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Out of sight is not out of mind: Associations between perceived maternal attachment and self-representations of youth in residential care moderated by gender and age

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Out of Sight is not Out of Mind: Associations Between Perceived Maternal Attachment and Self-Representations of Youth in Residential Care Moderated by Sex and Age

Abstract

The present study aimed to explore the associations between perceived maternal attachment and self-representations of youth in residential care (RC), considering the potential moderator role of youth's sex and age and the potential concurrent effect of frequency and type of family visits and of length of time in RC. To this end, a sample of 659 youth aged 11–18 (M = 15.65, SD = 1.72), from RC settings, filled out self-report questionnaires to evaluate their perceptions of maternal attachment and self-representations. Results indicated that lower perceived maternal attachment was associated with higher levels of global negative self-representations. Moreover, compared to young men, young women with lower levels of perceived maternal attachment perceived themselves as having more negative self-representations. No moderating effects of age were found. This study contributes to the literature in the field of RC with evidence regarding the association of perceived maternal attachment with self-representations and the moderating role of youth's sex, which informs the development of interventions with this vulnerable population.

Keywords: maternal attachment; self-representations; youth; sex; residential care

Public Policy Relevance Statement

This study highlights the importance of perceived maternal attachment for developing self-representations with youth living in residential care (RC) settings, and the role of youth's sex in these associations. The findings provide implications for the development of evidence-based interventions with this vulnerable population, specifically with young women.

Introduction

Youth that endure early maladaptive experiences and are separated from their families, are at higher risk for the development of mental health problems (Campos et al., 2019; González-García et al., 2017; Blind for review, 2017). Indeed, youth placed in out-of-home care (such as residential care homes) are often exposed to highly adverse experiences frequently characterized by inconsistent or inadequate parental care (e.g., physical and emotional abuse, and neglect of physical and emotional needs). Research reveals that young people living in residential care (RC) exhibit an insecure attachment compared to children living in family settings (Lionetti et al., 2015; van den Dries et al., 2009) and adopted adolescents (Barroso et al., 2017; Cassiba et al., 2023; Muzi & Pace, 2021). This may be a consequence of several pre-care risk factors and subsequent separation from their current familial context (Blind for review, 2011).

Early caregiving experiences and the quality of attachment play a pivotal role in the development of the self (Kim & Cicchetti, 2004; Harter, 2006, 2015; Waniel et al., 2008). Children from adverse family contexts (e.g., with maltreatment experiences or high levels of family conflict) are at greater risk for developing negative internal representations of the mother-child relationship and of themselves (Blind for review, 2016; 2018, 2020; 2021. Stronach et al., 2011). However, a secure attachment with their biological parents and substitute caregivers may serve as a protective factor (Chesmore et al., 2017). Indeed, a meta-analysis highlighted the role of parental support and warm caregiving practices in promoting positive development in children exposed to violence, such as maltreatment or intimate partner violence (Yule et al., 2019).

Youth living in RC settings may be at an even greater risk for the development of negative self-representations (Neagu & Sebba, 2019; Turner et al., 2017). In addition to the increased risk of developing insecure attachment patterns (e.g., Barroso et al., 2017; Cassiba et al., 2023; Lionetti et al., 2015), the negative social images attributed to youth in RC, the

stigma associated with this type of placement, and youth's perception of these negative

stereotypes may harm youth's identity construction and self-concept (Blind for review, 2016;

Blind for review, 2021; Blind for review, 2022; Schofield et al., 2017). Indeed, these youth

tend to have a worse image of themselves (Blind for review, 2011), which negatively impacts

mental health outcomes (Blind for review, 2021). However, to our knowledge, research

focused on the association between maternal attachment and self-representations of youth in

RC has been scarce. To increase understanding of the interplay between youth's perceptions

of maternal attachment and self-representations, an examination of more complex

associations among these variables is needed. Specifically, these associations might be

influenced by individual variables such as age and sex. Thus, in this study, we aimed to

explore the associations between perceived maternal attachment and self-representations of

youth in RC and the potential moderator role of youth's sex and age.

Attachment and development of self-representations

It has been acknowledged that the self is both a cognitive and social construction

(Harter, 2006) influenced by the social and relational context and by the individual's ability

to cognitively process information about the self. From a socio-cognitive perspective, self-

concept is conceptualized as a multidimensional and dynamic system that integrates and

differentiates information about the self into domain-specific and context-related self-

representations (Diehl et al., 2011; Blind for review, 2020). According to Markus (1977),

self-representations 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). They are created as individuals

process information about their experience (Epstein 1990; Oosterwegel et al. 2001) and

become increasingly differentiated as individuals develop (e.g., Oosterwegel &

Oppenheimer, 2002). They are, thus, the specific cognitive contents of one's self-concept

(Blind for review, 2016; Blind for review, 2016; Markus & Wurf, 1987). As social constructions, self-representations are also shaped by individuals' social contexts and interactions throughout their life course (Blind for review, 2020). The development of self-concept occurs mainly during childhood and adolescence and is strongly influenced by significant others, such as parents and peers (Carmichael et al., 2007; Paulus et al., 2018). Interactions with significant others are crucial for the construction of one's self-representations (Nurra & Pansu, 2009; Blind for review, 2021), given that close others have more information and are a more available source of feedback regarding self-knowledge (Bollich et al., 2011).

Attachment theory also emphasizes the importance of significant others in the construction of the self, specifically referring to the unique role of primary caregivers (Paulus et al., 2018). According to this theory, children form attachment (i.e., close affectional bond developed early in life between a child and the caregiver) with the available adult caregiver (Bowlby, 1980). Children search for proximity to the attachment figure and the knowledge of their availability preserves and maintains this affective bond (Bretherton, 1985). When the attachment figure is available, provides support and is responsive to children's needs, they develop a secure attachment (Bretherton & Munholland, 2008) that provides them with a secure base to explore the world and a safe haven to return to during times of greater distress (Sroufre, 2005).

Throughout the daily and repeated patterns of interactions with the attachment figures (i.e., parents), children form cognitive representations of the environment, others, and the self, based on their early attachment experiences, which Bowlby (1980) referred to as "internal working models" (Ainsworth, 1989; Bretherton & Munholland, 2008). These internal representations not only generalize into future interpersonal behaviors (Carmichael et al., 2007) but they also serve as a model through which we understand and evaluate ourselves

and others (Cicchetti, 2016; Paulus et al., 2018). Accordingly, if children experience parents as available, responsive, and supportive (i.e., secure attachment), they are more likely to build a representation of themselves as worthy and competent. In contrast, unresponsive or unpredictable caregiving typically leads to the development of an insecure attachment and internal representation of the self as unworthy and incompetent (Bretherton & Munholland, 2008; Paulus et al., 2018). In general, attachment security eases the construction of positive self-representations while attachment insecurity is a risk factor for constructing negative self-representations (Diehl et al., 2011; Waniel et al., 2008).

Previous research has explored the association between attachment and self-related variables (e.g., self-concept, self-esteem). Despite these efforts, the body of literature on this subject remains limited. Research with community samples has revealed that a secure attachment is positively associated with several self-concept domains in children and adolescents (Festorazzi et al., 2011; Paulus et al., 2018). On the contrary, a disturbed attachment is a risk factor for the development of a poor self-concept among institutionalized young children (Vacaru et al., 2017). Studies have also shown an association between attachment and youth's self-esteem (e.g., Arbona & Power, 2003) – the evaluative or affective component of the self-concept (Blind for review, 2016), defined as individuals' perception of their global value (Carmichael et al., 2007). In general, attachment security has been associated with high levels of self-esteem in adolescents (e.g., Gomez & McLaren, 2007; Keizer et al., 2019). Conversely, maltreated school age children that report an insecure maternal attachment exhibit lower levels of self-esteem (Kim & Cicchetti, 2004). Consistent with this evidence, a study developed with youth living in Japanese foster care has shown that maltreatment predicts depressive symptoms through attachment styles and low self-esteem (Suzuki & Tomoda, 2015). Research has also revealed that children's representations of the mother as low in care and support are associated with more negative self-representations

(Waniel et al., 2008) while children who report higher levels of secure attachment to parents perceive themselves as more academically and socially competent (Isabella & Diener, 2010). Taken together, these findings suggest that consistent and stable relationships with caregivers are crucial for the development and nurturing of a secure attachment (Howes & Spieker, 2016), which in turn might be associated with better psychological outcomes.

In the context of RC, contact with the family allows for the maintenance and improvement of the relationship between children and their families (Haight et al., 2003). Youth living in RC settings maintain their family ties and greater family connectedness is associated with more positive outcomes (McWey, 2004; McWey & Cui, 2018; Pinheiro et al., 2022). Specifically, young people perceive more support from their mother than from other family members (Arteaga & Del Valle, 2003; Pinchover & Attar-Schwartz, 2018). However, the establishment of affective bonds and the development self-representations can vary according to individual variables such as sex and age (Arteaga & Del Valle, 2001; Blind for review, 2016), and for that reason, we will further explore the moderating role of these individual variables in the current study.

The role of individual variables

Individual variables, such as youths' sex and age, may influence the relationship between previous attachment experiences and current self-representations of youth in RC. Regarding youth's sex, research within the field of attachment suggests that young women are more likely to be affected by parental separation (e.g. Ainsworth, 1989). Studies have shown that females tend to report higher levels of parental attachment overall (Buist et al. 2002), and, specifically, they tend to be more attached to their mothers than to their fathers (Fagan, 2019). A study conducted with Chinese adolescents has found similar results, where maternal attachment was found to be more strongly associated with self-evaluation than paternal attachment (Song et al., 2009). Moreover, previous studies have revealed sex

differences depending on specific self-concept domains. Specifically, research has shown that young men perceive themselves with better physical abilities and appearance than young women (Doyle et al., 2000; Blind for review, 2016). In contrast, young women tend to have better self-representations in the instrumental (e.g., responsible, organized) and social dimensions (Blind for review, 2016). Indeed, young women attribute a greater importance to social relationships in the way they describe themselves (Cross et al., 2000; Harter, 2006) and to emotional experiences (Abad et al., 2002). Social role theory (Eagly, 1999) proposes that traditional gender roles, i.e., the expected beliefs and behaviors of females and males, link gender identities to stereotypical profiles derived from cultural and environmental conditions. These roles influence peoples' self-concepts and become gender identities (i.e., sense of self as female or male; Eagly & Wood, 2012). From this view, females' behaviors and traits are associated with communal characteristics such as an orientation towards relationships and social functioning, given their tendency towards socioemotional roles. In contrast, males are perceived as more agentic due to their tendency towards task-oriented and instrumental roles and behaviors (Abele & Wojciszke, 2014; Diekman et al., 2017; Eagly & Wood, 2012). In the context of RC, studies have shown that, compared to male adolescents, female adolescents describe themselves as less competent, with more emotional and behavioral problems, and with more negative self-representations overall (e.g., Blind for review, 2020).

Regarding age differences, adolescence involves several physical, cognitive, social, emotional, and social changes (Harter, 2006). During adolescence, dependence on the attachment figures decreases and the need to explore the environment and autonomy increases (Keizer et al., 2019). However, attachment to parents remains important and influences individuals' development throughout the life cycle (Bowlby, 1980; Cicchetti, 2016), predominantly during stressful situations (Bretherton, 1985). In addition, as significant others, parents play a vital role in the development of self-representations (Nurra & Pansu,

2009). Adolescence is a crucial period to the development of self-representations (Diehl et al., 2011) since cognitive development at this stage enables the construction of domain-specific self-evaluations (Harter, 2006, 2015) and the ability to develop abstract attributes (or traits) into high-order self-concepts (e.g., intelligent) (Blind for review, 2016). In addition, there is a proliferation of social roles in different contexts (Harter, 2006, 2015) which leads to the construction of more context-related self-representations. Moreover, research in this field reveals that there is a decrease in positive self-representations in early adolescence that tends to recover during middle adolescence (Sánchez-Sandoval, 2015). Indeed, a study with youth in RC settings has found that older adolescents describe themselves as more competent and more positive overall self-representations than younger adolescents (Blind for review, 2020).

The present study

The theoretical and empirical literature described above points to an association between attachment and self-representations. However, to the best of our knowledge, this association has not been yet explored with youth in RC. Therefore, as a first goal, the present study aimed to address this gap in the literature by exploring the associations between perceived maternal attachment and current self-representations of youth living in RC settings, regardless of youth's individual variables. As a second goal, we also aimed to analyze the potential moderating role of youth's sex and age in those associations.

We hypothesized that higher levels of perceived maternal attachment security are associated with higher levels of positive self-representations and lower levels of negative self-representations (Hypothesis 1). Moreover, given that prior studies have shown differences in youth's self-representations according to sex and age (e.g., Blind for review, 2020; Blind for review, 2016), we also expect these associations are moderated by these variables. Specifically, we expect these associations to be stronger for young women than for young men (Hypothesis 2) and stronger as age increases (Hypothesis 3).

Method

Research Context

The current study is part of a broader project conducted in Portuguese RC youth settings. RC consists of the short or long-term placement of children or youth in child protection facilities that safeguard those who are at risk or danger, to ensure their safety, wellbeing, and positive development (Decree-law n. º147/99).

The Portuguese out-of-home care system includes foster care, generalist RC settings, specialized RC settings (i.e., emergency shelters, RC that address therapeutic or educational needs for children and youth with severe mental health problems), and autonomy apartments. In Portugal, despite ongoing efforts in promoting foster care as a preferable measure to protect children and youth who need to be removed from their home environment, residential care is still the primary form of out-of-home placement for these young people. The most recent official data show that, of the 6347 children and youth placed in out-of-home care in Portugal in 2022, only 3.6% were placed in foster care, while the vast majority (84.2%) were living in generalist RC settings (ISS, 2023). These data reveal the still insufficient investment in a protection system focused on the family potential. The present study was conducted with generalist settings, where most young people (68.9%) are 12 years or older (ISS, 2023). Youth placed in these facilities are accompanied by multidisciplinary teams composed by case managers and residential caregivers responsible for ensuring that their needs are addressed (Decree-law n. º 164/2019).

Participants

The sample was composed of 659 youth (n = 338; 53.1% young men) from 74 RC settings in Portugal, with ages between 11.90 and 18.87 years old (M = 15.65, SD = 1.72). The majority (n = 399; 63.3%) had not been placed in another RC setting previously and, among those who had, most (75.8%) had only one placement. These youth were placed in RC

due to neglect (51.9%), exposure to harmful behaviors (50.3%), deviant behaviors (e.g.,

substance use and truancy) without appropriate responses from their parents, legal

representative, or guardian to remove the situation (29.7%), psychological (15.4%) and

physical (14.3%) abuse, abandonment (9.6%), sexual abuse (4.7%), and/or for being obliged

to excessive activities that were detrimental to their development (4.3%). Moreover, most

youths had visits with the family (visits included visits of the family to the RC setting and

home visits) while in RC, only 19 participants never had any visits nor had an additional

measure of contact inhibition with their family (i.e., a court order that inhibited families from

contacting young people). Regarding length of placement in RC, participating youth had been

in RC for 0.08 to 18.89 years ($M = 4.76$, $SD = 3.45$, $Mdn = 3.45$). Finally, these youth

identified their mother as the maternal attachment figure ($n = 519$; 84.9%), followed by a

female family member ($n = 56$; 9.2%; i.e., aunt, grandmother, etc.), other mother substitutes

($n = 23$; 3.8%), stepmother ($n = 5$; 0.8%) adoptive mother ($n = 5$; 0.8%), godmother ($n = 2$;

0.3%) and female friend ($n = 1$; 0.2%).

At the moment of the data collection, the RC settings hosted between four to 53 youth

($M = 25.02$, $SD = 12.82$), and had between one and four case managers ($M = 2.42$, $SD =$

0.93). The mean ratio was of 4.83 youth per caregiver (Min = 1, Max = 41).

Procedure

Following approval by the Ethics Committee of [Blind for review], formal contacts

with the RC settings were conducted in order to obtain the necessary authorizations to collect

the data. All youth placed in these units for at least a month and aged 12 or more years old

were invited to participate, except if they presented major cognitive impairments (i.e., youth

with intellectual disability and related special education needs). This information and consent

for youth's participation was given by the respective RC unit director, given that in Portugal

they are considered legal representatives of these youth regarding formal decisions involving

them while in care. All youth who met the inclusion criteria and that were authorized to participate were included in the study, except those who declined to participate.

In the data collection session (in 2019) the study goals, and instructions for filling out the instruments were explained by researchers. Information regarding anonymity and confidentiality was also given and all participants signed an informed consent form prior to their participation. Youth with any reading and/or comprehension difficulties ($n = 157$; 2.7%) were previously identified by their case managers and were individually interviewed by one of the researchers, following the assessment protocol. The questionnaires filled out by the case managers were also collected, on the same day, in each RC unit. To ensure the data anonymity, a code system was created allowing to match up the questionnaires of both informants.

Instruments

Sociodemographic questionnaire

Youth's background information and data regarding moderator variables (i.e., youth's sex and age) and control variables (i.e., frequency and type of family visits; length of time in RC), were collected through a questionnaire filled out by the case manager (N = 203; 81.7% woman) of each youth. Regarding family visits, the frequency of each type of contact (i.e., family visits to the RC setting and home visits) was measured, such as: never (1); occasionally (2); once every two months (3); one time per month (4); one time every 15 days (5); one time a week (6); to more than one time a week (7).

Self-representations

The Self-Representation Questionnaire for Youth in Residential Care (SRQYRC; Blind for review, 2016) is composed of 23 items in the form of attributes (e.g., friendly, competent, sad), in which participating youth were asked to rate each attribute on a 5-point scale, indicating how each was descriptive of themselves, from 1 (i.e., *I am definitely not like*

that) to 5 (i.e., *I am totally like that*). The questionnaire is organized in six first-order

dimensions: social (four attributes; i.e., nice, friendly, helpful, funny); competence (four

attributes; i.e., intelligent, hard-working, committed, competent); relational (three attributes;

i.e., cherished, protected, loved); behavioral (six attributes; i.e., aggressive, recalcitrant,

misbehaving, conflicting, problematic, stubborn); emotional (four attributes; i.e., depressed,

traumatized, sad, lonely); and misfit (two attributes; i.e., misfit, neglected). These dimensions

are further organized in two second-order factors: global positive self-representations

(composed by the social, competence and relational dimensions) and global negative self-

representations (composed by the behavioral, emotional and misfit dimensions). The

validation study of this measure (Blind for review, 2016) revealed correlations between these

dimensions and youth's mental health outcomes. Specifically, that study found that the

positive self-representation dimensions were negatively correlated to mental health problems,

namely internalizing, social, thought and attention problems. In turn, the negative dimensions

were positively correlated with mental health problems, specifically, internalizing,

externalizing, social, attention and thought problems. The Cronbach's alpha revealed an

adequate internal consistency (Kline, 2015), except on the misfit dimension (social $\alpha = .81$,

competence $\alpha = .74$, relational $\alpha = .72$, global positive self-representation $\alpha = .83$, behavioral

$\alpha = .76$, emotional $\alpha = .73$, misfit $\alpha = .55$, global negative self-representation $\alpha = .80$). For

parsimony reasons, data analysis in this study focused only on the second-order factors.

Perceived Maternal Attachment

The Portuguese version (Guedes et al., 2018) of the Kerns Security Scale (KSS; Kerns

et al., 1996; Kerns et al., 2001) comprises 15 items assessing the perception of maternal

attachment, specifically: (a) the degree to which youth believe a particular attachment figure

is responsive and available; (b) the youth tendency to rely on the attachment figure in times

of stress; and (c) youth reported ease and interest in communicating with the attachment

figure. For each item, the participating youth were asked, following adapted Harter´s (1982) format "Some youth … but … Other youth", to indicate which of the two proposed statements they think represents them better (e.g., "Some youth find it easy to trust their mom BUT Other youth are not sure if they can trust their mom"). Then they had to specify whether they think the selected statement was *really true* or *sort of true* for them. Results were obtained by averaging responses across the items which were rated from 1 to 4, with higher scores representing higher levels of perceive maternal attachment. Prior research has shown evidence of both concurrent and convergent validity of the KSS. Regarding concurrent validity, children's reports of attachment security with their mother have been shown to be related to a better self-concept, higher levels of liking from peers, better observer ratings of interactions with friends, and to higher levels of acceptance by their mother (Kerns et al, 1996). As for convergent validity, KSS scores have been shown to be related to the scores obtained in projective measures of attachment (Contreras et al., 2000; Kerns et al., 2000), namely the Separation Anxiety Test (Resnick, 1993) and an attachment-doll interview measure (Granot & Mayseless, 2001).

To examine the psychometric properties of the 15 items KSS regarding perceived maternal attachment within the current sample, a Confirmatory Factor Analysis (CFA), using AMOS version 27.0, was conducted using the Maximum Likelihood Estimation (MLE). Following previous studies (e.g., Guedes et al., 2018; Kerns et al., 2015; Van Ryzin & Leve, 2012), a one factor model was tested. The final structure revealed a 13-item scale and was within the range of an acceptable model fit: $\chi^2(62) = 257.67$, $p < .001$, $\chi^2/df = 4.16$, CFI = .93, RMSEA = .07, and SRMR = .05 (Hu & Bentler, 1999; Kline, 2015). In this analysis, items two ("Some youth feel that their mothers intrude too much when they are trying to do something BUT Other youth feel that their mothers let them do things for themselves") and seven ("Some youth want to be closer to their mothers BUT Other youth are happy with the

closeness they have with their mothers") were removed in order to improve the model fit, because they presented non-significant factor loadings in the latent structure. The Cronbach´s alpha coefficient indicated good internal consistency (α = .86). In this study, we used the 13-item version.

Data analysis

Statistical data analysis was performed using IBM SPSS Statistics software, version 27.0 (IBM, SPSS Inc., Armonk, NY). First, descriptive statistics (mean and standard deviation) and bivariate correlations (using Pearson correlation coefficient and for ordinal variables Spearman correlation coefficient) among all the study variables were analyzed. Then, to test our first hypothesis, a multiple regression analysis was also performed to estimate the association between perceived maternal attachment and current youth's self-representation. Finally, to test our moderations hypotheses (i.e., H2 and H3), a moderation analysis using the PROCESS macro for SPSS, version 4.0 (Hayes, 2022) was conducted to examine the interaction effects of perceived maternal attachment with youth's sex and age on each dimension of youth's self-representations. Thus, to analyze the proposed moderation model, for each criterion variable, two multiple regressions analysis were conducted (i.e., one for each hypothesized moderator). Considering the significant correlation found for the frequency of youth's visits to their family home (described in the Results sections) it was included both in the multiple regression and moderation analyses as a covariate. PROCESS Model 1 was specified, in which the product between the predictor variable and the moderator variable is automatically calculated generating an interaction term. Variables were mean centered prior to analysis. We used bootstrap 95% confidence intervals based on 5000 bootstrap resamples to test the significance of all the effects, and the Johnson–Neyman technique for probing interactions, only for continuous variables (Hayes, 2022).

Results

Descriptive statistics and bivariate correlations

Table 1 presents the descriptive statistics and correlational analysis. Normality assumptions were poor; nevertheless, all variables revealed absolute values of skewness lower than three and of kurtosis lower than 10, which can be considered as non-severely deviated from the normal distribution (Kline, 2015).

The correlation analysis revealed several weak but significant correlations (Cohen, 1988) between the study variables. Perceived maternal attachment was positively correlated with global positive self-representations, and negatively with global negative self-representations. As for the moderator variables, age was negatively correlated with global negative self-representations and perceived maternal attachment. Sex had a positive correlation with perceived maternal attachment, and a negative correlation with global negative self-representations. Specifically, compared to young women, young men presented higher perceived maternal attachment and lower levels global negative self-representations. Length of time in RC was only significantly correlated with youth's age. Frequency of family visits to the current RC setting and home visits were positively correlated with perceived maternal attachment. Moreover, frequency of home visits was negatively correlated with global negative self-representations. Youth's age was negatively associated with frequency of family visits to the RC setting. Finally, youth's sex had a positive and significant correlation with frequency of home visits; thus, compared to young women, young men tend to visit their homes more frequently. Given the significant, although weak, correlations found for the frequency of youth's visits to their family home, this variable (i.e., frequency of home visits) was included in the model as a covariates. Regarding the frequency of family visits to the current RC setting with self-representation dimensions, considering its lack of correlations

with youth's self-representation dimensions, this variable was not included as a covariate in the model.

[INSERT TABLE 1 HERE]

Multiple regression analysis

Results of the multiple regression analysis for the perceived maternal attachment predicting self-representation dimensions, controlling for the potential concurrent effect of frequency of home visits are shown in Table 2. The regression models were only significant for the global negative self-representation dimension, $F(2,604) = 8.904$, $p < .001$. Thus, results reveal that lower levels of perceived attachment were associated with higher global negative self-representations (see Table 2).

[INSERT TABLE 2 HERE]

Moderation analysis

Results of the moderation analysis are presented in Table 3. Significant interaction effects were found between perceived maternal attachment and youth's sex on global negative self-representations ($B = .15$, $SE = .07$, $p = .035$, $R^2 = .06$). For descriptive purposes, we plotted these effects for young women and young men separately. Simple slope tests indicated that these effects were only significant for young women. As shown in Figure 1, young women with lower perceived maternal attachment security tended to describe themselves with higher global negative self-representations, compared to young women with higher levels of maternal attachment. Moreover, young men tendentially described themselves with less global negative self-representations.

[INSERT TABLE 3 HERE]

[INSERT FIGURE 1 HERE]

Discussion

The present study aimed to expand the existing literature on the associations between perceived maternal attachment and self-representations of youth living in RC settings. Moreover, we intended to analyze the moderating role of youth's sex and age controlling for the effect of frequency of home family visits.

Results of this study showed that youth with lower levels of perceived attachment security described themselves with more negative self-representations overall. These findings support our first hypothesis regarding negative self-representations and are consistent with previous research. Attachment theory highlights these associations within early interactions with primary attachment figures, mainly with the maternal figure (Bretherton & Munholland, 2008; Carmichael et al., 2007; Diehl et al., 2011). In particular, unresponsive caregiving environments, lacking in emotional support (i.e., insecure attachment) reinforce the construction of negative self-representations (e.g., Paulus et al., 2018). Thus, it seems, that the perception of a higher attachment protects these youth from developing negative self-representations. Contrary to expected, perceived maternal attachment was not associated with more positive self-representations. Although the correlation youth's perception of maternal attachment and their positive self-representations was positive, when accounting for the concurrent role of youth's age, the interaction term and the frequency of home visits, perceived attachment did not emerge as a significant predictor of positive self-representations. Thus, positive self-representations seem to be less dependent on perceived maternal attachment than negative self-representations. This might be explained by the fact that, while youth are in the context of residential care, other sources of self-knowledge might play a stronger role in informing youth's positive representations of themselves, such as feedback from the RC settings staff about youth's behavior and skills, especially from residential caregivers (e.g., Blind for review, 2023; Blind for review, 2022). As the closest

adult figures to these youth, and responsible for supporting them in their daily routines (Moore et al., 2018; Sulimani-Aidan, 2016), residential caregivers have a pivotal role in promoting youth's development of a positive sense of self, by also helping them make sense of, and integrate, their personal history and developmental trajectory (Sindi & Strompl, 2019). In addition, the support and care received from residential caregivers provide these youth with an experience of being valued, and of recognition of their individual worth (Smith et al., 2017).

Moreover, some of those associations were moderated by youth's sex. Specifically, compared to young men, young women with lower levels of perceived maternal attachment reported higher levels of global negative self-representations, which include the emotional, behavioral, and misfit dimensions, supporting our second hypothesis. These findings are consistent with previous research indicating that males tend to view themselves in a more positive way than females (Harter, 2015). In the context of RC previous research reveals that females describe themselves with more negative self-representations compared to males (Blind for review, 2020). Specifically, adolescent females tend to describe themselves as having more emotional and behavioral problems (Blind for review, 2020; Blind for review, 2016), possibly due to the greater focus females give to their emotional experience (Abad et al., 2002). Social role theory asserts that gender differences and similarities in behavior and cognitions reflect gender role beliefs derived from sociocultural stereotypes (Eagly, 1999; Eagly & Wood, 2012). Accordingly, studies have shown that females have a higher tendency towards socioemotional activities and assign greater importance to interpersonal relationships (Abele & Wojciszke, 2014; Diekman et al., 2017; Eagly & Wood, 2012). Based on this evidence, the perception of a weaker attachment with their mother may take a stronger emotional toll on girls, which can manifest in both emotional problems and disruptive behaviors which can subsequently lead to more negative self-representations. This is in line

with previous research indicating that girls in residential care, compared to boys, exhibit higher levels of internalizing and externalizing problems (Doerfler et al., 2009; Hussey & Guo, 2002). Thus, perceptions of lower levels of maternal attachment can be especially harmful to girls' self-construction. Our results thus suggest that, in the face of lower perceived attachment, young women living in RC settings are even more vulnerable to constructing more negative self-representations globally.

Despite the negative correlations found between age, perceived maternal attachment and negative self-representations, no moderating effects of age were found. Higher perceived maternal attachment was associated with less negative self-representations regardless of adolescents' age. Although the correlation analysis indicates that older adolescents perceive lower levels of perceived maternal attachment, the lack of results for the model analyzing the moderating role of age may indicate that the role of maternal attachment on youth's self-representations remains significant throughout adolescence. These findings are consistent with prior research indicating that, even though dependence on the attachment figures decreases with age (Keizer et al., 2019), attachment to parents remains important to individuals' development throughout life (Bowlby, 1980; Cicchetti, 2016).

Limitations and suggestions for future research

The present study contributes to existing literature on the relationship between perceived maternal attachment and self-representations of youth in RC. This study further adds to previous work by analyzing youth's self-representations, considered in a socio-cognitive approach, that is, as cognitive structures, focusing on their specific cognitive content and domain specificity (Blind for review, 2016; Markus & Wurf, 1987; Oosterwegel & Oppenheimer, 2002). In addition, to our knowledge, youth's self-representations had not yet been investigated as associated with perceived maternal attachment with youth in RC settings. Despite these contributions to the literature, some limitations should be considered

when interpreting the study's findings. Primarily, the correlational design precludes causal inferences regarding the proposed model. Although the hypothesized direction of associations was based on a sound theoretical and empirical background, future research should use longitudinal designs to provide more robust evidence of these associations examined in this study. Also, in this study, information regarding perceived maternal attachment and self-representations relied exclusively on youth self-reports that are subject to social desirability responses. A systematic review reveals that measures of attachment in middle childhood and adolescence have limited evidence for the adequacy of their psychometric properties (Jewell et al., 2019). However, psychometric analysis on the KSS reveal that is a reliable and valid measure of youth's perceived maternal attachment (e.g., Kerns et al, 1996). Moreover, the measure used for the frequency of contacts was simplistic. However, in the Portuguese RC system, there is no record of staff using standardized measures that allow access to the quality of interaction or relationships between the family and youths during visits. Considering the importance of the actual contact that these young people have with their families in terms of their perception of attachment and the construction of the self, we used the only measure that we had access to through the case managers – the recording of visits. In addition, the percentage of variance explained in the tested models are very small, which might be related to the fact that, while these youth are in residential care, other relevant sources of self-knowledge come into play, such as feedback from the residential care staff (Marshall et al., 2020; Blind for review, 2022). Their experiences in this new relational context and the development of new skills also provide them with opportunities to learn new positive information about themselves (Blind for review, 2023). These factors may contribute to diminish the explanatory power of perceived maternal attachment, notwithstanding its relevance to youth in RC. Finally, despite the results found for youth's perception of maternal attachment and the recognized relevance of maternal attachment to children and adolescents

self-development (e.g., Paulus et al., 2018; Waniel, et al., 2008) the inclusion of other significant others, namely the father or grandparents, in future studies could help untangle which self-representation domains are more sensitive to which attachment relationship. Moreover, future research could examine the same and different sex relations in the parent-youth attachment relationships. For example, research has indicated the unique and differentiated role of mother and father attachment on son's and daughter's self-esteem (Keizer et al., 2019).

Implications for practice and policy

Taken together, the findings of this study indicate that, in the context of RC, perceived maternal attachment matters for youth's self- representations, thus bearing important practical and policy implications. Overall, the results of this study point to the need for specific interventions with youth who have or at least perceive lower levels of attachment with their mother as a primary target in preventing negative self-representations. Evidence suggests that internal working models are malleable during adolescence (Ahmed et al., 2015), making it a potentially productive period to intervene with both youth and parents. The rapidly developing cognitive capacities of youth at this age make it possible to directly intervene regarding perceptions of self and others associated with negative internal working models. Specifically, interventions could include both young people, by targeting attachment expectations and biases, and the primary caregiver, promoting skills to provide sensitive and responsive care. These attachment-focused interventions could be combined with cognitive behavioral therapy broadening the scope of interventions and, possibly, the treatment outcomes (Bosmans, 2016). Furthermore, given the amount of time young people spend in RC and the significant role of professionals (Ferreira et al., 2020; Blind for review, 2017) it is crucial that the RC context provide them with support and learning opportunities.

Specifically, training and resources regarding young people's emotional and attachment specific needs should be provided to RC professionals (Vacaru et al., 2017).

Moreover, interventions in RC should also focus on enhancing positive relationships between youth and their family. Specifically, dyadic interventions aimed at developing healthy parent-child interactions could be useful in the context of residential care, specifically if they target the relationship with the primary caregiver (Knoverek et al., 2013). Besides improving youths' relationships with the family, these interventions may also contribute to improving the quality of attachment with the maternal figure.

Another practical implication of this study's findings is the need for interventions aimed at promoting positive and adaptive self-representations of youth in RC. Such interventions should include teachers and other people in the community who are in closer contact with youth, but especially residential caregivers, as pivotal agents. These interventions should focus on stimulating youth's realistic evaluation of their strengths and weaknesses (Harter, 2015), and on the use of praise and feedback strategies individually relevant targeting specific self-representation domains (O'Mara et al., 2006). Evidence shows that social-emotional learning-based interventions promote young people's development, specifically by working on developing positive attitudes toward the self (Taylor et al., 2017). Thus, efforts should also be made so that these strategies could also be used in social-emotional learning-based interventions in the school context, to promote youth's positive self-representations along with relevant socioemotional skills. Moreover, interventions should aim to foster the development of not only positive, but also adaptive self-representations taking into consideration individual characteristics. Our results suggest a greater vulnerability of young women to the effects of perceived maternal attachment insecurity on their global negative self-representations. This highlights the need for sex-specific interventions in the context of RC. Specifically, young women should receive more opportunities for success and

positive feedback to overcome their tendency to view themselves in a more negative way

(Isabella & Diener, 2010). Furthermore, in the context of RC, efforts should be made to

provide the opportunity to establish stable and continuous relationships (Blind for review,

2020; Neagu & Sebba, 2019) and to create a sense of belonging and security (Schofield et al.,

2017; Blind for review, 2022) which are essential elements for the development of positive

self-representations.

      In sum, this study contributes to the literature in the field of RC with evidence

regarding the association of perceived maternal attachment with self-representations and the

moderating role of youth's sex. Thereby, this study informs the development of specific

interventions with this vulnerable population and suggests that these interventions should

target not only the youth but also their family, specifically the maternal attachment figure,

and RC professionals.

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Table 1

Descriptive statistics and bivariate correlations of the study variable

	M	*SD*	1	2	3	4	5	6	
1. Global Positive SR	3.91	.56	-						
2. Global Negative SR	2.33	.62	-.22**	-					
3. Perceived Maternal Attachment	2.98	.69	.09*	-.15*	-				
4. Age	15.65	1.72	.05	-.09	-.21**	-			
5. Sex ᵃ	-	-	.03	-.20**	.13**	-.05	-		
6. Family visits to the RCS	2.45	1.83	-.01	-.01	.13**	-.17	-.01	-	
7. Home visits	3.69	2.09	.06	.09*	.10*	.06	.10*	-.03	-
8. Length of time in RC	4.76	3.45	.05	-.08	-.04	.24**	.08	-.12	-.02

Note. M = Mean; *SD* = Standard Deviation; SR = Self-representations; RCS = Residential care setting; RC = Residential care.

ᵃ 0 = young woman and 1 = young man.

*p < .05, **p < .01

Table 2

Regression analysis summary for self-representation dimensions predicted by perceived maternal attachment.

Predictor variables	Criterion variable											
	Global Positive SR						Global Negative SR					
	$B(SE)$	β	t	p	F	R^2	$B(SE)$	β	t	p	F	R^2
Perceived Maternal	.06(.04)	.08	2.08	.038			-.13(.04)	-.15	-3.60	<.001		
Attachment					2.505	.00					8.904	.03
Frequency of Home Visits	.01(.01)	.02	.060	.556			-.02(.01)	-.07	-1.78	.076		

Note. SR= Self-representations; B = Unstandardized estimates; SE = Standard error; β = Standardized estimates.

Table 3

Results of the moderation models.

	Criterion variable											
Predictor variables	Global Positive SR						Global Negative SR					
	$B(SE)$	t	p	F	R^2	R^2 change	$B(SE)$	t	p	F	R^2	R^2 change
Moderator: sex				1.43	.01	.00				10.21	.06***	.01*
Perceived Maternal Attachment	.04(.05)	.95	.339				-.18(.05)	-3.73	<.001			
Sex	.01(.05)	.13	.894				-.21(.05)	-4.23	<.001			
Interaction term	.05(.07)	.80	.427				.15(.07)	2.12	.035			
Frequency of Home Visits	.01(.01)	.01	.529				-.02(.01)	-1.38	.167			
Moderator: age				2.09	.01	.00				4.48	.03**	.00
Perceived Maternal Attachment	.07(.03)	2.07	.039				-.11(.04)	-2.84	.005			
Age	.02(.01)	1.47	.142				.03(.01)	1.74	.082			
Interaction term	.02(.02)	1.03	.306				.00(.02)	.20	.243			
Frequency of Home Visits	.01(.01)	.57	.569				-.02(.01)	-1.67	.096			

Note. SR= Self-representations; B = Unstandardized estimates; SE = Standard error

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

Figure 1

The moderating role of sex in the association between perceived maternal attachment and

global negative self-representations