Child Abuse & Neglect 99 (2020) 104255

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

Maltreatment experiences and psychopathology in children and adolescents: The intervening role of domain-specific self-representations moderated by age

Carla Sofia Silva[a,b,*], Maria Manuela Calheiros[a,b]

[a] Centro de Investigação em Ciência Psicológica, Faculdade de Psicologia, Universidade de Lisboa, Lisboa, Portugal
[b] Instituto Universitário de Lisboa (ISCTE-IUL), CIS-IUL, Lisboa, Portugal

ARTICLE INFO

Keywords:
Maltreatment
Self-representations
Externalizing problems
Internalizing problems
Children and adolescents

ABSTRACT

Background: Associations between maltreatment experiences and psychopathology symptoms in children and adolescents are well established. However, the role of domain-specific self-representations (SR) in those associations remains unexplored.
Objective: This multi-informant study aimed to explore the indirect associations between maltreatment experiences and children's and adolescents' psychopathology symptoms (i.e., internalizing and externalizing problems), through domain-specific self-representations, and the moderating role of age in those indirect associations.
Participants and setting: Participants were 203 children/adolescents (52.7 % boys), aged 8–16 years old (M = 12.64; SD = 2.47), referred to child/youth protection commissions, their parents, and case workers.
Method: Case workers reported on child/adolescent maltreatment, children/adolescents reported on SR, and parents reported on psychopathology symptoms.
Results: Controlling for chronicity of maltreatment and child/adolescent sex effects, multiple mediation path analysis revealed that: 1) higher levels of physical and psychological abuse were associated with less externalizing problems through more negative social SR; 2) higher levels of physical neglect were associated with more externalizing problems through more positive opposition SR; 3) higher levels of psychological neglect were associated with less externalizing problems through more negative physical appearance SR, and 4) associated with more externalizing problems through more negative opposition SR. Moreover, the indirect effects of physical and psychological abuse on internalizing and externalizing problems through instrumental SR were conditional on child/adolescent age.
Conclusion: Findings signal the relevance of preventing child/adolescent maltreatment and promoting the construction of positive and, foremost, realistic and adaptive self-representations as protection against maladjustment.

1. Introduction

Maltreatment experiences at home have consistently been associated with mental health problems in childhood and adolescence,

* Corresponding author at: Centro de Investigação em Ciência Psicológica, Faculdade de Psicologia, Universidade de Lisboa, Alameda da Universidade, 1649-013, Lisboa, Portugal.
E-mail address: carlasilva@psicologia.ulisboa.pt (C.S. Silva).

https://doi.org/10.1016/j.chiabu.2019.104255
Received 24 April 2019; Received in revised form 19 October 2019; Accepted 28 October 2019

with lasting effects into the adult years (Cicchetti, 2016; Shonkoff et al., 2012; Thibodeau, Masyn, Rogosch, & Cicchetti, 2019). Such mental health problems or psychopathology are often discussed in terms of two broad categories of symptomatic behaviour that relate to self-control or self-regulation: internalizing and externalizing behaviour problems (Achenbach, Ivanova, Rescorla, Turner, & Althoff, 2016). Even though both types of behaviour problems tend to co-occur (e.g., Eisenberg et al., 2009), each one also presents clearly distinctive features. Internalizing problems are self-directed behaviour problems such as depression, anxiety, social withdrawal, and somatic complaints, while externalizing problems involve other-directed behaviour problems, including aggression, opposition and delinquent behaviours (Achenbach, Rescorla, Dias, Ramalho, & Lima, 2014). Internalizing problems are often defined as problems of over-control, since they often entail a high level of behavioural inhibition, while externalizing problems are often referred to as problems of under-control, since they involve a greater difficulty in successfully inhibiting socially prohibited or inadequate behaviour, and in controlling impulses (Bornstein, Hahn, & Suwalsky, 2013; Eisenberg et al., 2009).

Both internalizing and externalizing problems have been found to be predicted by maltreatment experiences (e.g. Norman et al., 2012; Petrenko, Friend, Garrido, Taussig, & Culhane, 2012; Vachon, Krueger, Rogosch, & Cicchetti, 2015). Child maltreatment is broadly conceptualized as any act of commission (i.e., to do something) and/omission (failure to do something) by a parent or a caregiver which results or has the potential to result in serious physical or emotional harm, sexual abuse or exploitation (McCoy & Keen, 2013; Rivera, Fincham, & Bray, 2018). It is thus an umbrella term encompassing two broad categories: 1) child abuse, which involves acts of commission, and 2) child neglect, which involves omissions (McCoy & Keen, 2013). According to the World Health Organization, child maltreatment includes experiences of physical, sexual, and emotional abuse and neglect (Runyan, Wattam, Ikeda, Hassan, & Famiro, 2000).

Specific effects of different types of maltreatment on child/adolescent psychopathology symptoms have also been documented in the literature. Specifically, several studies have shown associations between physical abuse experiences and multiple outcomes related to externalizing problems, such as conduct problems, impulsivity, anger, and delinquent, aggressive and violent behaviour (e.g., Petrenko et al., 2012; Van der Put, Lanctôt, De Ruiter, & Van Vugt, 2015). Psychological abuse has been found to be strongly associated to depressive symptoms (Infurna et al., 2016). Psychological and physical neglect, in turn, have been associated with both internalizing and externalizing symptomatology (e.g., Infurna et al., 2016; Petrenko et al., 2012; Villodas et al., 2012). Following advances in disentangling these specific associations, research in the field has increasingly focused on investigating the processes underlying them (Cicchetti, 2016). However, research focused on elucidating those processes has generally neglected the analysis of self-system dimensions as potential intervening mechanisms.

1.1. Maltreatment experiences and child/adolescent self-representations

A considerable body of research has demonstrated that maltreatment experiences are also particularly detrimental to children's and adolescents' self-system, namely to their self-concept construction process (Berzenski, Madden, & Yates, 2019; Cicchetti, 2016; Harter, 1998, 2015; Kim & Cicchetti, 2006). In contemporary theories and research, self-concept is conceptualized as a multidimensional and dynamic system, in which information about the self is organized in multiple domain-specific self-representations (Harter, 2015; Oosterwegel & Oppenheimer, 2002). Self-representations (or self-schemas) consist of "cognitive generalizations about the self, derived from past experience, that organize and guide the processing of the self-related information contained in an individual's social experience" (Markus, 1977, p.1). These self-representations cluster into different domains, reflecting different categories of self-knowledge or behaviour dimensions, such as instrumental/competence, social, emotional, intelligence, physical appearance, and behavioural conduct (Harter, 2015; McConnell, 2011).

These self-schemas are crafted within social relationships through interactions with others, involving the self-relevant responses of other people (e.g., Oyserman, Elmore, & Smith, 2012), especially significant others (Cooley, 1902; Silva, Calheiros, & Carvalho, 2016; Silva & Calheiros, 2018). Particularly, the quality of individuals' attachment relationships since early childhood shapes their beliefs and expectations about their own ability to master the environment (Stronach et al., 2011). Surely, people rely on attachment experiences as a source of information for learning about themselves, through interactions with caregivers (Bowlby, 1973; Cicchetti, 2016). These generalizations about the contingency of significant others' behaviour and their own social competence are known as internal representational models (Bowlby, 1973; Bretherton & Munholland, 2008). When children experience parents as emotionally available, loving, and supportive of their mastery efforts, they will construct a model of the self as lovable and competent (Stronach et al., 2011). Conversely, children who experience attachment figures as rejecting, emotionally unavailable, and non-supportive, will construct a working model of the self as unlovable, incompetent, and generally unworthy (Bretherton & Munholland, 2008). Indeed, it is considerably consensual that maltreated children and adolescents show higher rates of insecure attachments with their primary caregivers than non-maltreated children and adolescents (e.g., Cicchetti, Rogosch, & Toth, 2006). Therefore, they are more likely to develop internal models of the self as inadequate or unworthy (Bretherton & Munholland, 2008; Harter, 1998; Stronach et al., 2011).

The unresponsive caregiving commonly associated with child/adolescent maltreatment may lead to negative biases in social information-processing, and children's and adolescents' expectations about such unresponsiveness may be integrated in their self-concept in the form of negative self-representations (Cicchetti, 2016; Harter, 1998, 2015; Stronach et al., 2011). Indeed, several studies have documented that children and adolescents with maltreatment experiences present more negative self-representations and other self-system outcomes (Arslan, 2016; Cicchetti, 2016; Oshri, Carlson, Kwon, Zeichner, & Wickrama, 2017; Toth, Gravener-Davis, Guild, & Cicchetti, 2013; Turner, Shattuck, Finkelhor, & Hamby, 2017). Neglectful parents, lacking in responsiveness, nurturance, encouragement and approval, are less likely to support the development of positive self-representations in their children; abusive parents often set unrealistic performance expectations that, being unattainable, cause feelings of personal failure in their children (Harter, 2015). If subjected to severe and chronic abuse, children and adolescents, more than merely constructing negative

self-perceptions, may come to view themselves as profoundly defective, at the level of domain-specific self-representations and one's sense of overall self-worth as well (Cicchetti, 2016; Harter, 1998). The negative self-representations, instilled in hostile family environments, become automatized, and increasingly resistant to change, especially from around 8 years old onwards, with the onset of the earlier phases of abstract thinking; at this stage, exposure to a predominant negative feedback may hamper children's cognitive advance and reinforce an all-or-none thinking pattern characteristic of middle childhood, leading children to view themselves in an overwhelmingly negative way (Siegler & Alibali, 2005). By preventing children's and adolescents' experiences of competence and autonomy, maltreatment experiences constrain their opportunities to construct self-representations that reflect those experiences, paving the way for the development of mental health problems (Ryan, Deci, & Vansteenkiste, 2016). However, little is known about the specific role of different self-representation domains in associations between maltreatment experiences and child/adolescent psychopathology.

1.2. Children's and adolescents' self-representations as predictors of behaviour

Theories converge in conceptualizing self-representations as cognitive constructs, crafted through the social interactions occurring within individuals' development contexts, and as forces for action (Oyserman et al., 2012). Indeed, social-cognitive theory and research have stressed the role of self-representations as pivotal predictors of individuals' behaviour (Bushman & Roy Baumeister, 2014). The role of the self in organizing and regulating behaviour has also recently emerged as a central focus of developmental theory and research (Harter, 2015). Self-processes perform organizational functions by providing expectations and guidelines that allow one to interpret life experiences and to maintain a coherent picture of oneself in relation to one's world. Self-processes also perform motivational functions by providing plans and incentives and by energizing the individual to pursue selected goals (e.g., Oyserman, 2015). They have also a protective function towards the goal of maintaining favourable impressions of one's attributes and to more generally maximize pleasure and minimize pain (Boden, Fergusson, & Horwood, 2008; Harter, 2015).

Accordingly, different self-representation domains have been related to diverse mental health outcomes in children and adolescents. For example, several studies have revealed a robust relationship between negative self-representations and depression (e.g., Cole, Jacquez, & Maschman, 2001). Negative social/relational self-representations served as a risk factor for multiple forms of peer adversities, such as peer victimization and rejection, which in turn influenced children's perceptions of their peers (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004; Salmivalli & Isaacs, 2005). Also, self-representations of school ability, peer acceptance, physical appearance, and physical abilities have been respectively linked to academic achievement, peer adjustment, and eating and exercise behaviours (Harter, 2015; Marsh & Craven, 2006; Tatlow-Golden & Guerin, 2017).

Research has also shown that children and adolescents often engage in false-self behaviour, that is, acting in ways that do not reflect one's true self (Harter, 2015). Such behaviour may include "not saying what you think", "expressing things you don't really believe or feel", "not stating your true opinion", and "saying what you think other people want to hear" (Goldner & Berenshtein-Dagan, 2016; Harter, Marold, Whitesell, & Cobbs, 1996; Harter, Waters, & Whitesell, 1997). This is a normative liability that emerges around 8–10 years of age, as children start to evaluate themselves more realistically and to display more negative self-representations, which may spur the manipulation of how the self is presented to the social world (Harter, 2015; Salley, Vannatta, Gerhardt, & Noll, 2010). However, caregivers who make their support and approval conditional upon the child or adolescent meeting very high, unrealistic or unattainable expectations (i.e., conditional support) put their children at risk of unhealthy levels of false-self behaviour (Harter, 1998, 2015). Adolescents who experience high levels of such conditional support are more likely to engage in false-self behaviours; that is, they may learn to suppress what they feel are true self-attributes, as an attempt to gather the needed approval, support, and validation from parental caregivers (Harter et al., 1996). Thus, despite the demonstrated predictive role of children's and adolescents' self-representations on their behaviour, understanding the specific mechanisms of how different self-representation domains are associated with different maltreatment experiences and behavioural problems could further shed light on post trauma psychopathology processes.

1.3. Age-related differences in self-representations and its relation to behaviour

From childhood to adolescence, with the emergence of abstract thinking, introspection, and self-reflection, and with the progressive definition and differentiation of social roles, the self becomes increasingly complex and differentiated (Harter et al., 1997). In that process, children/adolescents begin to search for a more coherent, sophisticated and abstract sense of self and of how they fit into their social worlds (Steinberg, 2013). Concurrently, the acquisition of new cognitive skills progressively leads to more realistic, but also more negative, self-representations (e.g., Salley et al., 2010). This ability can threat the self-system by increasing the discrepancy between real and ideal self-representations (Harter, 2015). Furthermore, an increasing ability to integrate differing self-attributes into a coherent and consistent sense of self often leads to experiences of conflict over seemingly contradictory self-representations in different social roles (e.g., Harter et al., 1997). Efforts to deal with such normative threats to the self-system may lead to the experience of some normative and transient emotional and/or behaviour difficulties. However, highly inappropriate socializing experiences and child-rearing practices may compromise children's and adolescents' self-construction process and lead to mental health problems (e.g., Harter, 2006, 2015; Orth, Robins, & Roberts, 2008).

In addition to these cognitive-developmental changes, research has supported the idea that self-perceptions may develop unevenly across domains (Cole, Maxwell et al., 2001; Harter, 2015; Salley et al., 2010). From late childhood and early adolescence onwards, there is a significant increase in social awareness, which leads to a greater self-awareness of how one's attributes are viewed by others (Vartanian, 2000). Especially, interpersonal attributes and social skills that influence one's social appeal become

increasingly salient (Harter, 2015). In their attempt to incorporate the standards and opinions of others, adolescents may develop conflicting self-guides while trying to meet often incompatible expectations across different relational contexts (Harter et al., 1996). These multiple socio-cognitive developmental changes throughout childhood and adolescence emphasize the importance of considering age as a potential moderator of association pathways linking maltreatment experiences, domain-specific self-representations, and psychopathology symptoms in children and adolescents.

1.4. The present study

Despite the existing research documenting associations between children's and adolescents' self-representations and their mental health outcomes, in the wide research literature documenting associations between children's and adolescents' maltreatment experiences and mental health difficulties, no studies have yet analysed the association pathways from such experiences to children's and adolescents' externalizing and internalizing problems through their domain-specific self-representations. However, research has shown that self-related variables can help explain underlying pathways from the experience of stressors to adaptive or maladaptive outcomes (e.g., Oyserman et al., 2012; Oyserman, 2015). In addition, research focused on analysing these pathways becomes particularly pertinent from middle-to-late childhood onwards, when children start discovering and creating their own unique selfhood as separate from that of their parents and others, and showing a higher sense of agency and self-coherence (Harter, 2015; Steinberg & Silk, 2002).

Therefore, the present study aimed to analyse the indirect associations between children's and adolescents' maltreatment experiences and psychopathology symptoms (i.e., internalizing and externalizing problems), through their domain-specific self-representations. Specifically, we hypothesized that subtypes of maltreatment experiences would be negatively associated with children's and adolescents' self-representations and positively associated with their internalizing and externalizing problems. We also hypothesized that maltreatment subtypes would be indirectly associated with child/adolescent psychopathology through different self-representation domains. Furthermore, given the multiple socio-cognitive developmental changes in the self-system throughout children's and adolescents' development, and since previous evidence has shown age differences in self-representations (e.g., Harter, 2015; Silva, Martins, & Calheiros, 2016), we also aimed to analyse the moderating role of age in these indirect pathways, in order to shed light on how these associations may be conditional on child/adolescent age. Given that from childhood to adolescence, self-representations progressively become more realistic and negative (e.g., Salley et al., 2010), associations between child/adolescent maltreatment experiences and internalizing and externalizing problems through domain specific self-representations may be stronger as age increases. Fig. 1 depicts the hypothesized moderated mediation model.

2. Method

2.1. Participants

Study participants were a convenience sample of 203 children and adolescents referred to, and with an open file in, Children and Youth Protection Commissions (CYPC), their mother and/or father, and their respective case worker. In this paper, the terms "mother"/"father" include substitute maternal/paternal caregiver, and the term "parents" includes substitute caregivers. Children and adolescents (52.7 % boys) ranged in age from 8 to 16 years old (M_{age} = 12.64 years, SD = 2.47). Most (n = 112; 54.9 %) lived with both parents, 83 (34.8 %) lived with the mother only (of these, 15 had frequent contact with the father), and 9 (4.4 %) lived with the father only (of these, 8 had frequent contact with the mother). Regarding participating parents, 188 mothers and 67 fathers participated in the study. In 52 cases (24.5 %) both parents participated, in 136 cases (67.7 %) only the mother participated, and in 15 cases (7.4 %) only the father participated. Mothers' age ranged between 25 and 63 (M_{age} = 40.69 years, SD = 7.44). Fathers' were aged between 21 and 74 (M_{age} = 42.42 years, SD = 8.06).

In addition, for 188 cases (92.2 %), the respective CYPC case worker participated in the study by filling out the Child Maltreatment Severity Questionnaire (MSQ; Calheiros, 2006; Calheiros, Silva, & Magalhães, in press) regarding each participating child and/or adolescent. In 101 of these cases (53.7 %), the MSQ was filled out by a psychologist, in 50 (26.6 %) by a social worker, in 8 (42.6 %) by a teacher, in 6 (3.2 %) by a social educator, in 5 (2.7 %) by an education technician, in 3 (1.6 %) by a lawyer/jurist, in another 3 (1.6 %) by a nurse, and in 2 (1.1 %) by a sociologist. In 10 (5.3 %) cases, the case worker did not indicate his/her profession. Most case workers filled out the MSQ for more than one case. Inspection of our data revealed that 89.9 % (n = 186) of participating children and adolescents whose case worker filled out the Child Maltreatment Severity Questionnaire experienced

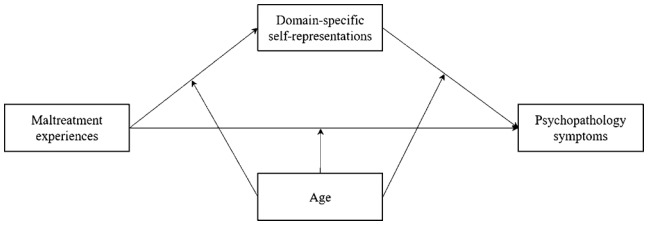

Fig. 1. The hypothesized model.

psychological neglect, 70.6 % (n = 144) experienced physical neglect, and 58.8 % (n = 120) experienced physical and psychological abuse. Chronicity was rated by the amount of time the child/adolescent protection file was open in the CYPC (e.g., Jackson, Gabrielli, Fleming, Tunno, & Makanui, 2014), in a five-point scale (i.e., 1 = less than one year; 2 = between one and two years; 3 = between two and three years; 4 = between three and four years; 5 = more than four years). Inspection of our data showed that 40.2 % (n = 82) of participating children and adolescents had an opened file in the CYPC for less than one year prior to data collection, 31.9 % (n = 65) between one and two years; 5.4 % (n = 11) between two and three years; 2.5 % (n = 5) between three and four years; and 3.4 % (n = 7) more than 4 years. For 16.7 % (n = 34) of the children/adolescents, the respective case workers did not provide this information.

2.2. Measures

2.2.1. Maltreatment severity questionnaire (MSQ; Calheiros, 2006; Calheiros et al., 2019)

This instrument measures children's and adolescents' maltreatment experiences. The CYPC case workers filled out the MSQ based on the information they had gathered regarding each participating child/adolescent. The MSQ consists of 18 items, each with four descriptors, which were rated by the case workers using a 5-point scale (1 = unknown/never occurred; 2 = a little severe; 3 = moderately severe; 4 = highly severe; 5 = extremely severe). The 18 items are organized in a three-factor structure, comprising the dimensions: 1) Physical Neglect, composed of 8 items describing parental omissions regarding the assurance and monitoring of the child's physical well-being and health, namely clothing, hygiene, housing conditions and contextual environmental security; 2) Physical and Psychological Abuse, consisting of 4 items describing abusive physical and psychological actions, namely coercive/punitive disciplinary methods, physically violent methods or verbal interactions that offend and denigrate the child, with the potential to disrupt psychological attributes, such as self-esteem; and 3) Psychological Neglect, which comprises 6 items describing omissions related to children's emotional development, mental health monitoring, school attendance, development needs, as well as inappropriate relationship patterns with attachment figures. Higher values in each maltreatment dimension indicate more severe maltreatment. A confirmatory factor analysis of the MSQ with the present sample revealed an acceptable model fit (χ^2 (115) = 271.57; χ^2/df = 2.36; CFI = .91; RSMEA = .08, CI90 % [.07, .09]; SRMR = .08) and good internal consistency (Cronbach's Alpha) values for all three factors: Physical Neglect (α = .80), Physical and Psychological Abuse (α = .79), and Psychological Neglect (α = .81);

2.2.2. Self-representation questionnaire (Martins, 2013; Silva, Martins et al., 2016)

This questionnaire aims to measure children's and adolescents' domain specific self-representations. It consists of 18 attributes (10 positive – e.g., happy, intelligent; and 8 negative – e.g., sad, lazy), in which children and adolescents rate themselves on a 5-point scale, from 1 (I am not at all like this) to 5 (I am exactly like this). This measure comprises six factors: instrumental (five items; e.g., responsible); social (four items; e.g., nice); emotional (three items; e.g., angry); physical appearance (two items; e.g., pretty); intelligence (two items; e.g., intelligent); and opposition (two items; e.g., stubborn). The negative attributes are reverse-scored. Thus, higher values in each dimension represent more favourable SR. In the present sample, the attribute "friendly" was excluded from subsequent analyses due to a highly skewed distribution (i.e., sk = -3.75; sk/SE = 21.49). A confirmatory factor analysis of this factor structure with the present sample with the remaining 17 attributes revealed a good model fit: χ^2 (116) = 209.45, $p < .001$; χ^2/df = 1.81; CFI = .92; RMSEA = .08, 90 % CI [.05, .07]; SRMR = .06. Internal consistency of the SR dimensions in the present sample, assessed through Cronbach's alpha, was acceptable to good: instrumental (α = .73), social (α = .68), emotional (α = .63), physical appearance (α = .84); intelligence (α = .84); and opposition (α = .70). For the social and emotional SR dimensions, the alpha coefficients fell below the .70 benchmark, usually considered to establish acceptable reliability. Given that a small number of items per factor can lead to lower alpha coefficients, particularly when items are less than seven (Swailes & McIntyre-Bhatty, 2002), we followed the recommendation of Clark and Watson (1995) and for these dimensions we additionally calculated the mean inter-item correlation – a correction factor provided by Cronbach (1951) which is independent of the number of factor items. The mean inter-item correlation for both the social and emotional dimensions (i.e., respectively .41 and .36) was within the .15–.50 recommended range, suggesting that the reported alpha coefficients can be considered adequate (Clark & Watson, 1995).

2.2.3. Child behaviour checklist (CBCL, Achenbach & Rescorla, 2001; Achenbach et al., 2014)

The CBCL was designed to assess children's and adolescents' psychopathology expression as perceived by parents/caregivers. Parents completed the internalizing and externalizing scales of the CBCL. The internalizing factor includes the depression, anxiety, withdrawal, and somatic complaints subscales. The externalizing factor includes the opposition and aggressive behaviour subscales. The items are scored by the parents on a scale of 0 (*not true for child*) to 2 (*very often true for the child*). In this study, internal reliability was good for the internalizing scale (α = .82) and excellent for the externalizing scale (α = .95) (Kline, 2000). Evidence for the validity of the CBCL has been provided by a large amount of studies developed in several countries (Achenbach et al., 2008). Namely, different kinds of analysis (e.g., covariance, multiple regressions) have shown that scores on the internalization and externalization CBCL scales are significantly higher for clinically referred than non-referred children, after controlling for several demographic variables (e.g., age, gender, socio-economic status) both in US and European samples (Achenbach et al., 2008). Also, significant interrelations have been consistently found between CBCL scales and the corresponding scales of Conners' (1997) instruments (Achenbach & Rescorla, 2001).

2.3. Procedure

This study was approved by the Ethics Committee of ISCTE-IUL. A request for permission to conduct the study, with a detailed explanation of its goals and data collection procedure, was made to all the Children and Youths Protection Commissions (CYPC) of three Portuguese districts – two from the mainland (Lisbon and Setúbal) and one from one Portuguese archipelago (Madeira), via e-mail. In addition, permission was also requested to the Madeira Domestic Violence Victims Support Team (MDVVST). Eighteen CYPC – 7 from Lisbon district, 4 from Setúbal district, and 7 from Madeira district – and the MDVVST agreed to collaborate in the study. In each of these services (CYPC and MDVVST), case workers were asked to select, among the cases they were assisting, those regarding children/adolescents aged between 8 and 16 years old, in which the evaluation carried out allowed the identification of at least one maltreatment action or omission listed in the MSQ. Then, at the end of the next case appointment, the case workers informed the families that their service was collaborating in a research study and asked the families if they would accept to be provided with more detailed information by the researcher regarding the aims and procedure of the study. Those who accepted were provided with detailed information regarding the goals, procedure, and ethical considerations of the study, followed by an invitation to participate in the study. After declaring to accept, parents signed the information and consent form, declaring to agree to participate and providing permission for their child's participation. Then, adolescents aged more than 12 years old also signed an information and consent form, and children under 12 years old provided informed assent to participate in the study. All participants were told that their participation was voluntary and that they could choose not to participate or to quit participating at any time, if they desired. Participant anonymity was guaranteed, and they were assured that information would be used only for research purposes. The questionnaires were individually administered to each participant (parents and children and adolescents). Case workers filled out the MSQ for the children/adolescents whose participation was authorized by the parents.

2.4. Data analysis

Initial analyses included descriptive statistics and bivariate correlations among the model variables (i.e., predictors, criterions, mediators, moderators, and covariates). Maltreatment dimensions (i.e., physical and psychological abuse, physical neglect, and psychological neglect) as well as children's and adolescents' SR domains were composite variables, computed by averaging their respective items. Following the ASEBA (Achenbach & Rescorla, 2001; Achenbach et al., 2014) manual instructions, mothers/fathers' reports of internalizing and externalizing problems were composites derived by summing up the items comprised in each scale.

2.4.1. Mediation analyses

Preceding the test of the proposed mediation model, a missing value analysis conducted with all model variables revealed that missing data were most likely at random [MCAR; Little's MCAR test chi-square = 106.27, $DF = 75$, $p < .05$, normed chi-square = 1.42 (so < 2), Ullman, 2001]. Therefore, missing data were dealt with using Full Information Maximum Likelihood (FIML), using *MPlus* 7.2. (Muthén & Muthén, 1998–2012Muthén and Muthén, 1998Muthén & Muthén, 1998–2012). The proposed mediation model was then tested using path analysis, performed with *MPlus* 7.2. (Muthén & Muthén, 1998–2012Muthén and Muthén, 1998Muthén & Muthén, 1998–2012), with bootstrap estimation. A multi-mediator path analysis was conducted to test indirect effects of maltreatment experiences (i.e., physical and psychological abuse, physical neglect and psychological neglect) on children's and adolescents' internalizing and externalizing problems, through their domain-specific SR. Given that previous studies have shown significant sex differences in self-representations (see Harter, 2015), child/adolescent sex was included in this model as a covariate. In addition, chronicity of maltreatment, defined by the amount of time the child/adolescent protection file was open in the CYPC (Jackson et al., 2014), was also included as a covariate in the model. Based on theoretical assumptions and on the results of the correlation analysis, SR dimensions shown to be significantly correlated, as well as internalizing and externalizing problems, were allowed to covary in the model. We used a bootstrap approach to test the indirect association hypothesis, using a nonparametric resampling method (bias-corrected bootstrap) (Preacher & Hayes, 2004) with 10,000 resamples drawn with replacement from the original sample to derive the 95 % confidence interval for the indirect effect. The following fit indexes and criteria were used to evaluate model fit: the relative χ^2 index (χ^2/df) values equal to, or lower than, 2 (Arbuckle, 2017), the comparative fit index (CFI) higher than .95, the root mean square error of approximation (RMSEA) and the standardized root mean residual (SRMR) lower than .08 suggest a good fit (Hu & Bentler, 1999; Schreiber, Nora, Stage, Barlow, & King, 2006).

2.4.2. Moderated mediation analyses

Finally, to examine the moderating role of children's and adolescents' age in the indirect associations between and among maltreatment experiences and psychopathology symptoms through domain-specific self-representations, two moderated multiple mediator models were tested, one for each outcome variable (i.e., internalizing and externalizing problem behaviour). Our goal was to analyse the indirect effects of children's and adolescents' maltreatment experiences on their internalizing and externalizing problems via their domain-specific self-representations, conditional on age, that is, at different age values, specifically at the 16th, 50th, and 84th percentiles of the distribution of child/adolescent age (i.e., 10, 13, and 15 years old, respectively). The moderated mediation model was estimated by PROCESS (version 3) macro for SPSS (Hayes, 2018), using Model 59. Therefore, the multi-mediator path analysis model previously described was tested with child/adolescent age specified as a moderator of all model pathways: 1) associations between maltreatment dimensions and self-representation (SR) domains; 2) associations between SR domains and internalizing and externalizing problems; and 3) associations between maltreatment dimensions and internalizing and externalizing problems. The bootstrap method was used to test the significance of the conditional direct and indirect effects, providing bootstrap

Table 1
Descriptive statistics and bivariate correlations among the model variables.

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Sex (1 = girls)			–												
2. Age	12.61	2.49	−.13	–											
3. Chronicity	1.76	.99	.03	.07											
4. Physical Neglect	1.62	.75	.10	.14	.22**	–									
5. Abuse	1.82	.98	.05	.03	−.07	.23**	–								
6. Psychological Neglect	2.47	1.09	.07	.31***	.16*	.71***	.37***	–							
7. Instrumental SR	3.77	.80	.34	−.18*	.02	−.07	−11	−.12	–						
8. Social SR	4.35	.65	.20	−.15*	.12	−.12	−22**	−.18*	.42***	–					
9. Emotional SR	3.96	.89	−.12	−.10	.02	.02	−.11	−.13	.26***	.15*	–				
10. Physical appear. SR	4.08	1.05	−.08	−.34***	−.08	−.13	−.00	−.17*	.34***	.28***	.16*	–			
11. Intelligence SR	3.74	.85	.12	−.24**	.02	−.17*	.05	−.20**	.35***	.31***	.12	.27***	–		
12. Opposition SR	2.86	1.19	−.07	−.49***	−.01	.04	.03	−.13	.40***	.18**	.35***	.29***	.26***	–	
13. Internalizing Pr.	10.62	6.68	.09	.15*	−.08	.01	.05	.04	−.26**	−.06	−.21**	−.08	−.16*	−.21**	–
14. Externalizing Pr.	11.47	9.35	.20**	.11	−.01	−.03	.18*	.19*	−.29***	−.01	−.15*	.11	−.08	−.31***	.49***

Note. $^*p < .05$ $^{**}p < .01$ $^{***}p < .001$. SR = Self-representations, *M* = Mean, *SD* = Standard deviation, Pr. = Problems.

confidence intervals and robust standard errors for parameter estimation (Hayes, 2018). Since age is a continuous variable, and the index of moderated mediation is provided for model 59 only if the moderator is dichotomous, the method described in Hayes (2015) could not be used in this analysis (Hayes, 2018). Each analysis utilized 10,000 bootstrap re-samples, and significance was determined based on 95 % bias-corrected confidence intervals (i.e., when the CI did not contain zero, the parameter was interpreted as significant) (Hayes & Preacher, 2010).

3. Results

3.1. Descriptive statistics and correlations

The means, standard deviations, and correlations among the variables included in the model are presented in Table 1. As shown in Table 1, regarding the maltreatment subtypes, and considering the whole sample, psychological neglect presents the highest mean level, followed by physical and psychological abuse, and physical neglect. Considering the 1–5 scale, our data show a moderate mean level of psychological neglect, and low mean levels of physical neglect and physical and psychological abuse. As for domain-specific self-representations (SR), social SR have the highest mean level, followed by physical appearance, emotional, instrumental, intelligence, and opposition SR. Concerning psychopathology, externalizing problems have a higher mean level than internalizing problems.

Regarding the correlations among the study variables, significant positive correlations were found between the three maltreatment dimensions (physical neglect, physical and psychological abuse, and psychological neglect). Chronicity of maltreatment was only correlated with physical neglect and psychological neglect. Physical neglect was also significantly negatively correlated with intelligence self-representations (SR), although this correlation was very weak. Physical and psychological abuse was significantly but weakly negatively correlated with social SR and positively though also weakly correlated with externalizing problems. Psychological neglect was significantly negatively correlated with social, physical appearance, and intelligence SR, and positively correlated with externalizing problems. Significant positive correlations were observed among all SR domains, except for the nonsignificant correlation between emotional and intelligence SR. Instrumental, emotional and opposition SR were significantly negatively correlated with both internalizing and externalizing problems. A significant, although low, negative correlation was also found between intelligence SR and internalizing problems. Finally, children's and adolescents' age was significantly positively correlated with psychological neglect and internalizing problems, but significantly negatively correlated with most SR domains, the stronger correlation being with opposition SR.

3.2. Mediation model

A multi-mediator path analysis model was tested examining the indirect associations between maltreatment experiences (i.e., abuse, physical neglect, and psychological neglect) and internalizing and externalizing problems, through children's and adolescents' instrumental, social, emotional, intelligence, physical appearance and opposition SR, controlling for the potential effects of child/adolescent sex and for maltreatment chronicity. This model presented a good fit to the data: χ^2 (22) = 27.71, p = .19; χ^2/df = 1.26; CFI = .98; RMSEA = .04, 90 % CI: .00, .07; SRMR = .04. Inspection of the model results revealed that intelligence SR were not associated with any maltreatment or psychopathology dimension. Therefore, the intelligence SR dimension was trimmed from the model, in order to prevent bias in the results, and the model was rerun. The new model also presented a good fit to the data: χ^2 (19) = 25.94, p = .13; χ^2/df = 1.37; CFI = .97; RMSEA = .04, 90 % CI: .00, .08; SRMR = .04. Fig. 2 depicts the unstandardized and standardized bootstrap parameter estimates of the path analysis model, as well as covariances among model variables. Tables 2 and 3

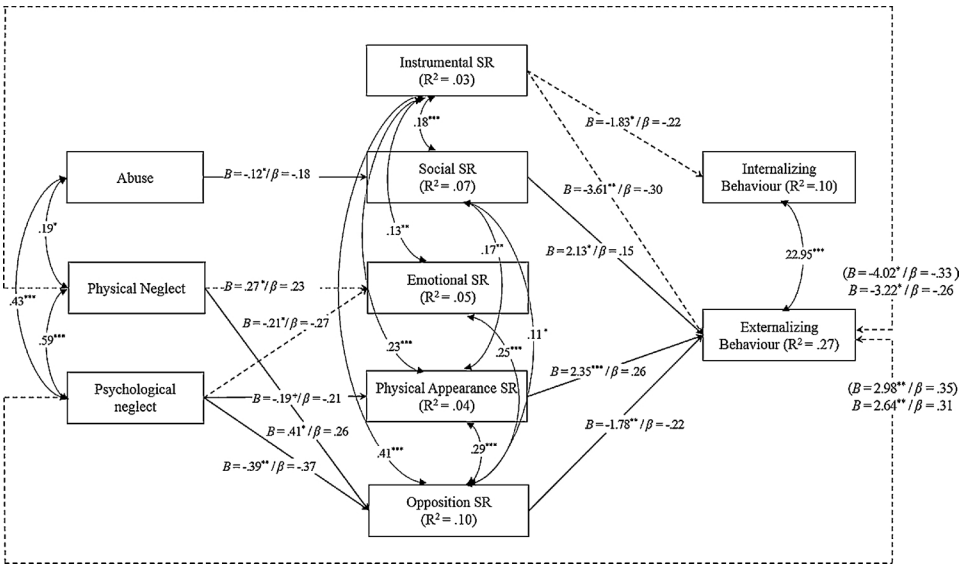

Fig. 2. Model examining the indirect associations between children's and adolescents' maltreatment experiences and internalizing and externalizing problems, through their domain-specific self-representations. Arrows in solid refer to significant indirect effects. Coefficients in brackets refer to the total effect of physical neglect and psychological neglect on externalizing problems. For ease of interpretation, only significant effects are represented. SR = Self-representations. $^{*}p < 0.05$ $^{**}p < 0.01$ $^{***}p < 0.001$.

present the unstandardized estimates and corresponding confidence intervals, along with the standardized point estimates, for domain-specific self-representations (Table 2) and psychopathology dimensions.

Results revealed significant indirect effects of: 1) physical and psychological abuse on externalizing problems through social SR, B = -.25, SE = .18, 95 % CI: -.79, -.01; β = -.03; 2) physical neglect on externalizing problems through opposition SR, B = -.73, SE = .36, 95 % CI: -1.65, -.18; β = -.06, and 3) psychological neglect on externalizing problems, through physical appearance SR, B = -.45, SE = .29, 95 % CI: -1.19, -.02; β = -.05, and opposition SR, B = .69, SE = .32, 95 % CI: .20, 1.46; β = .08 SR. In other words, children and adolescents with higher levels of physical and psychological abuse experiences reported lower social SR, which, in turn, were associated with lower levels of externalizing problems. Children and adolescents with higher levels of physical neglect reported higher opposition SR, which were subsequently associated with lower levels of externalizing problems. Children and adolescents with higher levels of psychological neglect reported: 1) lower physical appearance SR, which, in turn, were associated with lower levels of externalizing problems, and 2) lower opposition SR, which were subsequently associated with higher levels of externalizing problems.

Both total and direct effects of physical neglect and psychological neglect on externalizing problems were significant, although the direct effects were somewhat lower. Thus, results revealed partial indirect associations between: 1) physical neglect and externalizing problems through opposition SR; and 2) psychological neglect and externalizing problems, through physical appearance and opposition SR, and indirect-only associations between physical and psychological abuse and externalizing problems, through social SR. Model results did not reveal any indirect effects of the maltreatment dimensions on internalizing problems through children's and adolescents' SR. However, internalizing problems were predicted by instrumental self-representations, wherein more positive self-representations in that domain were associated to lower levels of internalizing problems.

3.3. The moderating role of children's and adolescents' age

Results of the moderated mediation analysis revealed a significant positive indirect effect of physical and psychological abuse on internalizing problems, through instrumental SR, only for the older adolescents (i.e., age = 15 years old): B = .76, SE = .49; 95 % CI: .009, 1.879. That is, only for the older adolescents, higher levels of physical and psychological abuse were associated with lower instrumental SR, which in turn were associated with higher levels of internalizing problems. Results also showed a significant positive indirect effect of physical and psychological abuse on externalizing problems, through instrumental SR, only for the older children/adolescents: B = 1.10, SE = .59; 95 % CI: .116, 2.401. That is, only for the older adolescents, higher levels of physical and psychological abuse were associated with lower instrumental SR, which in turn were associated with higher levels of externalizing problems. Both these conditional indirect effects were accounted for by the moderating effect of age on the association between physical and psychological abuse and instrumental SR. For descriptive purposes, we plotted these associations (Fig. 3) separately for the younger (i.e., 10 years old), mean age (i.e., 13 years old), and older (i.e., 15 years old) children/adolescents. Simple slope tests indicated that only for the older adolescents physical and psychological abuse experiences were associated to instrumental SR: B = -.23, SE = .10; 95 % CI: -.422, -.034.

Table 2
Model estimates for domain-specific self-representations.

Predictors	Domain-specific self-representations (SR)														
	Instrumental SR			Social SR			Emotional SR			Physical Appearance SR			Opposition SR		
	B (SE)	95 % CI	*B*	*B* (SE)	95 % CI	*β*	*B* (SE)	95 % CI	*β*	*B* (SE)	95 % CI	*β*	*B* (SE)	95 % CI	*β*
Abuse	−.06(.06)	−.18, .07	−.07	−.12(.06)	−.24, -.01	−.18	−.06(.07)	−.19, .09	−.06	.06(.09)	−.13, .23	.05	.09(.10)	−.09, .29	.08
Phys. Neglect	.03(.12)	−.22, .26	.03	.02(.10)	−.17, .23	.03	.27(.13)	.03, .53	.23	.00(.17)	−.33, .32	.00	.41(.15)	.11, .68	.26
Psych. Neglect	−.08(.08)	−.24, .08	−.11	−.09(.07)	−.23, .04	−.16	−.21(.11)	−.43, -.01	−.27	−.19(.11)	−.42, .01	−.21	−.39(.11)	−.59, -.17	−.37

Note. *B* = Unstandardized estimates; *SE* = Standard error; CI = Confidence interval; *β* = Standardized estimates; Phys. = Physical; Psych. = Psychological.

Table 3
Model Estimates for Psychopathology Dimensions (Internalizing and Externalizing Problems).

Predictors	Psychopathology					
	Internalizing problems			Externalizing problems		
	B (SE)	95 % CI	*β*	*B* (SE)	95 % CI	*β*
Instrumental SR	−1.83 (.72)	−3.28, -.43	−.22	−3.61 (.99)	−5.63, -1.72	−.30
Social SR	.74 (.96)	−1.13, 2.62	.07	2.13 (1.07)	.06, 4.24	.15
Emotional SR	−1.06 (.60)	−2.32, .04	−.14	−.05 (.75)	−1.52, 1.42	−.01
Physical Appearance SR	.17 (.41)	−.85, 1.25	.03	2.35 (.66)	1.07, 3.67	.26
Opposition SR	−.53 (.49)	−1.51, .39	−.09	−1.78 (.61)	−2.97, -.57	−.22
Abuse						
Direct effect	.19 (.53)	−.81, 1.25	.04	1.12 (.73)	−.33, 2.52	.11
Total effect	.23 (.57)	−.85, 1.39	.05	1.05 (.77)	−.47, 2.56	.11
Physical Neglect						
Direct effect	.10 (1.28)	−2.38, 2.57	.01	−3.22 (1.52)	−6.36, -.38	−.26
Total effect	−.45 (1.30)	−2.94, 2.13	−.05	−4.02 (1.65)	−7.36, -.87	−.33
Psychological Neglect						
Direct effect	−.14 (.59)	−1.27, 1.03	−.02	2.64 (.83)	.97, 4.23	.31
Total effect	.34 (.60)	−.79, 1.55	.07	2.98 (.94)	1.07, 4.75	.35

Note. *B* = Unstandardized estimates; *SE* = Standard error; CI = Confidence interval; *β* = Standardized estimates.

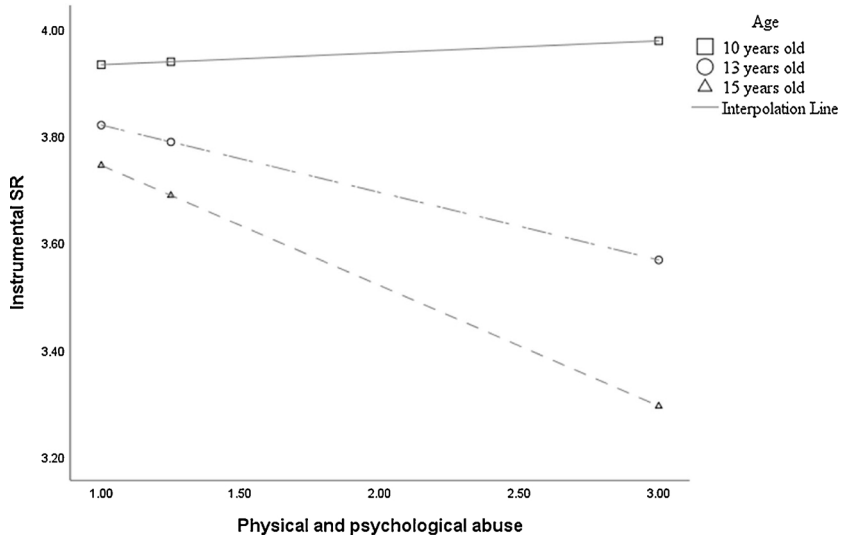

Fig. 3. Instrumental self-representations as a function of physical and psychological abuse and child/adolescent age.

4. Discussion

In this study, we aimed to go beyond documenting effects of exposure to maltreatment experiences on children's and adolescents' self-representations and of self-representations on their psychopathology symptoms, to predict that maltreatment experiences are also indirectly associated to psychopathology symptoms through their domain-specific self-representations. Considering the self – and, more specifically, self-representations – as a tool for meaning making and regulating behaviour (Harter, 2015; Oyserman et al., 2012), it could be expected that different domains of children's and adolescents' self-representations could function as explaining mechanisms of associations between maltreatment experiences and their psychopathology symptoms. Indeed, three patterns of indirect effects were found: two indirect negative effects of maltreatment dimensions on externalizing problems, and one positive indirect effect on externalizing problems. A first pattern was observed in the indirect effects of abuse and psychological neglect on externalizing problems. More specifically, the results revealed that abuse experiences were associated with lower levels of externalizing problems through social self-representations: children and adolescents with higher levels of physical and psychological abuse experiences reported more negative social self-representations, and, in turn, lower levels of externalizing problems. Similarly, psychological neglect was associated with lower levels of externalizing problems through physical appearance self-representations: children and adolescents with higher levels of psychological neglect reported lower physical appearance self-representations and, in turn, lower levels of externalizing problems. A second pattern, inverse to the first, was observed in the negative indirect effect of physical neglect on externalizing problems, through opposition self-representations: children and adolescents with higher levels of

physical neglect reported more positive opposition self-representations, which were subsequently associated with lower levels of externalizing problems. Finally, a third pattern regards the association of psychological neglect with higher levels of externalizing problems through opposition self-representations: children and adolescents with higher levels of psychological neglect reported more negative opposition self-representations, which were subsequently associated with higher levels of externalizing problems.

Taken together, these findings support the general premise that self-representations matter for behaviour (Harter, 2015; Oyserman et al., 2012), and are in line with previous studies showing associations between domains of self-concept and several child and adolescent mental health outcomes (e.g., Tatlow-Golden & Guerin, 2017). Furthermore, results support the assumption that children's and adolescents' self-representations not only are associated with their psychopathology symptoms, but also seem to play an intervening role in how these are associated with maltreatment experiences.

4.1. Associations between maltreatment experiences and self-representations domains

Different association patterns between maltreatment experiences and self-representation domains were observed: higher levels of psychological neglect were associated with more negative emotional, physical appearance, and opposition self-representations; physical and psychological abuse was modestly associated with more negative social self-representations; and physical neglect was associated with more positive emotional and opposition self-representations. This diversity of associations by maltreatment subtype may reflect differences in maltreating experiences. Specifically, the lack of a negative association between physical and psychological abuse and most self-representations domains, as well as the positive associations between physical neglect and emotional and opposition self-representations, may reflect a coping process to maintain positive self-views and a sense of control in a home environment that is hostile and threatening and/or where physical needs are not appropriately attended to (Cicchetti & Toth, 2015). On the other hand, the results showing that higher levels of psychological neglect were associated with more negative emotional, physical appearance, and opposition self-representations are in line with literature documenting that negative self-representations may develop from the chronic absence of attention and validation in a neglecting home (Cicchetti, 2016).

4.2. Associations between maltreatment experiences and adjustment problems

Associations between maltreatment experiences and internalizing and externalizing problems differed between the two psychopathology dimensions. While none of the maltreatment dimensions were associated with children's and adolescents' internalizing problems, all maltreatment dimensions were associated with externalizing problems. In addition, these associations differed across the different maltreatment dimensions. Interestingly, results did not reveal total nor direct associations between physical and psychological abuse experiences and psychopathology. That is, associations between that type of maltreatment and internalizing and externalizing problems was only indirect. This may be related to the fact that the levels of physical and psychological abuse in the present sample were low to moderate. However, research has also shown wide individual differences in adjustment among abused children (Hawkins & Haskett, 2014), and that some children even show adaptive functioning despite their abuse experiences (Cicchetti & Rogosch, 2012).

On the other hand, physical neglect and psychological neglect were both directly and indirectly associated with externalizing problems. The direct associations between neglect experiences and externalizing problems differed between the two types of neglect experiences: physical neglect (i.e., omissions regarding the assurance and monitoring of the child's physical well-being and health, including clothing, hygiene, housing conditions and contextual environmental security) and psychological neglect (e.g., omissions related to children's emotional development, mental health monitoring, school attendance, development needs, and inappropriate relationship patterns with attachment figures). While psychological neglect was associated with higher levels of externalizing problems, physical neglect was associated with lower levels of those problems. These divergent findings can, however, be framed in the existing literature. Indeed, emotional neglect of children, unresponsive or rejecting parenting, lack of parental availability for involvement in, and supervision of, child activities have been associated with higher levels of externalizing symptoms such as aggressive, hostile, oppositional, and delinquent behaviour (Petrenko et al., 2012; Villodas et al., 2012). Regarding the negative association between physical neglect and externalizing problems, children and adolescents whose basic physical needs are not appropriately met may be more passive, apathetic, and withdrawn (Dubowitz, 2009). They may be less self-assured (Hornor, 2014) and thus less prone to display problem behaviour directed at others, such as aggressiveness and oppositional behaviour. These different associations between neglect experiences and mental health outcomes is in line with the concept of multifinality, which posits that diverse outcomes may emerge from adverse or traumatic experiences (Rogosch & Ciccetti, 1996; Cicchetti, 2016).

The lack of significant associations between the maltreatment dimensions and children's and adolescents' internalizing problems is not surprising, given that psychopathology symptoms were not measured through self-report. Even though the multi-informant nature of this study is a methodological strength, since it reduces shared informant variance that could inflate associations among the study variables, previous research has shown discrepancies between reports from children/adolescents and adults (e.g., parents, teachers, mental health workers) regarding child/adolescent adjustment problems, with higher agreement for externalizing problems, and lower agreement for internalizing problems (Achenbach, 2006; Achenbach & Rescorla, 2001; Rescorla et al., 2013). Since externalizing problems are quite apparent, parents' reports may be more similar to their children's regarding such problems. Internalizing problems, on the other hand, are not as visible, and parents may not know that their children are feeling depressed or anxious, unless their children reveal these feelings (Rescorla et al., 2013). Indeed, both researchers and clinicians consider children and adolescents to be the least useful informants of externalizing problems (e.g., aggressive, oppositional behaviours), while preferring them as informants of their internalizing symptoms (Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Since previous

research has indicated that maltreating parents show less accuracy in recognizing children's emotions (Wagner et al., 2015), this discrepancy may be more pronounced in the context of child/adolescent maltreatment.

4.3. Indirect associations between maltreatment experiences and adjustment problems through domain-specific self-representations

Regarding the indirect association pathways, findings regarding the role of opposition self-representations are quite linearly interpretable. On the one hand, children and adolescents subjected to higher levels of physical neglect may be withdrawn and passive (Dubowitz, 2009; Hornor, 2014). Therefore, they may be more likely to view themselves as less defying and/or antagonist, and thus less likely to engage in externalizing problems. On the other hand, unresponsive caregiving environments, lacking in emotional support, are more likely to reinforce negative representational models of their attachment figures and themselves (Cicchetti, 2016; Harter, 1998, 2015; Stronach et al., 2011). Therefore, children and adolescents subjected to higher psychological neglect are more likely to develop more negative opposition views of themselves and, thus, to display higher levels of externalizing problems.

The roles of social and physical appearance self-representations seem, at first, somewhat surprising. Indeed, one would expect that more negative self-representations in any domain would be associated with higher levels of internalizing and/or externalizing problems. However, these results can be framed in the literature about the relation between maltreatment experiences and displays of false-self behaviour. Abuse and neglect experiences, reflecting conditional support, lack of validation, threats of harm, coercion, and enforced compliance all impel children and adolescents to feel that significant others do not value their true self (Harter, 1998, 2015). They may, thus, engage in defensive processing in order to increase their sense of competence (Cicchetti & Toth, 2015) and avoid behaviours that express their true-self, in an effort to gain the needed approval, support and validation from their parents (Harter et al., 1996). In support of this, findings of a recent study suggested that, when early and middle adolescents' psychological needs are addressed, they feel the security to express their true-self in their behaviour, especially with their parents (Goldner & Berenshtein-Dagan, 2016).

The fact that this pattern of relationships was observed only for the role of social and physical appearance self-representations is in line with the notion, increasingly emphasized in the literature, that self-representations may develop unevenly across domains (Cole, Jacquez et al., 2001, 2001b; Harter, 2015; Salley et al., 2010). Therefore, it is likely that associations between self-representations and child/adolescent psychopathology dimensions can vary across different self-representation domains. Specifically, research has shown that parents tend to emphasize social relations, respect for authority, and proper behaviour (e.g., Carlson & Harwood, 2003; Leyendecker, Lamb, Harwood, & Scholmerich, 2002), especially in more collectivistic cultures such as the Portuguese. In addition, interpersonal and physical appearance attributes are especially salient from late childhood/early adolescence onwards (Harter, 2015), given the marked increase in social awareness and scrutiny of physical appearance features (Vartanian, 2000). Indeed, social and physical appearance self-representations are the most strongly correlated to global self-esteem (Harter, 2000). These developmental characteristics may also account for the distinction between the role of social and physical appearance self-representations and the role of opposition self-presentations, in associations between maltreatment experiences and externalizing problems. That is, for children/adolescents with physical and psychological abuse and/or psychological neglect, undermined social and physical appearance self-representations may be more likely to stimulate attempts to engage in more appropriate (i.e., less externalizing) behaviours with the aim of attaining more support from their parents or caregivers (Goldner & Berenshtein-Dagan, 2016).

This diversity of indirect associations supports the concepts of multifinality and equifinality (Cicchetti & Rogosch, 1996; Cicchetti, 2016). More precisely, multifinality is illustrated by the findings showing that the same risk factor may be associated with different outcomes (i.e., psychological neglect associated with higher levels of externalizing problems through worse opposition self-representations, and with lower levels of externalizing problems through worse physical appearance self-representations). The concept of equifinality is illustrated by the findings showing that the same outcome may entail a diversity of pathways (i.e., externalizing problems associated to different maltreatment experiences through different self-representation domains).

Finally, results also revealed that physical and psychological abuse was indirectly associated with higher levels of both internalizing and externalizing problems through more negative instrumental self-representations, but only for the older adolescents. Integration of this finding in the research literature is quite straightforward. Abusive parents often set unrealistic performance expectations that, being unattainable, cause feelings of personal failure in their children (Harter, 2015). Thus, children and adolescents subjected to higher levels of physical and psychological abuse may come to view themselves as profoundly defective in the instrumental domain, that is, as less responsible, organized, well-behaved and hard-working, and to have an impaired sense of overall self-worth as well (e.g., Cicchetti, 2016; Harter, 1998). In turn, they may be more likely to display internalizing problems, in line with findings of previous research showing a robust relationship between negative self-representations and depression (e.g., Cole, Jacquez et al., 2001). This exacerbating role of age is in line with research showing that self-representations become more negative as age increases (e.g., Salley et al., 2010), and that older children/adolescents tend to present higher levels of internalizing problems (Bastiaanssen, Delsing, Kroes, Engels, & Veerman, 2014), such as depression and anxiety symptoms.

4.4. Strengths and limitations

This study adds to the research literature in this field, by being the first empirical contribution to the understanding of the role of children's and adolescents' domain-specific self-representations in associations between maltreatment experiences and psychopathology symptoms. Analysing the specific role of different self-representation domains in associations between different dimensions of maltreatment experiences and child/adolescent internalizing and externalizing problems contributes to disentangle the

complexity of different effect chains, thus providing a clearer picture of these associations. In addition, an important methodological strength of this study is that it relied on multiple informants (i.e., case workers, children/adolescents, and their parents), therefore ensuring methodological independence of the study measures and reducing shared informant variance bias. Nevertheless, by including only parents (mostly mothers) as informants of child adolescent psychopathology, valuable information may have been lost, especially regarding internalizing problems, which may be less visible to parents (Rescorla et al., 2013). Future studies focused on analysing these association pathways should include children and adolescents as informants of their psychopathology symptoms. In addition, the cross-sectional nature of the data upon which the model was tested calls for caution in interpreting the study results. Although the hypothesized indirect associations are soundly theoretically based, the data does not allow causal inferences based on the results. Future work should employ longitudinal designs in which the directionality of these effects can be tested explicitly.

4.5. Practical implications

Findings of this study provide a series of inputs for interventions with indicated maltreating families. Overall, results of this study point to the need to reduce child/adolescent maltreatment as a primary target in preventing negative self-representations and internalizing and externalizing problems in maltreated children and adolescents. However, most importantly, by shedding light on the specificity of associations among maltreatment subtypes, children's and adolescents' domain-specific self-representations, and their psychopathology symptoms, results of this study highlight that parenting intervention programmes aimed at preventing and/or reducing maltreatment should include multiple components. Specifically, these interventions should involve not only parents, but also children and adolescents (e.g., MacBeth et al., 2015). They should target not only parents' functioning, but also parent-child relationships/interactions, child functioning, and overall family functioning (Geeraert, Van den Noortgate, Grietens, & Onghena, 2004). For example, such interventions should provide parenting skills training, including parent-child interactions training, with child-directed interactions in which parents are instructed to follow their child's lead, and parent-directed interactions in which parents are taught to direct their child's behaviour and use consistent disciplinary strategies (Euser, Alink, Stoltenborgh, Bakermans-Kranenburg, & van IJzendoorn, 2015; MacBeth et al., 2015).

Another major practical implication of this study's results regards the need for interventions aimed at promoting positive and, especially, realistic and adaptive self-representations in children and adolescents with maltreatment experiences, as an important target of interventions aimed at preventing and reducing/treating problem behaviour in children and adolescents with higher relational risks at home. Indeed, unrealistic or inflated self-representations are unlikely to protect against maladjustment, since they provide no incentive for self-improvement (Harter, 2015). Thus, interventions aimed at enhancing self-representations in different domains should consider the reciprocal relation between self-representations and performance (Marsh & Craven, 2006), aiming for the realistic appreciation of one's strengths and weaknesses. Specifically, such interventions should incorporate praise and feedback strategies that are goal-relevant, attributional, and contingent upon performance within the area of competence related to the targeted self-representation domain (O'Mara, Marsh, Craven, & Debus, 2006). This study's findings suggest that such interventions should especially target instrumental, social, physical appearance and opposition self-representations, given the pivotal role these specific self-representation domains seem to have in pathways linking maltreatment experiences to children's and adolescents' psychopathology.

Acknowledgements

This research was funded by FCT - Fundação para a Ciência e Tecnologia, through a Doctoral Grant [SFRH/BD/90354/2012] awarded to Carla Sofia Silva. We thank the Children and Youth Protection Commissions for approving this study and are grateful to the children and adolescents, parents, and case workers for accepting to participate.

References

Achenbach, T. M. (2006). As others see us: Clinical and research implications of cross-informant correlations for psychopathology. *Current Directions in Psychological Science, 15*, 9–98.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles.* Burlington: University of Vermont, Research Center for Children, Youth, and Families.

Achenbach, T. M., Becker, A., Döpfner, M., Heiervang, E., Roessner, V., Steinhausen, H. C., & Rothenberger, A. (2008). Multicultural assessment of child and adolescent psychopathology with ASEBA and SDQ instruments: Research findings, applications, and future directions. *Journal of Child Psychology and Psychiatry, 49*(3), 251–275.

Achenbach, T. M., Ivanova, M. Y., Rescorla, L. A., Turner, L. V., & Althoff, R. R. (2016). Internalizing/externalizing problems: Review and recommendations for clinical and research applications. *Journal of the American Academy of Child and Adolescent Psychiatry, 55*(8), 647–656.

Achenbach, T. M., Rescorla, L. A., Dias, P., Ramalho, E., & Lima, V. S. (2014). *Manual do Sistema de avaliação Empiricamente Validado (ASEBA) para o período pré-escolar e do período escolar-Um sistema integrado de avaliação com múltiplos informadores.* Braga: Psiquilibrios Edições.

Arbuckle, J. L. (2017). *IBM SPSS Amos 25 user's guide.* Chicago, IL: SPSS Inc. Development Corporation, SPSS Inc.

Arslan, G. (2016). Psychological maltreatment, emotional and behavioral problems in adolescents: The mediating role of resilience and self-esteem. *Child Abuse & Neglect, 52*, 200–209.

Bastiaanssen, I. L., Delsing, M. J., Kroes, G., Engels, R. C., & Veerman, J. W. (2014). Group care worker interventions and child problem behavior in residential youth care: Course and bidirectional associations. *Children and Youth Services Review, 39*, 48–56.

Berzenski, S. R., Madden, A. R., & Yates, T. M. (2019). Childhood emotional abuse characteristics moderate associations with adult psychopathology and caregiving. *Child Abuse & Neglect, 87*, 77–87.

Boden, J. M., Fergusson, D. M., & Horwood, L. J. (2008). Does adolescent self-esteem predict later life outcomes? A test of the causal role of self-esteem. *Development and Psychopathology, 20*(01), 319–339.

Bornstein, M. H., Hahn, C. S., & Suwalsky, J. T. (2013). Language and internalizing and externalizing behavioral adjustment: Developmental pathways from childhood to adolescence. *Development and Psychopathology, 25*(3), 857–878.
Bowlby, J. (1973). *Attachment and loss: Separation, vol. 2*. New York: Basic Books.
Bretherton, I., & Munholland, K. A. (2008). Internal working models in attachment relationships: A construct revisited. In J. Cassidy, & P. R. Shaver (Eds.). *Handbook of attachment: Theory, research and clinical applications* (pp. 89–114). New York: Guilford Press.
Bushman, B. J., & Roy Baumeister, F. (2014). *Social psychology and human nature.* Belmont: Wadsworth.
Caldwell, M. S., Rudolph, K. D., Troop-Gordon, W., & Kim, D. Y. (2004). Reciprocal influences among relational self-views, social disengagement, and peer stress during early adolescence. *Child Development, 75*(4), 1140–1154.
Calheiros, M. (2006). *A construção social do mau trato e negligência: Do senso-comum ao conhecimento científico.* Coimbra: Fundação Calouste Gulbenkian.
Carlson, V. J., & Harwood, R. L. (2003). Attachment, culture and the caregiving system: The cultural patterning of everyday experiences among Anglo and Puerto Rican mother-infant pairs. *Infant Mental Health Journal, 24*, 53–73.
Calheiros, M.M., Silva, C.S., & Magalhães, E. (n.d.). *Child maltreatment severity questionnaire (MSQ) for professionals: Development, validity, and reliability evidence, assessment* (in press).
Cicchetti, D., & Rogosch, F. A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology, 8*(4), 597–600.
Cicchetti, D., & Rogosch, F. A. (2012). Gene x Environment interaction and resilience: Effects of child maltreatment and serotonin, corticotropin releasing hormone, dopamine, and oxytocin genes. *Development and Psychopathology, 24*(2), 411–427.
Cicchetti, D., & Toth, S. L. (2015). Child maltreatment. In (7th ed.). R. M. Lerner, & M. E. Lamb (Vol. Eds.), *Handbook of child psychology and developmental science: Vol. 3*, (pp. 515–563). New York: Wiley Socioemotional Processes.
Cicchetti, D. (2016). Socioemotional, personality, and biological development: Illustrations from a multilevel developmental psychopathology perspective on child maltreatment. *Annual Review of Psychology, 67*, 187–211.
Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology, 18*, 623–649.
Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309–319.
Cole, D. A., Jacquez, F., & Maschman, T. L. (2001). Social origins of depressive cognitions: A longitudinal study of self-perceived competence in children. *Cognitive Therapy and Research, 25*, 377–395.
Cole, D. A., Maxwell, S. E., Martin, J. M., Peeke, L. G., Seroczynski, A. D., Tram, J. M., ... Maschman, T. (2001). The development of multiple domains of child and adolescent self-concept: A cohort sequential longitudinal design. *Child Development, 72*(6), 1723–1746.
Conners, C. K. (1997). *Conners' rating scales-revised technical manual.* North Tonawanda, NY: Multi-Health Systems.
Cooley, C. H. (1902). *Human Nature and social order.* New York: Schribner's.
Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297–334.
Dubowitz, H. (2009). Tackling child neglect: A role for pediatricians. *Pediatric Clinics of North America, 56*(2), 363–378.
Eisenberg, N., Valiente, C., Spinrad, T. L., Cumberland, A., Liew, J., Reiser, M., ... Losoya, S. H. (2009). Longitudinal relations of children's effortful control, impulsivity, and negative emotionality to their externalizing, internalizing, and Co-occurring behavior problems. *Developmental Psychology, 45*(4), 988–1008.
Euser, S., Alink, L. R., Stoltenborgh, M., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2015). A gloomy picture: A meta-analysis of randomized controlled trials reveals disappointing effectiveness of programs aiming at preventing child maltreatment. *BMC Public Health, 15*(1), 1068–1081.
Geeraert, L., Van den Noortgate, W., Grietens, H., & Onghena, P. (2004). The effects of early prevention programs for families with young children at risk for physical child abuse and neglect: A meta-analysis. *Child Maltreatment, 9*(3), 277–291.
Goldner, L., & Berenshtein-Dagan, T. (2016). Adolescents' true-self behavior and adjustment: The role of family security and satisfaction of basic psychological needs. *Merrill-Palmer Quarterly, 62*(1), 48–73.
Harter, S. (1998). The effects of child abuse on the self-system. *Journal of Aggression, Maltreatment & Trauma, 2*(1), 147–169.
Harter, S. (2000). Is self-esteem only skin-deep? the inextricable link between physical appearance and self-esteem. *Reclaiming Children and Youth, 9*(3), 133–138.
Harter, S. (2006). Self-processes and developmental psychopathology. In D. Cicchetti, & D. Cohen (Eds.). *Handbook of developmental psychopathology* (pp. 370–415). (2nd ed.). New York: Wiley.
Harter, S. (2015). *The construction of the self: Developmental and sociocultural foundations.* New York: Guilford Publications.
Harter, S., Marold, D. B., Whitesell, N. R., & Cobbs, G. (1996). A model of the effects of perceived parent and peer support on adolescent false self behavior. *Child Development, 67*(2), 360–374.
Harter, S., Waters, P. L., & Whitesell, N. R. (1997). Lack of voice as a manifestation of false self-behavior among adolescents: The school setting as a stage upon which the drama of authenticity is enacted. *Educational Psychologist, 32*(3), 153–173.
Hawkins, A. L., & Haskett, M. E. (2014). Internal working models and adjustment of physically abused children: The mediating role of self-regulatory abilities. *Journal of Child Psychology and Psychiatry, 55*(2), 135–143.
Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research, 50*(1), 1–22.
Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (2nd ed.). New York: The Guilford Press.
Hayes, A. F., & Preacher, K. J. (2010). Quantifying and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate Behavioral Research, 45*(4), 627–660.
Hornor, G. (2014). Child neglect: Assessment and intervention. *Journal of Pediatric Health Care, 28*(2), 186–192.
Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55.
Infurna, M. R., Reichl, C., Parzer, P., Schimmenti, A., Bifulco, A., & Kaess, M. (2016). Associations between depression and specific childhood experiences of abuse and neglect: A meta-analysis. *Journal of Affective Disorders, 190*, 47–55.
Jackson, Y., Gabrielli, J., Fleming, K., Tunno, A. M., & Makanui, P. K. (2014). Untangling the relative contribution of maltreatment severity and frequency to type of behavioral outcome in foster youth. *Child Abuse & Neglect, 38*(7), 1147–1159.
Kim, J., & Cicchetti, D. (2006). Longitudinal trajectories of self-system processes and depressive symptoms among maltreated and nonmaltreated children. *Child Development, 77*(3), 624–639.
Kline, P. (2000). *Handbook of psychological testing* (2nd edition). New York: Routledge.
Leyendecker, B., Lamb, M. E., Harwood, R. L., & Scholmerich, A. (2002). Mothers' socialization goals and evaluations of desirable and undesirable everyday situations in two diverse cultural groups. *International Journal of Behavioral Development, 26*, 248–258.
MacBeth, A., Law, J., McGowan, I., Norrie, J., Thompson, L., & Wilson, P. (2015). Mellow Parenting: Systematic review and meta-analysis of an intervention to promote sensitive parenting. *Developmental Medicine and Child Neurology, 57*(12), 1119–1128.
Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology, 35*(2), 63–78.
Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science, 1*(2), 133–163.
Martins, A. C. (2013). *Auto-representação na Adolescência: Avaliação e Processo de Construção.* Lisboa: ISCTE-IUL 2013. Tese de doutoramento.
McConnell, A. R. (2011). The multiple self-aspects framework: Self-concept representation and its implications. *Personality and Social Psychology Review, 15*(1), 3–27.
McCoy, M. L., & Keen, S. M. (2013). *Child abuse and neglect* (2nd ed.). New York, NY: Psychology Press.
Muthén, L. K., & Muthén, B. O. (1998-2012). Mplus User's Guide. Seventh Edition. Los Angeles, CA: Muthén & Muthén.
Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Medicine, 9*(11), e1001349.
O'Mara, A. J., Marsh, H. W., Craven, R. G., & Debus, R. L. (2006). Do self-concept interventions make a difference? A synergistic blend of construct validation and meta-analysis. *Educational Psychologist, 41*(3), 181–206.

Oosterwegel, A., & Oppenheimer, L. (2002). Jumping to awareness of conflict between self-representations and its relation to psychological wellbeing. *International Journal of Behavioral Development, 26*(6), 548–555.
Orth, U., Robins, R. W., & Roberts, B. W. (2008). Low self-esteem prospectively predicts depression in adolescence and young adulthood. *Journal of Personality and Social Psychology, 95*(3), 695–708.
Oshri, A., Carlson, M. W., Kwon, J. A., Zeichner, A., & Wickrama, K. K. (2017). Developmental growth trajectories of self-esteem in adolescence: Associations with child neglect and drug use and abuse in young adulthood. *Journal of Youth and Adolescence, 46*(1), 151–164.
Oyserman, D. (2015). Identity-based motivation. In R. Scott, & S. Kosslyn (Eds.). *Emerging trends in the social sciences*. John Wiley & Sons.
Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self-concept and identity. In M. Leary, & J. Tangney (Eds.). *Handbook of self and identity* (pp. 69–104). (2nd edition). New York, NY: Guilford Press.
Petrenko, C. L., Friend, A., Garrido, E. F., Taussig, H. N., & Culhane, S. E. (2012). Does subtype matter? Assessing the effects of maltreatment on functioning in preadolescent youth in out-of-home care. *Child Abuse & Neglect, 36*(9), 633–644.
Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods Instruments & Computers, 36*(4), 717–731.
Rescorla, L. A., Ginzburg, S., Achenbach, T. M., Ivanova, M. Y., Almqvist, F., Begovac, I., ... Döpfner, M. (2013). Cross-informant agreement between parent-reported and adolescent self-reported problems in 25 societies. *Journal of Clinical Child & Adolescent Psychology, 42*(2), 262–273.
Rivera, P. M., Fincham, F. D., & Bray, B. C. (2018). Latent classes of maltreatment: A systematic review and critique. *Child Maltreatment, 23*(1), 3–24.
Runyan, D., Wattam, C., Ikeda, R., Hassan, F., & Famiro, L. (2000). Child abuse and neglect by parents and other caregivers. In E. G. Krug, L. L. Dahlberg, J. A. Mercy, A. B. Zwi, & R. Lozano (Eds.). *World report on violence and health* (pp. 57–81). Geneva, Switzerland: World Health Organization.
Ryan, R. M., Deci, E. L., & Vansteenkiste, M. (2016). Autonomy and autonomy disturbances in self-development and psychopathology: Research on motivation, attachment, and clinical process. In D. Cicchetti (Ed.). *Developmental psychopathology* (pp. 385–438). (3rd ed.). London, England: Wiley.
Salley, C. G., Vannatta, K., Gerhardt, C. A., & Noll, R. B. (2010). Social self-perception accuracy: Variations as a function of child age and gender. *Self and Identity, 9*(2), 209–223.
Salmivalli, C., & Isaacs, J. (2005). Prospective relations among victimization, rejection, friendlessness, and children's self- and peer-perceptions. *Child Development, 76*(6), 1161–1171.
Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modelling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323–338.
Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., ... Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*, e232–e246.
Siegler, R. S., & Alibali, M. W. (2005). *Children's thinking* (4th ed.). Upper Saddle River, N.J: Prentice-Hall.
Silva, C. S., & Calheiros, M. M. (2018). Stop yelling: Interparental conflict and adolescents' self-representations as mediated by their perceived relationships with parents. *Journal of Family Issues, 39*(7), 2174–2204.
Silva, C. S., Calheiros, M. M., & Carvalho, H. (2016). Interparental conflict and adolescents' self-representations: The role of emotional insecurity. *Journal of Adolescence, 52*, 76–88.
Silva, C. S., Martins, A. C., & Calheiros, M. M. (2016). Development and psychometric properties of the self-representation questionnaire for adolescents (SRQA). *Journal of Child and Family Studies, 25*(9), 2718–2732.
Steinberg, L., & Silk, J. S. (2002). Parenting adolescents. In M. H. Bornstein (Ed.). *Handbook of parenting: Vol. 1: Children and parenting* (pp. 103–133). Mahwah, NJ: Lawrence Erlbaum Associates.
Steinberg, L. (2013). *Adolescence* (8th edition). New York: McGraw Hill.
Stronach, E. P., Toth, S. L., Rogosch, F., Oshri, A., Manly, J. T., & Cicchetti, D. (2011). Child maltreatment, attachment security, and internal representations of mother and mother-child relationships. *Child Maltreatment, 16*(2), 137–145.
Swailes, S., & McIntyre-Bhatty, T. (2002). The "Belbin" team role inventory: Reinterpreting reliability estimates. *Journal of Managerial Psychology, 17*(6), 529–536.
Tatlow-Golden, M., & Guerin, S. (2017). Who I Am: The meaning of early adolescents' most valued activities and relationships, and implications for self-concept research. *The Journal of Early Adolescence, 37*(2), 236–266.
Thibodeau, E. L., Masyn, K. E., Rogosch, F. A., & Cicchetti, D. (2019). Child maltreatment, adaptive functioning, and polygenic risk: A structural equation mixture model. *Development and Psychopathology,* 1–14.
Toth, S. L., Gravener-Davis, J. A., Guild, D. J., & Cicchetti, D. (2013). Relational interventions for child maltreatment: Past, present, and future perspectives. *Development and Psychopathology, 25*, 1601–1617.
Turner, H. A., Shattuck, A., Finkelhor, D., & Hamby, S. (2017). Effects of poly-victimization on adolescent social support, self-concept, and psychological distress. *Journal of Interpersonal Violence, 32*(5), 755–780.
Ullman, J. B. (2001). Structural equation modelling. In B. G. Tabachnick, & L. S. Fidell (Eds.). *Using multivariate statistics* (pp. 653–771). (4th ed). Needham Heights, MA: Allyn & Bacon.
Vachon, D. D., Krueger, R. F., Rogosch, F. A., & Cicchetti, D. (2015). Assessment of the harmful psychiatric and behavioral effects of different forms of child maltreatment. *JAMA Psychiatry, 72*(11), 1135–1142.
Van der Put, C. E., Lanctôt, N., De Ruiter, C., & Van Vugt, E. (2015). Child maltreatment among boy and girl probationers: Does type of maltreatment make a difference in offending behavior and psychosocial problems? *Child Abuse & Neglect, 46*, 142–151.
Vartanian, L. R. (2000). Revisiting the imaginary audience and personal fable constructs of adolescent egocentrism: A conceptual review. *Adolescence, 35*(140), 639–662.
Villodas, M. T., Litrownik, A. J., Thompson, R., Jones, D., Roesch, S. C., Hussey, J. M., ... Dubowitz, H. (2012). Developmental transitions in presentations of externalizing problems among boys and girls at risk for child maltreatment. *Development and Psychopathology, 27*, 205–219.
Wagner, M. F., Milner, J. S., McCarthy, R. J., Crouch, J. L., McCanne, T. R., & Skowronski, J. J. (2015). Facial emotion recognition accuracy and child physical abuse: An experiment and a meta-analysis. *Psychology of Violence, 5*(2), 154–162.
Youngstrom, E., Loeber, R., & Stouthamer-Loeber, M. (2000). Patterns and correlates of agreement between parent, teacher, and male adolescent ratings of externalizing and internalizing problems. *Journal of Consulting and Clinical Psychology, 68*(6), 1038–1050.