

PSYCHOPATHY.COMP: PROMOTING A COMPASSIONATE MOTIVATION

Abstract

This study aims to assess the efficacy of the PSYCHOPATHY.COMP in promoting a compassionate motivation among male detained youth, also testing its role as a potential mechanism of change on the reduction of psychopathic traits. A treatment group (n=58) and a control group (n=61) answered a set of self-report measures on psychopathic traits, shame, fears of compassion, social safeness, self-compassion, and compassion for others at three time-points: baseline, posttreatment, and six months' follow-up. Treatment participants attended the PSYCHOPATHY.COMP. Controls received the Treatment As Usual (TAU) delivered at juvenile detention facilities. The treatment effects were tested with latent growth curve models (LGCM). At baseline, no significant differences between groups were found. Results from LGCM showed that condition was a significant predictor of change over time observed in all outcome measures, even after controlling for psychopathic traits scores. When compared with the control group, the treatment group showed a significant decrease on shame and fears of compassion and a significant increase on social safeness, self-compassion, and compassion for others over time (medium to large effect sizes; growth modeling analysis - GMA d ranging from .57 to .96). It was also observed that increases in self-compassion and, in some cases, decreases in fears of receiving compassion, were crucial to the decrease of psychopathic traits. These findings suggest that the PSYCHOPATHY.COMP is a promising approach to promote a compassionate motivation in these youth, strengthening their rehabilitation odds. Increasing self-compassion and decreasing fears of receiving compassion should be considered when designing intervention programs for detained youth.

Keywords: Compassion Focused Therapy; Compassionate Motivation; Conduct Disorder; Latent Growth Curve Models; PSYCHOPATHY.COMP.

Promoting a compassionate motivation in detained youth: A secondary analysis of a controlled trial with the PSYCHOPATHY.COMP program

Detained youth with Conduct Disorder (CD) and psychopathic traits (a set of interpersonal, emotional, and behavioral deviant traits) are considered a high-risk and difficult to treat population (Geerlings et al., 2020; Hecht et al. 2018; Polaschek & Skeem 2018; Ribeiro da Silva et al., 2019b, 2020a). Although there is a recognizable need to offer proper treatment to these youth, research on this topic is still limited (Butler et al., 2011; Caldwell, 2011; Caldwell et al., 2006; Manders et al., 2013). The PSYCHOPATHY.COMP, an intervention based on Compassion Focused Therapy (CFT; for a detailed description of the program, see Interventions section), is the first individual delivery program that was specifically designed to reduce antisocial behavior and psychopathic traits through the promotion of a compassionate motivation (i.e., motivation to be sensitive to the suffering of the self and/or others, allied with the wisdom, strength and commitment to prevent and/or alleviate that same suffering; Gilbert, 2010; Ribeiro da Silva et al., 2022). Previous research on the PSYCHOPATHY.COMP's efficacy among male detained youth showed that this program was able to reduce psychopathic traits and disruptive behavior, while promoting treatment engagement (Ribeiro da Silva et al., 2019a, 2020b, 2021a). However, it is still an open question whether the PSYCHOPATHY.COMP is also capable of promoting a compassionate motivation in this at-risk population. Moreover, it seems of utmost importance to test the mechanisms of change of the PSYCHOPATHY.COMP program, i.e., whether the changeability of psychopathic traits is mediated through the promotion of a compassionate motivation. Promoting a compassionate motivation could increase the odds of detained youth towards rehabilitation, shielding these youth and the society at large from the costs and suffering of antisocial behavior and psychopathic traits (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva et al., 2020a).

In 1941, Cleckley (1941/1988) stated that “We do not at present have any kind of psychotherapy that can be relied upon to change the psychopath fundamentally” (p. 478). Despite the progress of psychotherapy research in the last 80 years (see David et al., 2018 for a review), the

treatment pessimism around psychopathic traits is still present (Hecht et al. 2018; Polaschek & Skeem 2018). Although there is not yet an evidence-based psychotherapy for the treatment of psychopathic traits (Hecht et al., 2018), CFT (an evolution informed biopsychosocial approach to mental functioning) has been gaining an increase interest among researchers and clinicians working within forensic settings (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva & Rijo, 2022; Ribeiro da Silva et al., 2020a). CFT aims to help people to shift into a compassionate motivation, with a clear impact over emotional and behavioral regulation (Cozolino, 2017; Gilbert, 2019; Kirby et al., 2017; Seppälä et al., 2019; Singer & Engert, 2019). Bearing in mind that detained youth, especially those with psychopathic traits, seem to function according to a motivation system of competitiveness and aggression, the focus on promoting a compassionate motivation in these youth was considered a potential accurate strategy and a fundamental therapeutic goal to be attended within their rehabilitation (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva et al., 2015).

According to CFT, humans have an innate set of basic motivations to survive, thrive, and form affiliative bonds, which are regulated by three emotional regulation systems: the threat system, focused on threat detection and protection seeking; the drive system, attuned towards wanting, seeking, aspiring and/or striving; and the soothing system, which allows social connection, bonding, and management of distress (Gilbert, 2019; Kumsta, 2019). Psychopathological symptoms and disorders usually arise from an unbalance of these basic motives and emotional regulation systems, particularly when the threat system dominates the individuals' functioning (Gilbert, 2019). Central to the activation of the threat system is shame (i.e., unbearable and persistent feelings of being inferior, inadequate, and worthless), which has been regarded as a transdiagnostic feature in both internalizing and externalizing mental health problems (Elison et al., 2006; Gilbert, 2019; Nathanson, 1992; Paulo et al., 2019).

CFT conceptualizes antisocial behavior and psychopathic traits as evolutionary strategies to cope with rearing environments marked by traumatic experiences (e.g., child abuse) and by a lack of affiliative signals (e.g., lack of warmth and safeness experiences), which, in turn, interact with other

etiological factors (e.g., genetic/epigenetic, neural, temperamental, environmental; Del Giudice, 2016; Gilbert, 2017; Glenn, 2019; Ribeiro da Silva et al., 2015; Viding & McCrory, 2018; Waldman et al., 2018). As most detained youth were raised in harsh rearing environments, they tend to have an oversensitive and overdeveloped threat system that usually blends with a drive system that is self-focused on short-term goals and wants (leading these youth to their typical thrill-seeking, impulsive, risky, and antisocial behaviors), which, in turn, hamper the full development of the soothing system (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva & Rijo, 2022; Ribeiro da Silva et al., 2015). In detail, as the world and others were accurately perceived as threatening, shameful, and unreliable, detained youth cannot develop strategies, mindsets, or physiological competences for turning to others seeking for support/soothing during their developmental pathway (Gilbert, 2017; Gilbert & Basran, 2019; Ribeiro da Silva & Rijo, 2022). Rather, they develop an antisocial motivation, attacking others in potential shameful/threatening situations, with the aim of protecting themselves and rapidly recover their sense of power and dominance (Cowan et al., 2016; Del Giudice, 2016; Farrington et al., 2010; Garofalo et al., 2018; Gilbert, 2017; Glenn, 2019; Jonason et al., 2016; Kosson et al., 2016; Ribeiro da Silva et al., 2015, 2019c, 2019d). Although adaptive in a short-run, these strategies usually heighten and reinforce both shame and fears of compassion in these youth (i.e., it is difficult and aversive for them to be compassionate towards others, to receive compassion from others, and to be compassionate towards themselves), decreasing their sense of social safeness (Dávila et al., 2020; Gilbert & Basran, 2019; Morley, 2015; Ribeiro da Silva et al., 2015, 2019c, 2019d). In other words, these harsh rearing environments usually enhance antisociality, the antithesis of compassion (Ribeiro da Silva & Rijo, 2022; Ribeiro da Silva et al., 2015).

Departing from this theoretical framework, the PSYCHOPATHY.COMP was designed to reduce antisocial behavior and psychopathic traits in detained youth, restoring the balance of the motivational and emotional regulation systems through the promotion of a compassionate motivation (Ribeiro da Silva et al., 2019a, 2021). Building a compassionate motivation within an individual therapeutic context could function as an inner safe heaven and a secure base, enabling these youth to

make amends to their past experiences, to reframe their internal and external threats (including reducing shame and fears of compassion), and to face new life experiences with the strength, courage, and wisdom of compassion, both for others and for themselves (Ribeiro da Silva et al., 2021a, 2022).

Current Study

Available findings on the efficacy of the PSYCHOPATHY.COMP in reducing psychopathic traits and disruptive behavior among detained youth are encouraging (Ribeiro da Silva et al., 2019a, 2020b, 2021a). In a recent controlled trial (Ribeiro da Silva et al., 2021a), a treatment group ($n = 58$) and a control group ($n = 61$) answered two self-report measures on psychopathic traits at baseline, posttreatment, and six-month follow-up. Treatment participants attended the PSYCHOPATHY.COMP, in addition to Treatment As Usual (TAU) delivered at juvenile detention facilities, while controls only received TAU. Treatment integrity was also controlled following the recommendations proposed by Perepletchikova (2011). Treatment effects were tested with latent growth curve models (LGCM) showing that, with medium to large effect sizes, participants from the treatment group significantly decreased their levels of psychopathic traits. This study also showed that the PSYCHOPATHY.COMP was promising in solving the frequently reported therapeutic engagement issues of these youth (Hecht et al., 2018; Polaschek & Skeem 2018; Ribeiro da Silva et al., 2021a). However, it is still an open question whether this program is also capable to help severely disturbed detained youth to shift into a compassionate motivation. Moreover, it seems of utmost importance to test the mechanisms of change of the PSYCHOPATHY.COMP program, i.e., its ability to reduce psychopathic traits through the promotion of a compassionate motivation. Hence, the present research is a secondary analysis of the abovementioned controlled trial aimed at testing the efficacy of the PSYCHOPATHY.COMP. The main research question is to test the efficacy of the program in promoting a compassionate motivation among male detained youth by reducing shame and fears of compassion (linked with the activation of the threat system) and by increasing social safeness, and compassion towards the self and others (linked with the activation of the soothing system and with a compassionate motivation). To test the mechanisms of change, we also aimed to

test if there is a mediation effect of compassion-related variables (i.e., fears of compassion, self-compassion, and compassion towards others) in the prediction of change on psychopathic traits. Lastly, we also aimed to test if psychopathic traits scores at baseline impact on treatment effects for the variables under study. Considering that this program was specifically designed to reduce antisocial behavior and psychopathic traits through the promotion of a compassionate motivation, it was expected that the PSYCHOPATHY.COMP would have a positive impact on the abovementioned variables, regardless of psychopathic traits scores at baseline. Finally, considering that CFT change process encompasses working and reducing fears of compassion and increasing self-compassion and compassion towards others (Gilbert, 2019), we expect that these variables would have an important mediation role in the changeability of psychopathic traits.

Method

This trial was designed in accordance with the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND Statement; Des Jarlais et al., 2004) and was registered as a controlled trial at ClinicalTrials.gov (ID: NCT03971682; <https://clinicaltrials.gov/ct2/show/NCT03971682?term=NCT03971682&draw=2&rank=1>); statistical analysis were not pre-registered.

Trial Design and Participants

The current study is a controlled trial, carried out between March 2018 and January 2020. Participants were selected from male detained youth aged between 14 and 18 years old from the six Portuguese juvenile detention facilities. Exclusion criteria included: (1) non-Portuguese speaking (to avoid communication issues); (2) remaining in the juvenile detention facility less than 12 months since the beginning of the program (considering PSYCHOPATHY.COMP length and assessment period); (3) presence of cognitive disabilities, psychotic symptoms and/or autism spectrum disorders (because PSYCHOPATHY.COMP is not suitable for the impairments of these youth). Female detained youth were also excluded from this study, as they represent a small percentage of the total detained youth in Portuguese juvenile detention facilities, and any possible

idiosyncrasies from this cohort would be underrepresented (Rijo et al., 2016). As research has shown that the association between CD and psychopathic traits predicts a worse prognosis (Geerlings et al., 2020; Ribeiro da Silva et al. 2019b), inclusion criteria for this study was the presence of a CD diagnosis as the main diagnosis (assessed with the MINI-KID; see Measures section).

Regarding the sample size, a power analysis was conducted a priori (GPower v3.1 software; Faul et al., 2009), specifying for *F* tests (MANOVAS: Repeated measures, within-between interaction), showing that a sample of 100 detained youth was necessary to detect medium effects with a significance level of .05 and a power of .90.

Interventions

The PSYCHOPATHY.COMP program (Ribeiro da Silva et al., 2022) is an individual CFT-based intervention for detained youth, which was specifically designed to reduce antisocial behavior and psychopathic traits through the development of a compassionate motivation in these youth (for a detailed description about the development of this program see Ribeiro da Silva et al., 2021a).

This program has many similarities with other CFT programs, namely the strategy of change and the inclusion of Compassionate Mind Training (CMT) practices. CMT comprises training on specific practices that are designed to deal with the triggering of the threat system, to balance the emotional regulation systems, and to cultivate compassion in individuals (Gilbert 2010; Ribeiro da Silva et al., 2022). However, this program stands out by being highly experiential and tailored for the specific issues and life experiences of detained youth. Moreover, as detained youth with psychopathic traits tend to present poor treatment engagement (Hecht et al. 2018), the PSYCHOPATHY.COMP program was designed considering motivational interviewing strategies aligned with a CFT approach (Steindl et al., 2018).

The PSYCHOPATHY.COMP is a manualized program of 20 individual sessions (60-minutes sessions, one session per week). Sessions must be delivered by therapists skillful in CFT and in the program itself; supervision sessions are also highly recommended. The program's

structure follows a progressive strategy of change, which occurs in four consecutive modules (see Supplementary material for an overview of the program): (1) The basics of our mind; (2) Our mind according to CFT; (3) Compassionate Mind Training; and (4) Recovery, relapse prevention, and finalization. In all sessions, therapists are focused on developing a secure therapeutic relationship, not forgetting to evaluate the motivational stage of the youth and to encourage CMT.

The aim of Module 1 is to offer insights about the evolutionary roots of humans' basic emotions, motives, and needs, including the instinctive, archaic, and universal responses to both social and physical threats (Gilbert, 2019; Ribeiro da Silva et al., 2022). Assuming a non-judgmental, de-shaming, and non-pathologizing perspective, detained youth are encouraged to understand that even if we cannot change events, emotions, and thoughts, we can change the way we interact with them and act on them. CMT is introduced in module 1 as a crucial platform to begin the process of building participants' compassionate mind and awareness (Ribeiro da Silva et al., 2019a, 2021a).

Module 2 brings awareness to detained youth about the functioning of the human mind and body according to a CFT framework and continues the CMT (Gilbert, 2019; Ribeiro da Silva et al., 2022). Therapists compassionately allow youth to discover that although we are "just one version of ourselves" (i.e., we probably would be different if genetic factors or rearing experiences had been different), our evolutionary, genetic, and contextual inheritance does not lead to determinism, as we all can make conscious actions as we increase our awareness about our own functioning (Ribeiro da Silva et al., 2019a). To encourage such conscious actions, beyond the importance of CMT, detained youth are guided to understand the concepts of emotion regulation systems (i.e., threat, drive, and soothing systems and its body, emotional, cognitive, and behavioral outputs), shame, and safety strategies (Gilbert, 2019; Ribeiro da Silva et al., 2015).

Module 3 is explicitly focused on CMT (Ribeiro da Silva et al., 2022). Through experiential exercises (e.g., role-playing past, hypothetical and/or future events), detained youth are gradually exposed to the triggering of the threat system (mostly anger and shame exposure) to allow them to understand their outputs (both in the mind and in the body). This module is also focused on the

distinction and integration of their multiple selves (i.e., anxious self, angry self, sad self, ...). Lastly, detained youth are encouraged to search for and to test compassionate strategies to bear and manage their own distress in healthy ways (Ribeiro da Silva et al., 2019a, 2022).

The last module (Module 4) is aimed at revisiting motivations for recovery and preventing relapse under the lens of compassion (Ribeiro da Silva et al., 2022). Detained youth are encouraged to genuinely understand that although suffering will always be part of our lives, this therapeutic journey presented them several compassionate emotion regulation strategies that are now available when one has to cope with suffering (Ribeiro da Silva et al., 2019a, 2022). When doing so, therapists should always emphasize youth's control and personal choices, as well as their responsibility towards change (Ribeiro da Silva et al., 2021a; 2022; Steindl et al., 2018).

All sessions present a default structure, starting with the therapist making a grounding exercise before the session onset, which is aimed to bring the compassionate self of the therapists into the sessions (Ribeiro da Silva et al., 2022). The sessions themselves are then divided into three parts. Part 1 starts with a grounding and focusing exercise (e.g., Soothing Rhythm Breathing and engaged compassionate intention; Gilbert, 2010), aimed at helping youth to settle and focus. This is followed by an overview of the last session and by a moment to explore any insights and/or events that occurred during the week (Ribeiro da Silva et al., 2019a). Part 2 starts with an experiential exercise, which is followed by the development of the session theme, where youth are guided to a deeper level of understanding (Ribeiro da Silva et al., 2022). Lastly, Part 3 starts with a session summary, and afterwards, youth are invited to do a CMT practice. At the end, a "Magic Card" is given to the youth, which displays a keyword, a quote, or an image that summarizes the session theme (Ribeiro da Silva et al., 2022).

The treatment group attended the PSYCHOPATHY.COMP program for about six months (more than 1100 individual therapeutic sessions were delivered during this controlled trial) and controls received the TAU delivered at juvenile detention facilities. The TAU includes around 20 individual weekly counseling sessions, delivered by psychologists from the juvenile justice system

(the treatment group did not attend these sessions and the control did not attend the PSYCHOPATHY.COMP during the research period).

Measures

Participants were assessed with a clinical interview and completed a set of self-report measures (see Supplementary material for a correlation matrix between all variables under study). Additionally, demographic, and legal data on participants were collected from juvenile justice record files, including their risk for criminal recidivism according to the Youth Level of Service/Case Management Inventory (YLS/CMI; Hoge et al. 2002).

Semi-Structured Clinical Interview

To investigate mental health inclusion/exclusion criteria, participants from treatment and control groups were interviewed with the Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID; Sheehan et al., 2010; Portuguese version by Rijo et al., 2016) at baseline. The MINI-KID is an accurate structured clinical diagnostic interview that assesses DSM-5 (*Diagnostic and statistical manual of mental disorders*; APA, 2013) disorders in children and adolescents in a way that is both comprehensive and concise. The MINI-KID is organized into diagnostic sections, each starting with two to four screening questions for each specific disorder. Additional symptom questions within each disorder section are asked only if the screen questions are positively answered. All questions are in a binary “yes/no” format. The MINI-KID considers not only DSM criteria A but also the impairment and duration of the symptoms. The interview also has a section that allows the screening of autism spectrum disorders and another section for ruling out medical, organic, and/or drug causes for disorders. Diagnostic criteria are summarized on a summary sheet, allowing the interviewer to decide which disorder should be the major focus of clinical attention (i.e., the main diagnosis). The MINI-KID takes between 30 to 90 minutes to administer. Inter-rater reliability was found to be excellent for all mental health disorders assessed with the MINI-KID ($k \geq .94$; Sheehan et al. 2010).

Outcome Measures

To assess the PSYCHOPATHY.COMP efficacy on promoting a compassionate motivation, participants completed a set of self-report measures at three time points: baseline, posttreatment, and six-month follow-up. Those measures are described below.

Shame. The Other as Shamer Scale Brief–Adolescent version (OASB-A; Vagos et al., 2016) is the adolescent version of the OAS2 (Matos et al., 2015), both shorter versions of the Other as Shamer Scale (Goss et al., 1994). The OASB-A is an eight-item (e.g., “Other people see me as not good enough”) self-report scale that measures external shame, i.e., youth’s perception of being negatively judged by others. Items are rated on a five-point scale (0 = Never; 4 = Almost Always); higher scores point to increased levels of shame. The OASB-A showed good psychometric proprieties in the Portuguese version for adolescents (Vagos et al., 2016). In the present study, the OASB-A showed a good internal consistency during the three assessment points; at baseline, the alpha was .90; the Mean-Inter-Item Correlation (MIIC) was .52; and the omega was .89.

Fears of Compassion. The Fear of Compassion Scale (FCS; Gilbert et al., 2011; Portuguese version for adolescents by Duarte et al., 2014) is a 38-item self-report scale that measures fears of compassion through three subscales: Fears of compassion for others (10 items assessing fears of developing compassion for others; e.g. “People will take advantage of me if they see me as too compassionate”); Fears of compassion from others (13 items measuring how one reacts to the expression of compassion from other people; e.g., “Wanting others to be kind to oneself is a weakness”); and Fears of compassion for self (15 items assessing the fear of expressing kindness and compassion towards the self; e.g., “I find it easier to be critical towards myself rather than compassionate”). Items are rated on a five-point scale (0 = Do not agree at all; 4 = Completely agree); higher scores relate to the respective increased fears of compassion. The FCS showed good psychometric proprieties in the Portuguese version for adolescents (Duarte et al., 2014). In this study, the three subscales showed good internal consistency during the three assessment points. At baseline, alpha, the MICC, and the omega values were respectively the following: .84, .35, and .86

for Fear of Compassion for Others; .89, .38, and .89 for Fear of Compassion from Others; and .92, .44, and .92 for Fear of Compassion for Self.

Social Safeness. Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009; Portuguese version for adolescents by Miguel et al., 2019) is a 11-item self-report measure that assesses adolescents' current feelings of belonging, acceptance, and safeness in their social world. Items (e.g., "I feel easily soothed by those around me") are rated on a five-point scale (0 = Almost never to 4 = Almost all the time); higher scores relate to increased levels of social safeness. The SSPS showed good psychometric proprieties in the Portuguese version for adolescents (Miguel et al., 2019). In the present study, the SSPS showed good internal consistency during the three assessment points; at baseline, the alpha was .90, the MIIC was .38, and the omega was .87.

Self-Compassion. The Self-Compassion Scale (SCS; Neff, 2003; Portuguese version for adolescents by Cunha et al., 2016) is a 26-item self-report measure designed to assess self-compassion, i.e., the capacity to be kind and understanding towards oneself in difficult moments. The SCS comprises five subscales (Self-Kindness, Common Humanity, Mindfulness, Self-judgment, Over-identification) that can be grouped on a total score. Items (e.g., "I'm kind to myself when I'm experiencing suffering.") are rated on a five-point scale (1 = Almost never to 5 = Almost always); higher scores reflect higher levels of self-compassion. The SCS presented good psychometric proprieties in the Portuguese version for adolescents (Cunha et al., 2016). In the present study, the total score of the SCS showed an acceptable internal consistency during the three assessment points; at baseline, the alpha was .83, the MIIC was .16, and omega was .72.

Compassion for Others. The Compassion Scale (CS; Pommier, 2019; Portuguese version for adolescents by Sousa et al., 2022) is a 16-item self-report measure that assesses compassion for others, i.e., experience kindness, a sense of common humanity, mindfulness, and lessened indifference toward the suffering of others. The CS comprises four subscales (Kindness, Common Humanity, Mindfulness, Indifference), which can be grouped in a total score. Items (e.g., "When others feel sadness, I try to comfort them") are rated on a five-point scale (1 = Almost never to 5 =

Almost always); higher scores reflect higher levels of compassion for others. The CS presented good psychometric proprieties in the Portuguese version for adolescents (Sousa et al., 2022). In the current study, the total score of the CS showed a good internal consistency during the three assessment points; at baseline, the alpha was .88, the MIIC was .31, and the omega was .89.

Covariables (Primary Outcome Measures)

Psychopathic Traits. Although a previous study found that the PSYCHOPATHY.COMP program was able to reduce psychopathic traits (Ribeiro da Silva et al., 2021a), the current study also addressed whether the treatment produced differences in the abovementioned outcomes (shame, fears of compassion, social safeness, self-compassion, and compassion) when controlling for psychopathic traits scores measured at baseline. To address this, the total score at baseline of two self-report measures on psychopathic traits were entered as covariables: the Youth Psychopathic Traits Inventory-Short (YPIS; Van Baardewijk et al., 2010; Portuguese version by Pechorro et al., 2015) and the Proposed Specifiers for Conduct Disorders, (PSCD; Salekin & Hare, 2016; Portuguese version by Ribeiro da Silva et al., 2021b).

The YPIS is an 18-item self-report version of the original Youth Psychopathic Traits Inventory (YPI; Andershed et al., 2002), which assesses psychopathic traits in youth via ratings within three different factors: GM (e.g., “It’s easy for me to manipulate people”), CU (e.g., “I think that crying is a sign of weakness, even if no one sees you”), and II (e.g., “I like to do exciting and dangerous things, even if it is forbidden or illegal”). Items are rated on a four-point scale (1 = “Does not apply at all” to 4 = “Applies very well”); higher scores are indicators of increased levels of psychopathic traits. The YPIS has shown good psychometric proprieties in studies with Portuguese youth (e.g., Pechorro et al., 2015; Van Baardewijk et al., 2010). In the current study, the total score of the YPIS showed an acceptable internal consistency; at baseline, the alpha was .78, the MIIC was .31, and the omega was .77.

The PSCD is a 24-item self-report measure that assesses psychopathic traits in youth via ratings within four factors (Salekin & Hare, 2016): GM (e.g., “I can turn on the charm in any

situation”); CU (e.g., “I don’t waste time thinking about how others feel”); Daring-Impulsive (DI) (e.g., “I get a thrill out of doing risky things”); and Conduct Disorder (CD; e.g., “I have engaged in physical aggression against animals or people”). Items are rated on a three-point scale (0 = “not true” to 2 = “true”); higher scores are indicators of increased levels of psychopathic traits. In a study with Portuguese male youth, the PSCD has shown very good psychometric proprieties (Ribeiro da Silva et al., 2021b). In the current study, the total score of the PSCD showed an acceptable internal consistency; at baseline, the alpha was .78, the MIIC was .26, and the omega was .84

Mediation Variables

To test the potential mechanisms of change of the PSYCHOPATHY.COMP, the following compassion-related variables were used as mediators of the changeability of psychopathic traits across time: Fears of Compassion (as measured by the FCS); Self-Compassion (as measured by the SCS); and Compassion for Others (as measured by the CS).

Procedures

This study was approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra, by the Portuguese Data Protection Authority, and by the Portuguese Ministry of Justice.

As Portuguese juvenile detention facilities usually have no more than 150 detained youth (about 30 youth per juvenile detention facility), facing six to 36 months of detention, around 10 youth enter and leave Portuguese juvenile detention facilities each month, which makes it difficult to randomly assign participants to conditions. To try to minimize this barrier and to maximize time and human resources as well as the quality of the trial design (Hollin, 2008), the research team opted to assign the first 75 youth entering in the juvenile detention facilities during the research period to the treatment group, and the following 75 youth to the control group (in a total of around 150 participants; 50 more participants than required to overcome potential attrition issues).

For participants eligible for the study (participants fulfilling exclusion criteria 1 - non-Portuguese speaking; and 2 - remaining in the juvenile detention facility less than 12 months since

the beginning of the program - were immediately excluded), a first meeting with the research team was carried out after the first month of detention, as this is considered an adaptation period. At this meeting, researchers explained the goals of the study and presented a brief overview of the PSYCHOPATHY.COMP program to participants. It was also explained that their participation in the study would not impact their sentencing and/or school grades in any way and that no payment or extra credit would be offered. Confidentiality and anonymity of their responses were also guaranteed. Youth were then invited to participate voluntarily in the study and informed if they would be allocated to the treatment group or to the control group. Participants older than 18 years gave verbal and written consent for their own participation and participants younger than 18 years verbally assented to their own participation in addition to their parents or legal guardians' written consent. All youth who agreed to participate in the study were interviewed with the MINI-KID to assess the remaining inclusion/exclusion criteria and the presence of other psychiatric disorders. Participants who did not meet any exclusion criteria were assigned to the treatment group or to the control group as previously specified.

All participants assigned to the treatment or to the control group were then assessed at baseline with a set of self-report measures (i.e., OASB; FCS; SSPS; SCS; CS; YPIS; PSCD). Participants in the treatment group were assessed before the first session of the program (baseline assessment), right after its terminus (posttreatment assessment - about six months after the baseline assessment) and six months after treatment completion (the six-month follow-up assessment). Participants in the control group were assessed with the same time interval using the same self-report measures.

Independent research assistants participated in data collection (i.e., assessing participants with the MINI-KID before the baseline assessment and assessing participants with self-report questionnaires at baseline, posttreatment, and six-months follow-up). These researchers received intensive training on the assessment measures (a 21-hours workshop on the administration and rating of the MINI-KID and training on the administration and rating of self-report questionnaires)

and had supervision sessions with a senior researcher during data collection (to clarify any doubt regarding the assessment *per se* or the ratings). Data were collected individually by the researchers at each time point and respondent specific codes were used to link the data from one time-point to the next one.

Therapists delivering the PSYCHOPATHY.COMP program were three psychologists who had at least six years of clinical experience as well as intensive training on CFT with a CFT expert (an initial face-to-face 35-hours workshop that take place in 2015, followed by online sessions that take place between 2016 and 2017, in a total of 30 hours) and experience in delivering this program to young offenders (each therapist previously delivered the program to two young offenders). Secondly, during this study, the therapists had weekly supervision sessions with CFT experts (in a total of 40 hours). Data on therapeutic engagement and treatment integrity was also collected and reported in a previous study (Ribeiro da Silva et al., 2021b), indicating very positive results on these indicators. Therapists delivering TAU were psychologists from the juvenile detention facilities.

Data Analysis

Preliminary analyses included comparisons between treatment and control groups on demographic, legal, and clinical variables. Independent-samples *t*-tests or chi-square tests were used for comparisons depending on the nature of the data. Groups were also compared on the outcome measures at baseline, using independent-samples *t*-tests. The internal consistency of the outcome measures was calculated based on Cronbach's alpha. These preliminary analyses were carried out with the IBM SPSS Statistics v24.0 software.

Considering the longitudinal design of the research, intervention effects were tested by intent to treat analysis using latent growth curve models (LGCM), which overcome traditional methods (e.g., MANOVA) that only analyze change in observed group means (Curran et al., 2010; Duncan & Duncan, 2009). LGCM are considered a robust and reliable analysis technique that allow for modeling average change over time, individual differences in change, and predictors of change, such as treatment conditions (Duncan & Duncan, 2009; Muthén, 1997). In LGCM, the intercept

(i.e., initial status) and slope (i.e., change over time) were modeled as latent variables from data at baseline, posttreatment, and six-month follow-up assessments. First, unconditional models testing a linear trend of change¹ in the dependent variables over time were estimated without predictors or control variables. After establishing the unconditional models, the association between condition and change over time was examined by including condition (dummy coding: control group = 0; treatment group = 1) as a predictor of the growth factors (i.e., intercept and slope). The path from condition to intercept reflects group differences at baseline and should be nonsignificant to ascertain that treatment and control groups are matched. The path from condition to slope reflects group differences on the trajectory of change in the dependent variables over time. A negative slope in shame and in fears of compassion indicates a decrease in these variables in treatment participants, while a positive slope in social safeness, self-compassion, and compassion for others indicates an increase in these variables in the treatment group. Effect sizes for the rate of change observed in the dependent variables were then calculated using growth modeling analysis (GMA) d as suggested by Feingold (2019). GMA d is calculated using the equation $GMA\ d = \frac{b \times duration}{SD}$, which convert the unstandardized coefficient (b) for the effect of group on slope (i.e., the treatment effect) to a standardized effect size (GMA d), where: the numerator (the product of b and duration) is the model-estimated raw score mean difference between the two groups at the end of the study and the denominator (SD) is the pooled within-group standard deviation of the outcome variable at baseline. GMA d estimates the same effect size parameter as *Cohen's d*, with 0.2 indicating a small effect, 0.5 a medium effect and 0.8 a large effect.

To control for the effect of psychopathic traits scores at baseline, the total score of both the YPIS and the PSCD were used as covariables in a multivariate analysis of covariance (MANCOVA).

To test for the mechanisms of change, i.e., the ability of the PSYCHOPATHY.COMP to reduce psychopathic traits through the promotion of a compassionate motivation, a series of parallel

¹ It was not possible to test for nonlinear change as this requires at least four assessment points.

processes LGCM were estimated (Cheong et al., 2003; von Soest & Hagtvet, 2011). Thus, we combined conditional LGCM of psychopathic traits (i.e., YPIS and its factors; PSCD and its factors; except for the GM dimension of the PSCD, as condition was not a significant predictor of change over time for this variable; Ribeiro da Silva et al., 2021a) with the conditional LGCM of potential mediators (i.e., compassion-related variables: the three scales of the FCS; SCS; CS) into several parallel processes LGCM. Then, we modeled the indirect path from condition to outcome via the potential mediators (i.e., regressing the slope of the mediator on the slope of the outcome and testing the indirect effect). A significant regression coefficient between the two slopes and a significant indirect effect indicates that the trajectories of change of outcomes are mediated by the indirect path. We used standardized indirect effects as effect sizes, which are considered the most appropriate measure of effect size in a mediation analysis, indicating both the direction and strength of the indirect effect (Cheung, 2009; Miočević et al., 2018).

In all LGCM, Full Information Maximum Likelihood Estimation was used to handle missing data according to a proposal by Muthén and Muthén (2010). Thus, all participants with at least two complete measures for each outcome were included in the analyses. For each LGCM, chi-square, 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 Hair and colleagues (2005), and considering the sample size (< 250), a CFI \geq .95 combined either with a RMSEA \leq .08 or a SRMR \leq .08 were considered as indicators of good fit. All LGCM were carried out using *Mplus* v8.3 (Muthén & Muthén, 2010).

Results

Recruitment and Retention

A sample of 153 male detained youth was invited to participate in the study (see Figure 1). After assessing exclusion criteria (consulting the juvenile justice record file and/or interviewing participants with the MINI-KID), 34 (22.2%) participants were excluded from the study: 3 (2%) declined to participate and 31 (20.2%) met exclusion criteria [17 (11.1%) would stay in the juvenile

detention facility for less than 12 months, 6 (3.9%) were non-Portuguese speaking, 7 (4.6%) were suspected to have cognitive impairments and 1 (0.6%) was suspected to have an autism spectrum disorder]. From this initial selection, 119 (77.8%) detained youth completed the baseline assessment and were allocated to the treatment group or to the control group as previously specified.

From the initial 58 treatment group participants, 56 (96.6%) completed the PSYCHOPATHY.COMP and the posttreatment assessment, and 53 (91.4%) completed the follow-up assessment; 5 (8.6%) youth dropped out the study, most of them for being released earlier than expected. From the initial 61 control participants, 57 (93.4%) completed the posttreatment assessment, and 50 (82%) completed the follow-up assessment; 11 youth (18%) dropped out the study, most of them for being released earlier than expected. Overall attrition rate of 13.4 % (5.4% for the treatment group and 18% for the control group).

[Insert Figure 1]

Baseline Differences

Treatment and control groups were compared on demographic characteristics, as well as on legal, and clinical features at baseline. As reported in the study of Ribeiro da Silva and colleagues (2021a) no significant differences were found in any of these variables (all $p > .05$). Treatment ($M = 15.86$, $SD = 1.02$) and control ($M = 15.74$, $SD = 1.12$) participants had similar mean ages ($t = .63$, $p = .529$) and were evenly distributed by socioeconomic status (SES^2 ; $\chi^2 = 2.16$, $p = .339$).

Participants from both groups had similar contacts with child protection ($\chi^2 = .42$, $p = .810$) and juvenile justice systems ($\chi^2 = .33$, $p = .954$); have committed several crimes against people ($\chi^2 = 5.48$, $p = .140$); had similar detention lengths ($t = 1.87$, $p = .064$); and similar risk for criminal recidivism ($\chi^2 = 2.58$, $p = .276$). Regarding clinical features, treatment ($M = 3.57$, $SD = 1.20$) and control ($M = 3.75$, $SD = 1.48$) participants met diagnostic criteria for a similar number of diagnosis ($t = -.75$, $p = .456$) and showed a high psychiatric comorbidity ($\chi^2 = 2.17$, $p = .704$). Regarding

² Examples of professions in the high SES groups are judges and or M.D.s; for the medium SES group are nurses or schoolteachers; for the low SES group are farmers or cleaning staff.

outcome variables, here were no statistically significant differences between groups at the onset of the study (all $p > .05$) (see Supplementary material for baseline differences on the outcome measures by group)

Intervention Effects on Shame, Fears of Compassion, Social Safeness, Self-Compassion, and Compassion for Others

As previously stated, unconditional models were initially performed for each outcome measure, achieving good fit indices: RMSEA ranging from .000 to .087; CFI ranging from .975 to 1.000; and SMRS ranging from .003 to .018 (Hair et al., 2005). Afterwards, conditional models with group (control vs. treatment) as a predictor of the growth factors (i.e., intercept and slope) were examined. All conditional models provided good fit indices³ (see Supplementary material for model fit indices for the conditional models with condition as predictor).

As presented in Table 1, condition did not predict variation in the intercept for any outcome measure, indicating that the groups were similar regarding all these variables at baseline. In turn, condition was a significant predictor of change over time observed in all outcome measures. Concerning shame, treatment participants showed a greater decrease (of 2.776 units; large effect size) over time than control participants, as indicated by the negative B value. The same effect was found for all the subscales of the fears of compassion scale (fears of compassion for others, fears of compassion from others, and fears of compassion for self; of 3.346, 4.489, and 5.578, units, respectively; medium to large effect sizes). Concerning social safeness, self-compassion, and compassion for others, treatment participants showed a greater increase (of 2.776, 7.042, and 3.213 units, respectively; medium to large effect size) over time than control participants, as indicated by the positive B values.

[Insert Table 1]

Intervention Effects when Controlling for Psychopathic Traits Scores at Baseline

³ Further information on unconditional and conditional models may be requested from the first author.

When controlling for psychopathic traits scores measured at baseline, MANCOVAs' multivariate tests showed that neither the YPIS total score ($F = 1.711$; $p = .068$) nor the PSCD total ($F = .642$; $p = .823$) had an impact on the trajectory of change of the outcome variables presented in this study. In turn, multivariate tests showed that condition was a significant predictor of change of the outcomes of the present study ($F = 3.902$; $p \leq .001$).

Mechanisms of Change

All statistically significant parallel processes LGCM showed a good model fit. Increases in self-compassion (as measured by the SCS) were related to decreases in psychopathic traits (both for the total scores and dimensions of the YPIS and the PSCD; except for the DI dimension of the PSCD), with small effect sizes. Additionally, decreases in fears of receiving compassion (as measured by the scale of fears of receiving compassion of the FCS) were related to decreases of psychopathic traits as measured by the total score of the PSCD, with a small effect size. In turn, changes in fears of giving compassion and in fears of self-compassion (both scales of the FCS) as well as changes in compassion (as measured by the CS) did not predict changes in psychopathic traits (see Table 2).

[Insert Table 2]

Discussion

The PSYCHOPATHY.COMP program is the first CFT-based program specifically designed to target both antisocial behavior and psychopathic traits among detained youth through promoting the development of a compassionate motivation. First studies on the efficacy of this program showed that the PSYCHOPATHY.COMP significantly reduced antisocial behavior and psychopathic traits in these severely disturbed youth (Ribeiro da Silva et al., 2019b, 2020b, 2021a). However, there is still a need to test if this program is also capable to promote a compassionate motivation in detained youth, which could be attained by reducing shame and fears of compassion (associated with a threat activation) and by increasing social safeness, self-compassion, and compassion towards others (associated with the activation of the soothing system). Moreover, it is also important to test the

mechanisms of change of the PSYCHOPATHY.COMP program, i.e., its ability to reduce psychopathic traits through the promotion of a compassionate motivation. This study reports a secondary analysis of a controlled trial on the efficacy of the PSYCHOPATHY.COMP among male detained youth (Ribeiro da Silva et al., 2021a) and aims to address the abovementioned issues.

Data on recruitment and retention showed that most treatment participants completed the program, suggesting that PSYCHOPATHY.COMP's length and methodology as well as the clinical experience, training, and supervision of therapists, may have accounted for the favorable program retention. The same tendency is observed in the control group, which could be partially explained by the investment on the training and supervision of the assessors. Attrition rates in both groups were mainly due to external variables (i.e., youth being released early than expected), which researchers could not have controlled.

At baseline, no differences were found between treatment and control groups on demographic, legal, and clinical variables, as well on all the outcome measures. The groups were therefore similar regarding all these variables, reducing possible bias associated with the lack of randomization and allowing for reliable conclusions on the predictor effect of condition on the outcome measures over time (Hollin, 2008). It is noteworthy that this was a severe sample considering their legal features (i.e., previous contacts with child protection and juvenile justice system services, risk of criminal recidivism) as well as their psychopathological profile (i.e., high comorbidity rates combining multiple psychopathological disorders). Non-normative mean scores on the outcome measures were also found for treatment and control participants in comparison with community samples of youth (Cunha et al., 2016; Duarte et al., 2014; Miguel et al., 2019; Sousa et al., 2022; Vagos et al., 2016). These findings are in line with recent literature suggesting that forensic youth tend to present high levels of shame and disruptions on compassion-related variables (i.e., fears of compassion, social safeness, self-compassion, and compassion for others) (Dávila et al., 2020; Gilbert, 2017; Gilbert & Basran, 2019; Morley, 2015; Ribeiro da Silva et al., 2015; Vagos et al., 2016).

Findings from LGCM showed that condition was a significant predictor of change over time observed for all the outcome measures, even after controlling for psychopathic traits scores measured at baseline. In specific, although the PSYCHOPATHY.COMP program was able to decrease psychopathic traits (Ribeiro da Silva et al., 2021a), shame, and fears of compassion, as well as to increase social safeness, self-compassion, and compassion for others, the baseline scores of psychopathic traits did not impact on the trajectory of change of the abovementioned variables.

Concerning variables that are related with the activation of the threat system, shame decreased over time in the treatment group and increased in the control group, with a large effect size. The same effect (with medium to large effect sizes) was observable in all the three scales measuring fears of compassion. It is also worth to mention that mean scores on all these variables continued to decrease over time after the program's completion (i.e., in the six-month follow-up assessment) in the treatment group and to be maintained and/or to increase in the control group. These findings suggest that the PSYCHOPATHY.COMP may be an accurate therapeutic intervention to reduce the threat activation usually displayed by detained youth with psychopathic traits, even after the program's completion (Gilbert, 2017; Ribeiro da Silva et al., 2015). Moreover, these data also suggest that TAU alone is not able to account for a decreasing of threat activation across time in these youth, which can contribute to the display of disruptive and antisocial behavior during detention, eventually impacting on the youth's behavior after release (Ribeiro da Silva et al., 2019b, 2021a).

Regarding outcome measures that are indicators of both a soothing activation and a compassionate motivation, treatment participants showed a greater increase over time when compared with controls in social safeness and in compassion towards the self and others (medium to large effect sizes). It is also worth to mention that mean scores on these variables continued to increase over time after program's completion (i.e., in the six-month follow-up assessment) in the treatment group and to be maintained and/or to decrease in the control group. These findings suggest that the strategy of change was effective in promoting the activation of the soothing system

and a compassionate motivation among male detained youth, potentially increasing their rehabilitation odds (Gilbert, 2017; Ribeiro da Silva et al., 2015). In turn, control participants showed a deterioration in these variables over time, suggesting that the TAU alone may contribute to maintain their antisocial motivations.

Considering the mechanisms of change, parallel processes LGCM showed that fears of giving compassion, fears of self-compassion, and compassion for others did not predict changes in psychopathic traits. In turn, increases in self-compassion were related to decreases in psychopathic traits as measured by the total score and by the dimensions of two self-report measures on psychopathic traits (except for the DI dimension of the PSCD), with a small effect size. Moreover, decreases in fears of receiving compassion were related to decreases in psychopathic traits as measured by the total score of one of the self-report measures (PSCD; with a small effect size). This is a pertinent research and clinical finding, emphasizing the need to help these often-traumatized youth to enter in contact with their inner suffering and difficult rearing experiences and to cope with that suffering in a compassionate way (Dávila et al., 2020; Ribeiro da Silva & Rijo, 2022; Ribeiro da Silva et al., 2022). According to evolutionary theory, the presence of psychopathic traits among detained youth can be seen as an adaptive strategy to survive and thrive in their harsh rearing scenarios, protecting them from the persistent and unbearable emotions that these environments are continually inputting and helping them to rapidly recover their sense of power and dominance (Cowan et al., 2016; Del Giudice, 2016; Farrington et al., 2010; Garofalo et al., 2018; Gilbert, 2017; Glenn, 2019; Jonason et al., 2016; Kosson et al., 2016; Ribeiro da Silva et al., 2015; 2019c, 2019d). However, these strategies are only adaptive in a short-run, as its continued and systematic use may contribute to strengthen the tangled association between the disguise of suffering and psychopathic traits (Garofalo et al., 2018; Ribeiro da Silva et al., 2015, 2019c, 2019d). Thus, as the current findings indicate, helping these youth to be aware of their own suffering and to approach that same suffering with compassion, may be an effective strategy to solve this complex tangle and to decrease psychopathic traits

Clinical and Research Implications

This study aimed to test if the PSYCHOPATHY.COMP is able to promote a compassionate motivation in detained youth, by assessing the impact of the program on shame and fears of compassion (associated with a threat activation) as well as on social safeness, self-compassion, and compassion towards others (associated with the activation of the soothing system and with a compassionate motivation). Additionally, this study aimed to test the mechanisms involved on the changeability of psychopathic traits. Motivations impact individual's functioning at a deeper level, guiding both conscious and unconscious processes and, therefore, emotions, cognitions, and behaviors (Cozolino, 2017; Gilbert, 2019; Kirby et al., 2017; Seppälä et al., 2019; Singer & Engert, 2019). Allowing a shift into a compassionate motivation during detention (instead of motivations of competitiveness and aggression), may help these youth to live in a way that one tries to be helpful and not harmful to themselves and others, which, *per se*, is the ultimate goal of rehabilitation policies (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva & Rijo 2022). Thus, it seems mandatory that intervention efforts impact on detained youth's motivational systems, which, alongside with other relevant factors, may contribute to reduce their high criminal recidivism rates (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva et al., 2021a). The strategy of promoting a compassionate motivation in this at-risk population appears to be both a fundamental therapeutic goal and an accurate therapeutic strategy, considering recent research conceptualizing antisocial behavior and psychopathic traits as adaptive responses that mask central emotional dysfunctions (Del Giudice, 2016; Garofalo et al., 2018; Glenn, 2019; Kosson et al., 2016; Ribeiro da Silva et al., 2015, 2019c, 2019d). This strategy, embodied in the PSYCHOPATHY.COMP program, may have offered these youth a safe and warmth therapeutic environment that allowed them to reduce their threat activation and to process their own unpleasant memories and emotions in a more compassionate way. The strategy of the PSYCHOPATHY.COMP may also have helped these youth to build the courage, strength, and wisdom to become more self-conscious, in control, and responsible for their emotional states and behavioral responses. It may also have helped them to

find and test compassionate alternative strategies to tolerate and cope with their own suffering and/or the suffering of others in healthy ways (Ribeiro da Silva et al., 2019a, 2020a, 2021a).

In turn, findings also suggest that the TAU alone may account for a considerable deterioration of detained youth, increasing their shame feelings and fears of compassion and decreasing their social safeness and compassion towards themselves and others over time. This deterioration may possibly increase even more the oversensitive and overdeveloped threat system of these youth and hamper the full development of their soothing system, which, ultimately, may account to maintain/increase their antisocial motivations (Dávila et al., 2020; Kolts & Gilbert, 2018; Gilbert, 2017; Gilbert & Basran, 2018; Morley, 2015; Ribeiro da Silva et al., 2020a).

It seems thus crucial to take a closer look at the current practices delivered at juvenile detention facilities, reconsidering the pros and cons of investing on the delivery and test of psychotherapeutic programs tailored to the intervention needs of detained youth (Gilbert, 2017; Kolts & Gilbert, 2018; Ribeiro da Silva et al., 2021a).

Strengths, Limitations, and Future Directions

This study presents several strengths, namely the longitudinal and rigorous design comparing two equivalent experimental groups and the accurate and reliable analytical procedures (Des Jarlais et al., 2004; Duncan & Duncan, 2009; Hollin, 2008; Muthén, 1997). Moreover, this is the first study aimed to test the efficacy of the PSYCHOPATHY.COMP in promoting a compassionate motivation among male detained youth, adding to the encouraging previous research findings (Ribeiro da Silva et al., 2019b, 2020b, 2021a). Nevertheless, this study is not free of limitations, namely the lack randomization, the resort to self-report measures only, **the limited control over the validity of responding (e.g., inconsistency/random responding, responding in implausibly quick time, ...; just partially controlled by the procedures for data collection across time)**, and the lack of a follow-up assessment after release. Thus, generalizing the findings of the current study requires some caution. Future research, resorting to randomized controlled designs, should track the progress of detained youth after release (e.g., recidivism rates, school, and social functioning), **control for bias**

responding (e.g., using validity scales), and include the assessment of variables that do not rely uniquely on self-report data (e.g., physiological/neural variables).

Conclusions

Despite these limitations, findings of this study offer evidence for the PSYCHOPATHY.COMP's efficacy in promoting a compassionate motivation among detained youth (even after controlling for psychopathic traits scores at baseline), which could shield these youth from the tendency to recidivate in crime after release (Caldwell, 2011; Edens et al., 2007; Geerlings et al., 2020; Gretton et al., 2004). Moreover, this study indicates that promoting a compassionate motivation (increasing self-compassion and decreasing fears of receiving compassion from others) is an important mechanism for the changeability of psychopathic traits.

The encouraging research findings of the current study, coupled with previous research on the efficacy of the PSYCHOPATHY.COMP in reducing antisocial behavior and psychopathic traits while promoting therapeutic engagement, suggest that this program may fit the intervention needs of this at-risk population (Ribeiro da Silva et al., 2019a, 2020b, 2021a). Although additional research is needed before the PSYCHOPATHY.COMP can be considered an evidence-based intervention (David et al., 2018), findings may have clear and relevant implications for the design of treatment programs to be delivered to detained youth with psychopathic traits (Hecht et al. 2018; Polaschek & Skeem 2018; Ribeiro da Silva et al., 2020a; Salekin et al., 2018). In sum, it seems crucial when implementing rehabilitation efforts to consider the detention length as a unique opportunity to target not only antisocial behavior, psychopathic traits, and/or other negative outcomes, but, mostly, to foster change at a deeper level. Programs that are able to promote a shift in motivational systems should be delivered, tested, and considered as part of the rehabilitation of detained youth. A shift to a compassionate motivation may be what these youth need to overcome their harmful backgrounds, healing and making amends to their past experiences and to themselves, so they can be released with the courage, strength, and wisdom to live a life that is helpful and compassionate, not only for others, but also for themselves.

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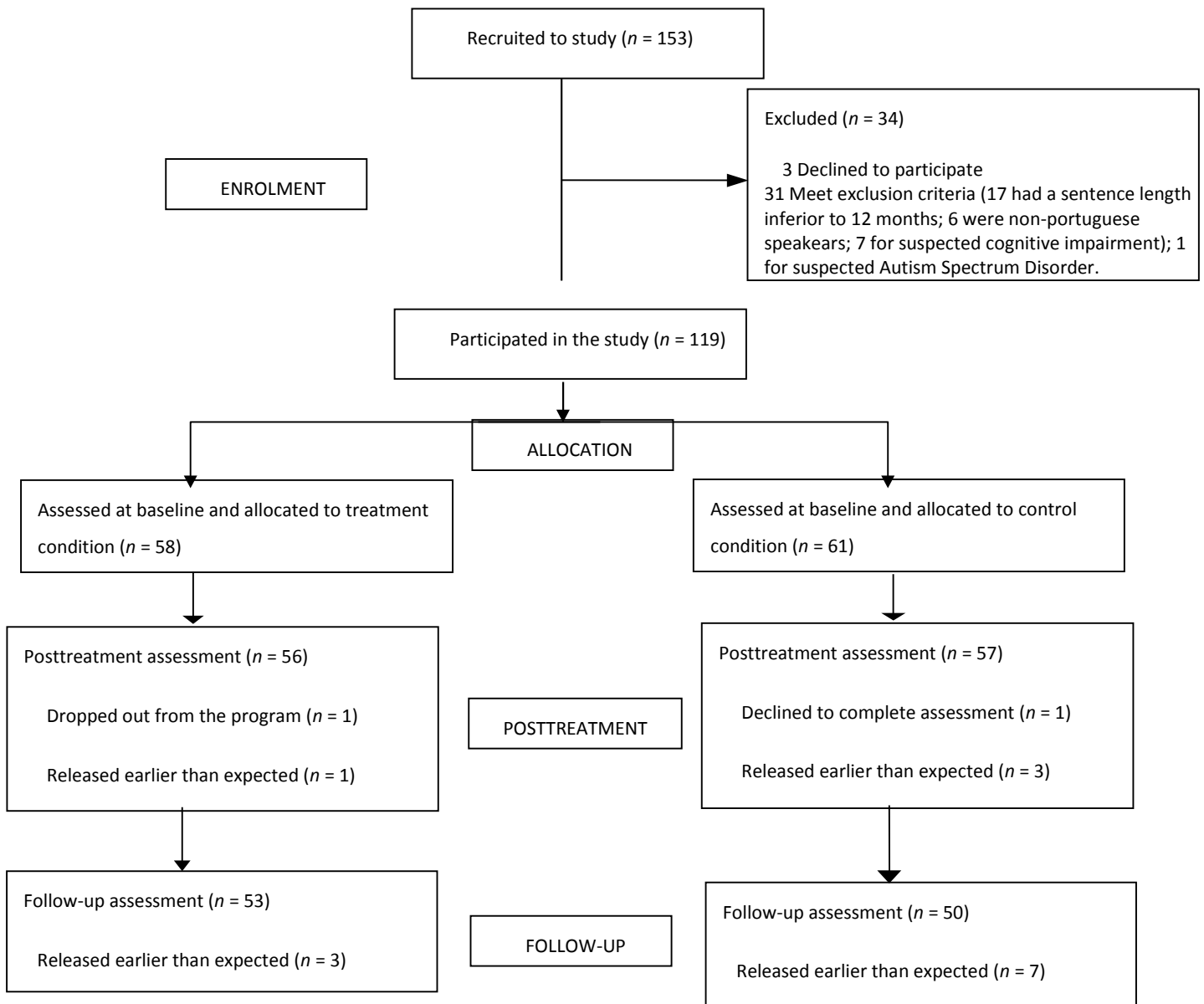
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Figure 1.

Flowchart of detained youth participation



PSYCHOPATHY.COMP: PROMOTING A COMPASSIONATE MOTIVATION

Table 1.

Means and Standard Deviations for Outcome Measures by Groups at Baseline, Post-Treatment, and 6-Month Follow-Up. Conditional Models with Condition as Predictor of the Initial Level (Intercept) and Rate of Change (Slope) in Outcome Measures

	Baseline		Posttreatment		6-Month Follow-up		Intercept		Slope		GMA <i>d</i> and 90% CI for GMA <i>d</i>
	Treatment Group	Control Group	Treatment Group	Control Group	Treatment Group	Control Group	B ^a	<i>p</i>	B ^b	<i>p</i>	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>					
Shame	8.67 (7.03)	7.87 (6.64)	7.08 (5.65)	9.29 (6.71)	5.82 (5.94)	10.61 (7.80)	.657	.567	-2.776	.000	.81 [.32; 1.31]
Fears of Compassion											
Give Compassion	20.91 (10.33)	20.20 (9.40)	17.41 (10.65)	22.09 (9.32)	13.43 (9.07)	21.75 (9.02)	.525	.773	-4.489	.000	.91 [.41; 1.41]
Receive Compassion	17.24 (11.55)	15.37 (11.85)	13.42 (9.57)	19.13 (11.32)	11.05 (10.50)	17.50 (11.83)	-.179	.923	-3.346	.000	.57 [.20; .94]
Self-Compassion	15.12 (13.78)	11.71 (13.28)	11.27 (12.01)	15.17 (13.24)	7.35 (9.84)	15.54 (14.84)	2.835	.253	-5.578	.000	.82 [.36; 1.29]
Social Safeness	39.59 (8.70)	41.61 (8.60)	41.33 (8.80)	39.75 (7.92)	43.87 (9.13)	40.32 (7.32)	-1.619	.246	2.604	.002	.60 [.10; 1.11]
Self-Compassion	85.21 (15.34)	86.47 (14.02)	90.42 (15.76)	83.04 (17.16)	94.24 (15.07)	81.45 (18.13)	-1.206	.655	7.042	.000	.96 [.38; 1.54]
Compassion for Others	62.95 (10.04)	63.08 (10.76)	64.05 (10.69)	62.84 (9.82)	66.43 (9.72)	60.76 (10.58)	-.760	.674	3.213	.000	.62 [.17; 1.07]

Note: GMA *d* = growth modeling analysis

^aThe intercept reflects group differences between treatment and control groups at baseline.

^bThe slope reflects group differences between treatment and control groups on the trajectory of change in the dependent variables over time. Considering the dummy coding used (control group = 0; treatment group = 1), a negative slope indicates a decrease in those variables in treatment participants while a positive slope indicates an increase in those variables in the treatment group.

Table 2.

Good fit indices and mediation effects of compassion-related variables on the changeability of psychopathic traits following parallel processes Latent Growth Curve Models (LGCM)

Mediator ^a	Outcome	RMSEA	90% CI for RMSEA	CFI	SRMR	B (SE)	<i>P</i>	Effect Sizes and 95% CI
Fears of Receiving Compassion								
	YPIST	.138	[.087, .192]	.937	.091	-1.983 (1.031)	.054	-.30 [-.70; .11]
	YPISGM	.095	[.038, .150]	.961	.057	-.739 (.488)	.129	-.29 [-.85; .26]
	YPISCU	.165	[.118, .215]	.883	.095	-.684 (.393)	.082	-.25 [-.62; .12]
	YPISII	.061	[.000, .126]	.987	.046	-.749 (.433)	.083	-.31 [-.80; .17]
	PSCDT	.085	[.019, .142]	.973	.058	-1.997 (1.008)	.048	-.31 [-.71; .10]
	PSCDGM ^b	-	-	-	-	-	-	-
	PSCDCU	.103	[.046, .160]	.955	.062	-.702 (.433)	.113	-.29 [-.76; .19]
	PSCDDI	.087	[.023, .143]	.962	.042	-.706 (.424)	.096	-.33 [-.84; .19]
Self-Compassion								
	YPIST	.000	[.000, .096]	1.000	.060	-2.316 (.899)	.010	-.33 [-.70; .03]
	YPISGM	.000	[.000, .021]	1.000	.026	-.811 (.342)	.018	-.32 [-.72; .09]
	YPISCU	.040	[.000, .108]	.989	.051	-.670 (.263)	.011	-.24 [-.48; .01]
	YPISII	.000	[.000, .019]	1.000	.017	-.866 (.349)	.013	-.35 [-.70; .00]
	PSCDT	.000	[.000, .051]	1.000	.029	-2.049 (.746)	.006	-.33 [-.69; .02]
	PSCDGM ^b	-	-	-	-	-	-	-
	PSCDCU	.000	[.000, .078]	1.000	.033	-.560 (.110)	.023	-.24 [-.52; .05]
	PSCDDI	.000	[.000, .088]	1.000	.035	-.393 (.202)	.052	-.19 [-.47; .09]

Note: RMSEA = root mean square error of approximation; CI = confidence interval; CFI = comparative fit index; SRMR = standardized root mean square residual. SE = Standard Error. YPIS = Youth Psychopathic Traits Inventory-Short (YPIST = Total Score; YPISGM = Grandiose-Manipulative; YPISCU = Callous-Unemotional; YPISII = Impulsive-Irresponsible); PSCD = Proposed Specifiers for Conduct Disorder; (PSCDT = Total Score; PSCDGM = Grandiose-Manipulative; PSCDCU = Callous-Unemotional; PSCDDI = Daring-Impulsive). Effect sizes and CI are reported considering the standardized indirect effects (Cheung, 2009; Miočević et al., 2018).

^a All the other potential mediators did not predict changes in psychopathic traits, i.e., fears of giving compassion and in fears of self-compassion (both scales of the Fears of compassion Scales; FCS) as well as compassion (as measured by the Compassion Scale; CS).

^b Please note that mediation analysis on the prediction of changes in the PSCDGM are not displayed as condition was not a significant predictor of change over time for this variable (Ribeiro da Silva et al., 2021a).



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