internet interventions* 2:110-20.

Hosser, D., M. Windzio, and W. Greve. 2008. "Guilt and Shame as Predictors of Recidivism: A Longitudinal Study with Young Prisoners." *Criminal Justice and Behavior* 35:138-52.

Hu, L. and P. M. Bentler. 1999. "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives." *Structural Equation Modeling: A Multidisciplinary Journal* 6:1-55.

Instituto Nacional de Estatística. 2011. *Classificação Portuguesa Das Profissões 2010* (2010 Portuguese Classification of Professions) [In Portuguese]. Lisboa, Portugal: Instituto Nacional de Estatística.

Jacobson, N. S. and P. Truax. 1991. "Clinical Significance: A Statistical Approach to Defining Meaningful Change in Psychotherapy Research." *Journal of Consulting and Clinical Psychology* 39:12-19.

Jones, C. M. 2014. "Why Persistent Offenders Cannot be Shamed into Behaving." *Journal of Offender Rehabilitation* 55:153-70.

Joyce, C. L., J. Dillane, and E. A. Vasquez. 2013. "The Role of Anger in Offending: A Grounded Theory Analysis of Mentally Disordered Patients." *The Journal of Forensic Psychiatry & Psychology* 24:247-68.

Kline, R. B. 2005. *Principles and Practice of Structural Equation Modeling*. New York: Guilford Press.

Koehler, J. A., F. Lösel, T. D. Akoensi, and D. K. Humphreys. 2013. "A Systematic Review and Meta-analysis on the Effects of Young Offender Treatment Programs in Europe." *Journal of Experimental Criminology* 9:19-43.

Koltz, R. and P. Gilbert. 2018. "Understanding and Using Compassion-focused Therapy in Forensic Settings." Pp. 725-254 in *The Wiley Blackwell Handbook of Forensic Neuroscience*, edited by A. R. Beech, A. J. Carter, R. E. Mann, and P. Rotshtein. Boston, MA: Blackwell.

Kroner, D. G. and M. Takahashi. 2012. "Every Sessions Count: The Differential Impact of Previous Programmes and Current Programme Dosage on Offender Recidivism." *Legal and Criminological Psychology* 17:136-50.

Lambie, I. and I. Randell. 2013. "The Impact of Incarceration on Juvenile Offenders." *Clinical Psychology Review* 33:448-59.

Lobbestael, J., A. Arntz, M. Cima, and F. Chakhssi. 2009. "Effects of Induced Anger in Patients with Antisocial Personality Disorder." *Psychological Medicine* 39:5557-68.

Lopes, P. and J. Pinto-Gouveia, 2005. The Portuguese version of the Paranoia Scale. Unpublished manuscript.

Malmberg, M., M. Kleinjan, G. Overbeek, A. Vermulst, J. Lammers, K. Monshouwer, W. A. Vollebergh, and R. Engels. 2015. "Substance Use Outcomes in the Healthy School and Drugs Program: Results from a Latent Growth Curve Approach." *Addictive Behaviors* 42:194-202.

Marsee, M. A. and P. J. Frick. 2007. "Exploring the Cognitive and Emotional Correlates to Proactive and Reactive Aggression in a Sample of Detained Girls." *Journal of Abnormal Child Psychology* 35:969-81.

Martinson, R. 1974. "What Works?—Questions and Answers about Prison Reform." *The Public Interest* 10:22-54.

Matos, M. and J. Pinto-Gouveia. 2010. "Shame as a Traumatic Memory." *Clinical Psychology & Psychotherapy* 312:299-312.

Matos, M., J. Pinto-Gouveia, and J. Duarte. 2011. The Portuguese version of the Other as Shamer Scale. Unpublished manuscript.

Matos, M., J. Pinto-Gouveia, and P. Gilbert. 2013. "The Effect of Shame and Shame Memories on Paranoid Ideation and Social Anxiety." *Clinical Psychology and Psychotherapy* 20:334-49.

McGuire, J. 2011. "Reducing Recidivism of Adult Offenders: A Review of Methods and Outcomes." *Ousar Integrar—Revista de Reinserção Social e Prova* [In Portuguese] 8:9-25.

McGuire, J. 2013. "'What Works' to Reduce Re-offending: 18 Years On." Pp. 20-49 in *What Works in Offender Rehabilitation: An Evidence-based Approach to Assessment and Treatment*, edited by L. A. Craig, L. Dixon, and T. A. Gannon. Chichester, England: Wiley-Blackwell.

Moher, D., S. Hopewell, K. F. Schulz, V. Montori, P. C. Gotzsche, P. J. Devereaux, D. Elbourne, M. Egger, and D. G. Altman. 2010. "CONSORT 2010 Explanation and Elaboration: Updated Guidelines for Reporting Parallel Group Randomised Trials." *BMJ* 340:698-702.

Morgan, R. D., D. B. Flora, D. G. Kroner, J. F. Mills, F. Varghese, and J. S. Steffan. 2012. "Treating Offenders with Mental Illness: A Research Synthesis." *Law and Human Behavior* 36:37-50.

Muthén, B. O. 1997. "Latent Variable Modeling with Longitudinal and Multi-level Data." Pp. 453-480 in *Sociological Data*, edited by A Raferty. Boston, MA: Blackwell.

Muthén, L. K. and B. O. Muthén. 2010. *Mplus User's Guide*. 6th ed. Los Angeles, CA: Muthén & Muthén.

Novaco, R. W. 2010. "Anger and Psychopathology." Pp. 465-497 in *International Handbook of Anger*, edited by M. Potegal, G. Stemmler, and C. Spielberger. New York: Springer.

Novaco, R. W. and J. L. Taylor. 2004. "Assessment of Anger and Aggression in Male Offenders with Developmental Disabilities." *Psychological Assessment* 16:115-24.

Owen, T. and S. Fox. 2011. "Experiences of Shame and Empathy in Violent and Non-violent Young Offenders." *The Journal of Forensic Psychiatry & Psychology* 22:551-63.

Prendergast, M. L., E. A. Hall, H. K. Wexler, G. Melnick, and Y. Cao. 2004. "Amity Prison-based Therapeutic Community: 5-year Outcomes." *Prison Journal* 84: 36-60.

Rafaeli, E., D. P. Bernstein, and J. Young. 2011. *Schema Therapy: Distinctive Features*. New York: Routledge.

Raynor, P., P. Ugwudike, and M. Vanstone. 2014. "The Impact of Skills in Probation Work: A Reconviction Study." *Criminology and Criminal Justice* 14: 235-49.

Ribeiro da Silva, D., D. Rijo, and R. T. Salekin. 2015. "The Evolutionary Roots of Psychopathy." *Aggression and Violent Behavior* 21:85-96.

Rijo, D., C. Oliveira, and N. Brazão. 2017. "Da Vergonha à Raiva: Emoções e Processos Psicológicos Por Detrás Do Comportamento Do Agressor Juvenil" (From Shame to Anger: Emotions and Psychological Processes Underlying Antissocial Behavior in Youth) [In Portuguese]. *Revista do Ministério Público* [In Portuguese] 151:145-63.

Rijo, D., M. N. Sousa, J. Lopes, J. Pereira, J. Vasconcelos, M. C. Mendonça, M. J. Silva, N. Ricardo, and S. Massa. 2007. *Gerar Percursos Sociais: Programa De Prevenção E Reabilitação Para Jovens Com Comportamento Social Desviante* (Growing Pro-Social: Prevention and Rehabilitation Program for Youths with Deviant Social Behavior). Ponta Delgada, Portugal: EQUAL.

Salvatore, G., P. H. Lysaker, R. Popolo, M. Procacci, A. Carcione, and G. Dimaggio. 2012. "Vulnerable Self, Poor Understanding of Others' Minds, Threat Anticipation and Cognitive Biases as Triggers for Delusional Experience in Schizophrenia: A Theoretical Model." *Clinical Psychology & Psychotherapy* 19:247-59.

Shanahan, S., J. Jones, and B. Thomas-Peter. 2014. "Are You Looking at Me, or Am I? Anger, Aggression, Shame and Self-worth in Violent Individuals." *Journal of Rational-Emotive Cognitive Behavior Therapy* 29:77-91.

Shorey, R. C., S. Anderson, and G. L. Stuart. 2014. "The Relation between Antisocial and Borderline Personality Symptoms and Early Maladaptive Schemas in a Treatment Seeking Sample of Male Substance Users." *Clinical Psychology and Psychotherapy* 21:341-51.

Silva, D. R., R. Campos, and N. Prazeres. 1999. "O Inventário De Estado-Traço De Raiva (STAXI) E A Sua Adaptação Para a População Portuguesa" (State-trait Anger Expression Inventory Adapted for the Portuguese population) [In Portuguese]. *Revista Portuguesa de Psicologia* [In Portuguese] 34:55-81.

Skeem, J. L., D. L. Polaschek, and S. Manchak. 2009. "Appropriate Treatment Works But How? Rehabilitating General Psychopathic, and High-risk Offenders." Pp. 358-384 in *Psychological Science in the Courtroom: Consensus and Controversy*, edited by J. L. Skeem, K. S. Douglas, and S.O. Lillenfeld. New York: Guilford Press.

Specht, M. W., A. Chapman, and T. Cellucci. 2009. "Schemas and Borderline Personality Symptoms in Incarcerated Woman." *Journal of Behavior Therapy and Experimental Psychiatry* 40:256-64.

Spielberger, C. D. 1988. "The Experience, Expression and Control of Anger." Pp. 55-81 in *Health psychology: Individual Differences and Stress*, edited by M. P. Janisse. New York: Springer.

Tangney, J. P., J. Stuewig, D. Mashek, and H. Hastings. 2011. "Assessing Jail Inmates' Proneness to Shame and Guilt. Feeling Bad about the Behavior or the Self?" *Criminal Justice and Behavior* 38:710-34.

Tangney, J. P., P. E. Wagner, and R. Gramzow. 1992. "Proneness to Shame, Proneness to Guilt, and Psychopathology." *Journal of Abnormal Psychology* 103: 469-78.

Thomaes, S., B. Bushman, H. Stegge, T. Olthof, and J. Nezlek. 2011. "Turning Shame Inside-out: "Humiliated Fury" in Young Adolescents." *Emotion* 11:786-93.

Thomaes, S., H. Stegge, B. Bushman, and T. Olthof. 2008. "Trumping Shame by Blasts of Noise: Narcissism, Self-esteem, Shame, and Aggression in Young Adolescents." *Child Development* 79:1792-801.

Trotter, C. 2013. "Reducing Recidivism through Probation Services: What We Know and Don't Know from Four Decades of Research." *Federal Probation* 77:43-88.

Velotti, P., J. Elison, and C. Garofalo. 2014. "Shame and Aggression: Different Trajectories and Implications." *Aggression and Violent Behavior* 19:454-61.

Walters, G. D. 1990. The Criminal Lifestyle. Newbury Park, CA: Sage.

Wright, K., G. H. Gudjonsson, and S. Young. 2008. "An Investigation of the Relationship between Anger and Offence-related Shame and Guilt." *Psychology, Crime & Law* 14:415-23.

Young, J. E., J. S. Klosko, and M. E. Weishaar. 2003. *Schema Therapy. A Practioner's Guide*. New York: Guilford Press.

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