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## We stick together! COVID-19 and psychological adjustment in youth residential care

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## ABSTRACT

**Background:** Children and youth residential care institutions were forced to introduce adaptations to their regular functioning in order to respond to the COVID-19 pandemic challenges.

**Objective:** The purpose of this study was to examine the effects of the lockdown on the adolescents' psychological adjustment and whether adolescents' perceived cohesion mitigated the increase of adolescents' psychological adjustment problems.

**Participants:** Participants were 243 adolescents aged 12 to 18 years, living in 21 different residential care institutions.

**Results:** The results suggested a moderating role of cohesion on the stability of adolescents' emotional distress across time. Lower levels of cohesion were related with higher emotional distress stability across time. On the contrary, as cohesion increased, the association between adolescents' emotional distress at T0 and T1 decreased.

**Discussion:** Results are discussed considering the mechanisms raised by the institutions to respond to the COVID-19 pandemic and minimize the negative effects on the psychological adjustment of adolescents living in residential care.

### 1. Introduction

According to the [UNICEF \(2020\)](#), the harmful effects of the pandemic COVID-19 have been affecting children and youth not equally and those who were already in disadvantaged or vulnerable situations are the ones suffering most of poor mental health and anxiety about returning to school and the future in general. This aspect assumes special relevance for adolescents living in residential care who, besides having to deal with common physical, neurodevelopmental and psychosocial changes during adolescence ([Baginsky & Manthorpe, 2020](#)), have to face the stressors associated with living away from the family, and the new stressors associated with the changes that resulted from the pandemic situation.

Residential care institutions had to face the challenges and constraints of this lockdown phase and ensure the imperative safety of children and adolescents ([Ritz et al., 2020](#)). The mandatory social distancing measures translated into a range of extra demands for

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these children's and adolescents' adjustment and well-being. The majority of adolescents in residential care were forced to significantly reduce or interrupt the face-to-face contact with parents, or other significant figures. Children had to be maintained at the homes (confinement), school physical attendance was substituted by remote schooling with additional technical challenges, and all the members of the homes were forced to spend more time together in a limited space. These restrictions pose additional challenges for adolescents in care, placing them in an especially vulnerable position (CFEFCFW, 2020). Some studies have found an increase of stress levels and emotional and behavioral problems (emotional distress and anger control problems) during this period. Studies show that the interruption of the regular face-to-face contacts with parents or significant figures may produce emotional insecurities and vulnerability in some adolescents with consequences on their well-being, emotional and behavioral adjustment (Abaid et al., 2010; Cohen & Bosk, 2020; Haffeejee & Levine, 2020; Montserrat et al., 2021; Neil et al., 2020; Vallejo-Slocker et al., 2020; Wong et al., 2020).

Despite the young people are not considered a risk group for severe physical illness due COVID-19, governments' measures implemented to contain the spread of the virus have affected their health and well-being. Save the children data (Loperfido et al., 2020) indicated that children and adolescents (11–17 years) from the general population reported an increase (83%) in negative feelings owing to the COVID-19 pandemic. Existing evidence clearly showed the relevant and profound impact in many psychological problems on the general population, in terms of mental health (Duan & Zhu, 2020). However, largely hidden is the impact of the pandemic on vulnerable children and adolescents, in particular those who are living in residential care institutions.

Recent research demonstrated the impact of the COVID-19 on adolescents' well-being, mental health and psychological adjustment (Montserrat et al., 2021; Vallejo-Slocker et al., 2020).

## 2. Challenges at the residential care management

In addition, the uncertainty and unpredictability related with the pandemic evolution has been posing major challenges related to the way residential care institutions manage their professional teams (Authors, under review). Empirical studies conducted with adolescents living in residential care emphasize the relevance of these figures on adolescents' behavioral and emotional adjustment, positive adaptation to the institution, well-being and resilience (Aguilar-Vafaie et al., 2011; Costa et al., 2019; Fergus & Zimmerman, 2005; Mota & Matos, 2015). The institutions had to balance the challenges of keeping their professionals safe, but also to deal with absences resulting from own family assistance, disease or prophylactic isolation (NISS, 2020a; 2020b). Consequently, the remaining staff has been confronted with dealing with overwhelming workload. In this exceptional conjuncture the residential care institutions have been forced to adopt different practices and to experience new challenges (Authors, under review). Although scientific knowledge regarding the impact of the pandemic on general people's life has been increasing, less empirical data regarding the main implications of the pandemic on the residential care institutions is available (Abaid et al., 2010; Cohen & Bosk, 2020; Montserrat et al., 2021; Vallejo-Slocker et al., 2020; Wong et al., 2020).

## 3. Psychological adjustment of adolescents living in residential care

Several studies have been showing that children and adolescents in residential care represent a high risk group for psychological, behavioral and social problems (e.g., Attar-Schwartz, 2008, 2009; Baker et al., 2007; Eltink et al., 2015; Gearing et al., 2014; Heflinger et al., 2000; Mills et al., 2013; Vinnerljung et al., 2005). This high vulnerability and many of these psychological difficulties are largely explained by the inadequacies of early childcare with primary caregivers, which often included parental inability to care, psychological, emotional, physical abuse, neglect and maltreatment (Costa et al., 2019; Pinchover & Attar-Schwartz, 2014; Van Dam et al., 2010). Anger issues have been found to be associated with higher levels of externalizing problems in children (Zeman et al., 2002) and adolescents (Silk et al., 2003). In a sample of maltreated children, Teisl and Cicchetti (2008) showed that poor emotion regulation accounted for aggression and disruptive behavior. Maltreated children are more likely to lack the skills to manage their negative emotions. This may also be due to the lack of opportunities to learn adaptive emotion regulation from previous interactions. In a longitudinal study, for example, Conger et al. (2003) found that anger and aggressive behavior could be particularly resistant to change, being in many cases involved in an intergenerational cycle. In addition, adolescents perceive the transition to the residential care as an undesirable event, coupled with a sense of abandonment and rejection that may activate vulnerability to risk situations (Mota & Matos, 2015). In fact, the transition represents a process of great emotional demand to adolescents, which can be accompanied, in most cases, by feelings of revolt, frustration and loss of the sense of belonging to the family. In this sense, adolescents in residential care settings may present a higher risk of developing behavioral and psychosocial problems (Mota & Matos, 2010). Further, anger control problems and emotional distress can be aggravated due to additional stressors such as the ones imposed by the lockdown measures.

Similar to the findings observed with the general population (e.g., Haugen et al., 2014; Matud, 2004; Rosenfield & Mouzon, 2013), gender effects are found on the behavioral adjustment of adolescents living in the residential care (Bongers et al., 2004; Guo & Slesnick, 2011; Knorth et al., 2008; Ojha et al., 2013; Ringle et al., 2010). Boys tend to adopt more reactive, violent, and deviant behaviors compared to girls (Mota et al., 2016; Tamres et al., 2002; Zimmermann & Iwanski, 2014). On the other hand, girls tend to report more internalizing problems such as depression and anxiety (Bongers et al., 2004; Guo & Slesnick, 2011; Ojha et al., 2013).

The length of stay in residential care has also been identified as an important factor on adolescents' psychological adjustment, despite the mixed findings. Some results showed that being institutionalized for a longer time is associated with improvements in academic performance, behavior and psychosocial functioning (Knorth et al., 2008; Ringle et al., 2010), but others did not find associations between length of stay and psychological adjustment, namely well-being, attachment and social effectiveness (Berger et al., 2009; Costa et al., 2019, 2020; Eulliet et al., 2008).

#### 4. The role of cohesion on psychological adjustment

Recently, a special attention has been called to the role of the residential care social climate for the child and adolescents' adjustment development (for a review [Leipoldt et al., 2019](#)). One important feature of social climate is cohesion. Cohesion has been defined as the emotional bond that connects people, meaning the levels of affection, friendship, and intimacy shared ([Olson et al., 1982](#)). Similarly, [Moos and Moos \(1981\)](#) conceptualized cohesion as the degree of help, commitment and support which family members provide each other.

Empirical findings showed that cohesion is a relevant construct in adolescents' mental health and psychological adjustment. Despite the extant literature in the family field, which consistently links family cohesion to youth adjustment (e.g., [Caples & Barrera, 2006](#); [Rivera et al., 2008](#); [Sbicigo & Dell'Aglio, 2012](#); [Shao et al., 2018](#)), little is known about these associations in residential care samples. However, some studies found that the social climate, characterized by cohesion and a perception of social support, is one of the most relevant factors associated with adolescents' adjustment during their placement in residential care, as well lower levels of psychological, behavioral and peer problems (e.g., [Pinchover & Attar-Schwartz, 2012](#); [Stone et al., 2020](#)). How adolescents in residential care managed COVID-19 and whether cohesion played a significant role on buffering the negative impact of the pandemic has, to the best of our knowledge, not yet been studied.

To address this gap, the main aim of this study was to analyze the adolescents' psychological adjustment across two assessment waves, before and during the pandemic, and the impact of cohesion on mitigating the increase of difficulties on psychological adjustment. Furthermore, the present study sought to gain a deeper knowledge of the vulnerabilities and potentialities of the residential care settings to respond to the pandemic scenario.

#### 5. The present study

Adolescents living in residential care can experienced feelings of loss, abandonment, and loneliness. In this context, adolescents are more vulnerable to the development of different psychological maladjustment problems. The discontinuities in the relationship with families, friendships, and the change daily routines, imposed by the COVID-19 pandemic restrictions may have increased emotional distress and anger control problems. However, research about this topic with adolescents living in residential care is still scarce. To address this gap, the present study sought to analyze the adolescents' psychological adjustment across two assessment waves, before and during the pandemic. It also aimed to investigate whether adolescents' perception of cohesion protect adolescents from developing increasing levels of behavioral problems during the pandemic situation. Two key hypotheses were addressed in this study. Controlling for gender and time living in the institution, we expected: (1) Adolescents' psychological adjustment (emotional distress and anger control problems) would be moderately stable over time (rank-order stability), this is, the pandemic has a homogeneous effect on the residential care adolescents; (2) A negative effect of cohesion on adolescents' emotional distress and anger control problems during the pandemic; (3) The association between adolescents' psychological adjustment scores at T0 and T1 will be moderated by cohesion. More specifically, when adolescents perceive high cohesion at time 1, the stability on emotional distress and anger control problems will be lower.

#### 6. Method

##### 6.1. Participants

The sample included 243 adolescents (44.9% males and 55.1% females) at the baseline assessment (T0), aged 12–18 years ( $M = 15.56$ ,  $SD = 1.67$ ), living in 21 Infant and Juvenile Residential care institutions (39.9% “only female” typology, 27.2% “only male” and 32.9% gender mixed institutions). These adolescents lived in a residential care institution due to a diverse set of adverse live situations, namely parental neglect or lack of family socio-economic conditions. The participating residential care institutions did not include children with mental disabilities/disorders or deviant behaviors (conduct disorders or substance abuse). The sample included in this study is homogeneous in relation to race and ethnicity.

The sample was collected within the scope of a broader experimental study that aims to develop, implement and assess an attachment-based intervention with caregivers in the context of residential care, and their implications on the young people that live in this context. Ten residential care units were allocated to the experimental group and eleven to the control group. 47.7% of the young people in the present sample are part of the experimental group and 52.3% are part of the control group<sup>3</sup>. Adolescents' education level ranged from 2nd to college grade ( $SD = 1.91$ ) and their average amount of time living in the current institution was 35.62 months ( $SD = 38.42$ ), ranging from less than 1 month to 192 months.

The second wave of data collection (T1) took place 7 months after T0. Seventy-three adolescents were lost due to attrition (30.04%), namely due to moving to another institution or returning to family. Thus, the sample at T1 comprised 170 adolescents (40% males and 60% females), aged 12–18 years ( $M = 15.42$ ,  $SD = 1.71$ ). The result of Little's MCAR test was  $p = .005$ . In addition, we conducted a series of logistic regressions to determine the extent to which the absence of data at T1 was predicted by any demographic or study main variables measured at T0. The results indicated adolescent's age ( $b = -0.185$ ,  $p = .036$ ,  $OR = 0.831$ ) and male gender ( $b$

<sup>3</sup> All the analyzes presented were performed separately in both groups (control and intervention) and no effect of the intervention was found in the relationships under study.

= 0.682,  $p = .017$ , OR = 1.978) predicted attrition at T1 suggesting a pattern of missing data consistent with the assumption of missing at random (MAR).

## 6.2. Measures

A socio-demographic questionnaire was used to collect personal data about adolescents, namely gender, educational level, and the length of stay in residential care.

The *Reynolds Adolescent Adjustment Screening Inventory* (RAASI; Reynolds, 2001; Portuguese version Calheiros et al., 2009) is a self-reported measure for adolescents to characterize psychological adjustment problems. The following dimensions were used: anger control problems (5 items; e.g., “I got so angry that I threw things (in the air) at home/residential care or at school”) and emotional distress (7 items; e.g., “I felt like crying for no apparent reason”). Items are answered using a 3-point Likert scale, ranging from 1 (*never or almost never*) to 3 (*always or almost always*). The following Cronbach's alphas were observed at T0 and T1 respectively – anger control problems ( $\alpha = 0.72$ ;  $\alpha = 0.68$ ), emotional distress ( $\alpha = 0.76$ ;  $\alpha = 0.82$ ).

Cohesion facing the pandemic in the residential care institution was measured at T1 through a set of 4 items originally developed to tap how adolescents were dealing with the uncertainties and changes caused by COVID-19 (Authors). The structure was tested through confirmatory factor analysis. The 4 items were: “I feel that I got closer to some young people in the residential care during this period”; “I felt that spending more time with caregivers during this period was good for me”; “I felt it was important to spend more time with other young people” and “Being all together without being able to leave, united us all more”. Adolescents' answered these items using a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was 0.75.

## 6.3. Procedure

This study is part of a more extensive project - CareME - that aims to develop, implement and assess an attachment-based intervention with caregivers in the context of residential care, and their implications on the young people that live in this context. During T1, caregivers had only participated in three intervention sessions, and enduring changes on their behaviors that could impact on adolescents' psychological adjustment were not expected, yet. This research project was approved by the Ethical Committee of the authors' institution and by the institution's care directors. After being informed about the objectives of the study, 21 institutions agreed to participate in the study. The 21 residential care units were randomly allocated by the control and experimental groups through covariate adaptive randomization - minimization method (Scott et al., 2002; Taves, 1974). The general objectives of the study were presented in each administration and standardized instructions were given regarding the assessment procedure. After their written informed assent, adolescents were asked to fill out a questionnaire in group sessions within the institutional settings. Participation was voluntary and anonymous, and no financial compensation was involved. One researcher was available during all administration sessions to answer questions and ensure confidentiality and anonymity of the information. Adolescents with severe cognitive deficits reported by the foster care institution were not invited to participate in the study.

## 6.4. Data analysis

The analyses were run with the IBM SPSS Statistics 24 and IBM SPSS Amos v.24. Outliers were inspected. We removed six adolescents from the study, due to standardized residuals outliers between  $-3$  and  $3$ . First, we inspected the descriptive statistics using composite mean scores for anger control problems, emotional distress, and cohesion. Second, the factorial structure of the RAASI was tested through confirmatory factor analysis (CFA) and longitudinal measurement invariance was established. Finally, we used path analysis to investigate the adolescents' psychological adjustment across two assessment waves, before and during the pandemic. Adolescents' gender and the length of their stay in residential care were include in the model as covariates, based on previous evidence suggesting the effects of these variables on adolescents' psychological adjustment living in residential care (Knorth et al., 2008; Ringle et al., 2010). The moderation was tested by including an interaction term in the model between psychological adjustment T0 (anger control problems and emotional distress) and cohesion T1. In addition, as adolescents came from institutions that were participating in a randomized controlled study with caregivers, we controlled for the group (caregivers control group or experimental group). Adolescents gender was dummy coded (0 = male; 1 = female).

Under the assumption of MAR, models' estimation was performed using full-information maximum likelihood estimation. This avoided the exclusion of participants with missing data and allowed a more precise models' estimation. The model fit was evaluated using the chi-square test, comparative fit index (CFI), and root mean square error of approximation (RMSEA). We assumed CFI values between 0.90 and 0.95 to signify acceptable model fit, and good fit above 0.95; and RMSEA values less than 0.08 indicate acceptable model fit, and below 0.05 suggest good model fit (Brown, 2015).

The intraclass correlation was performed (Anger control problems T1: ICC = 0.04; Emotional suffering T1: ICC = 0.10). The result showed that adolescents' psychological adjustment is similar across institutions. That means that adolescents' psychological adjustment is independent on the residential care setting in which they live. Thus, under this circumstances, as suggested by Nezlek (2008) and Hayes (2006), single-level path Analysis will allow unbiased estimates.

## 7. Results

### 7.1. Descriptive statistics

Means, standard deviations, and correlations among the study's main variables are presented in Table 1. Pearson's coefficient was used to analyze the existence of correlations between psychological adjustment at T0 and T1 and cohesion (T1). Table 1 shows some significant correlations, but no so high as to indicate multicollinearity problems. Results showed that emotional distress (T0) was strongly correlated and positively with emotional distress (T1;  $r = 0.543$ ;  $p < .01$ ). The anger control problems also presented a moderate and positive correlation between T0 and T1 (T1;  $r = 0.496$ ;  $p < .01$ ). Finally, the results indicated a moderate correlation between emotional distress and anger control problems at T0 ( $0.468$ ;  $p < .01$ ) and a weak correlation at T1 ( $0.222$ ;  $p < .01$ ).

### 7.2. Confirmatory factor analyses and measurement invariance

Cohesion in the residential care institution was analyzed in a confirmatory factor analysis. The resulting model showed satisfactory fit indices for a one-factor solution  $\chi^2(1) = 1.132$ ;  $p = .287$ , CFI = 0.99, RMSEA = 0.02 (CI = 0.000–0.174). The factor loadings ranged from 0.47 to 0.90.

A longitudinal measurement invariance model was also tested for RAASI questionnaire. The analyses involved four nested models corresponding to different levels of equivalence across time: configural invariance, metric invariance, scalar invariance and covariance invariance. Configural invariance was found  $\chi^2(234) = 1.447$ ;  $p = .000$ , CFI = 0.91, RMSEA = 0.04 (C-I = 0.032–0.053). The CFI index is not sensitive to sample size or non-normal data. Cheung and Rensvold (2002) recommend using the difference in the comparative fit index ( $\Delta$ CFI) and ( $\Delta$ RMSEA) as an index to assess invariance between nested models and the baseline model. They suggest that a  $\Delta$ CFI of less than or equal to 0.01 and  $\Delta$ RMSEA less than 0.015 indicate a similar model fit. So, comparing the unconstrained model (with the measurement weights freely estimated) with a constrained model (with equal measurement weights across time)  $\chi^2(246) = 1.410$ ;  $p = .000$ , CFI = 0.91, RMSEA = 0.04 (C-I = 0.031–0.051), we found that they are invariant ( $\Delta$ CFI = 0.003 and  $\Delta$ RMSEA = 0.002). Full scalar invariance was assured  $\chi^2(258) = 1.427$ ;  $p = .000$ , CFI = 0.91, RMSEA = 0.04 (C-I = 0.032–0.051). The magnitude of the difference in fit between the two models was below the critical value pointed out by the literature  $\Delta$ CFI = 0.005 and  $\Delta$ RMSEA = 0.001. Finally, covariance invariance was also found  $\chi^2(259) = 1.423$ ;  $p = .000$ , CFI = 0.91, RMSEA = 0.04 (C-I = 0.032–0.051) ( $\Delta$ CFI = 0.004 and  $\Delta$ RMSEA = 0.001). In this sense, results provide support for the invariance of the RAASI measurement model across time, both metric (factor loadings), scalar (intercepts) and covariance.

### 7.3. The moderating effect of cohesion between Adolescents' psychological adjustment T0 and Adolescents' psychological adjustment T1

The longitudinal model is presented in Fig. 1. The model examined the effects of cohesion on adolescents' emotional distress and anger control problems, investigating whether the association between adolescents' psychological adjustment at T0 and T1 (i.e., rank-order stability) was moderated by cohesion. In the longitudinal model we controlled for the effects of gender, time living in the institution and group (caregivers control group or experimental group). However, for simplicity, these variables are not shown in the model diagram (Fig. 1).

The model presented a very good fit to the data:  $\chi^2(4) = 3.001$ ,  $p = .558$ , CFI = 1.000, RMSEA = 0.000 (C-I = 0.000–0.085). The results revealed moderate stability of adolescents' emotional distress and anger control problems scores over time. The results also showed that the cohesion predicted negatively the emotional distress. No significant effect was found between cohesion and anger control problems.

We also tested the moderation effect of cohesion on the association between psychological adjustment T0–T1. Results for these moderated effects are graphically represented in Fig. 2. The results support the moderating role of cohesion on the stability of adolescents' emotional distress across time. Lower levels of cohesion were related with higher emotional distress stability across time. On the contrary, as cohesion increased, the association between adolescents' emotional distress at T0 and T1 decreased. The model

**Table 1**

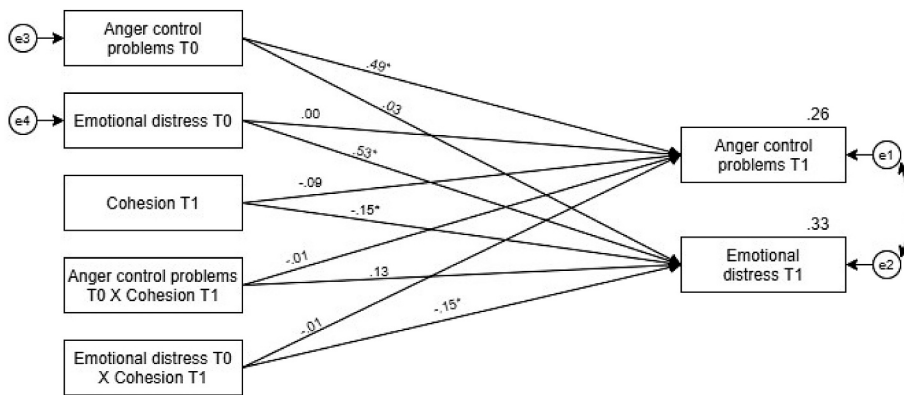
Means, standard deviations and correlations between emotional distress, anger control problems and cohesion

	1	2	3	4	5	6	7
1 – Emotional distress T0	–						
2 – Emotional distress T1	0.543**	–					
3 – Anger control problems T0	0.468**	0.308**	–				
4 – Anger control problems T1	0.222**	0.460**	0.496**	–			
5 – Cohesion T1	0.075	–0.105	–0.051	–0.100	–		
6 – Gender	0.333**	0.296**	–0.044	0.046	–0.079	–	
7 – Length of stay in residential care	–0.184**	–0.176*	–0.067	–0.130	0.764	–0.020	–
8 – Group (control/experimental)	0.016	0.070	0.951	0.012	0.227**	0.016	–0.165*
Mean	2.04	1.85	1.79	1.63	3.35	0.55	35.62
SD	0.43	0.44	0.46	0.40	0.79	0.49	38.42

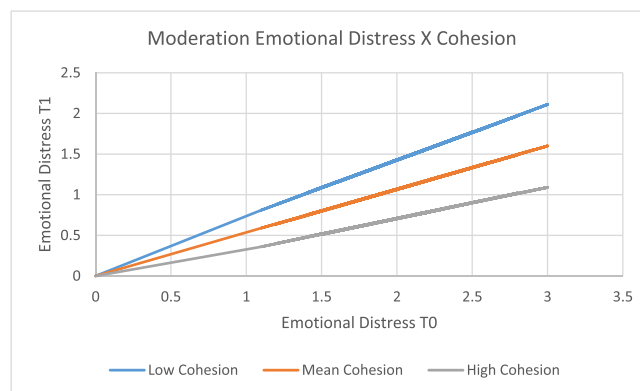
\*  $p < .05$ .

\*\*  $p < .01$ .





**Fig. 1.** Representative model of the moderation effect of cohesion (T1) in the association between the adolescents' psychological adjustment at T0 and T1 (standardized values).



**Fig. 2.** The moderating effect of cohesion (T1) on the association between adolescents' emotional distress at T0 and emotional distress at T1.

variables accounted for 33% of the variance of adolescents' emotional distress at T1 and 26% for anger control problems at T1.

Finally, the results showed significant effects of gender and time living in the institution on adolescents' psychological adjustment. More specifically, the female gender predicted emotional distress and longer time living in residential care was associated with less emotional distress. No significant effects were found between groups (caregivers control group or experimental group) on adolescents' psychological adjustment at T0 and T1.

## 8. Discussion

Due to their developmental history, adolescents in residential care are likely to develop more psychological, behavioral and social problems compared with the general population reared with their biological families (e.g., Attar-Schwartz, 2008, 2009; Baker et al., 2007; Gearing et al., 2014; Heflinger et al., 2000; Vinnerljung et al., 2005). Adding the uncertainties and fears associated with the COVID-19 pandemic, this group is expected to present a higher risk for several psychological and mental health problems (Duan & Zhu, 2020; Rajkumar, 2020; Zhao et al., 2020). However, differences in adolescents' psychological adjustment may be due to how the residential care settings were able to manage the challenges imposed by the pandemic, and particularly how they dealt with maintaining cohesion in these unpredictable and uncertain times. This study aimed to examine the effects of cohesion on adolescents' psychological adjustment over the COVID-19 first confinement period. We tested whether adolescents' perception of cohesion facing the pandemic in residential care mitigated the aggravation of adolescents' psychological maladjustment, using a two-wave design.

As expected, the results showed that cohesion predicted negatively emotional distress. These results are consistent with previous studies in the family field, which emphasize the relevance of the perception of cohesion against distress (Hovey & King, 1996). In fact, several studies showed an association between cohesion and child/adolescent adjustment, demonstrating that high levels of cohesion are related to lower levels of psychological distress, emotional and behavioral adjustment problems (e.g., Dale et al., 2011; Feldman & Masalha, 2010; Lucia & Breslau, 2006; Rivera, 2007). Given that the governments' measures to contain the virus ranged from social withdrawal and isolation, we believe that the availability of supportive peers and caregivers who offered help in problem-solving and a sense of care, likely influenced the adolescents' coping ability and psychosocial adjustment (Schultz et al., 2009). This finding suggests that when residential care members support each other and contextual interactions are positive, the challenges associated with the

COVID-19 pandemic may be perceived as less demanding, protecting the adolescents against psychological maladjustment. Despite the remarkably limited research on the effects of contextual relational factors on adolescents' adjustment in the residential care context (Costa et al., 2019), some studies have found similar results (Aguilar-Vafaie et al., 2011; Pinchover & Attar-Schwartz, 2012, 2014).

Albeit the relevance of cohesion for the emotional and behavioral adjustment problems, no significant effect was found between cohesion and anger control problems. Anger control problems are closely linked to maladaptive emotion regulation strategies, namely in children with adversity trajectories, such as the ones that have suffered maltreatment (Robinson et al., 2009; Teisl & Cicchetti, 2008). Although this could be due to the lack of opportunities to learn adaptive emotion regulation strategies (Go et al., 2017), being in some cases the result of intergenerational patterns of aggression (Conger et al., 2003), it is expected that anger control problems could be worsened due to additional stressors such as the ones imposed by the lockdown. Considering the complex nature of previous adverse experiences, temporary changes in the relational environment could be insufficient for promoting a decrease on anger control problems.

We tested whether adolescents' perception of cohesion in residential care mitigates the stability of adolescents' psychological maladjustment during the current pandemic situation on previous association. The results supported the moderating role of cohesion on the stability of adolescents' emotional distress across time. Lower levels of cohesion were related with higher emotional distress stability across time. On the contrary, as cohesion increased, the association between adolescents' emotional distress at T0 and T1 decreased. Indeed, when adolescents present high cohesion at T1, the scores on emotional distress decreased between T0 and T1. These results are in line with previous findings, which show that the cohesion helps to cope with the challenges (Baker et al., 2011). Thus, several studies have been suggesting the cohesion as a protective factor against external stressors (e.g., Rivera et al., 2008; Sbcigo & Dell'Aglio, 2012). This result assumes an additional relevance considering the high prevalence of pain-based behaviors (Anglin, 2004), mental health symptoms (Taren-Sweeney, 2008) and risk trajectories among children/youth in RC (Costa et al., 2019). Additionally, lockdown measures meant for the great majority of children/youth under out-of-home care the abrupt interruption of presential contact with parents, or other relatives, and the delay in important decisions concerning life projects (Galvin & Kaltner, 2020). In this sense, this result stress the crucial role of professional caregivers to create a secure and safe environment (Fergus & Zimmerman, 2005; Luthar et al., 2000; Yunes et al., 2004) and help adolescents to effectively cope with the difficulties and challenges (Bravo & del Valle, 2009), that may arise during the pandemic. Although, this study was conducted during an exceptional period, these results are in line with previous literature which emphasize the relational nature and secure social climate dimensions of psychosocial adjustment during placement (Costa et al., 2019; Mota et al., 2021; Mota & Matos, 2015; Pinchover & Attar-Schwartz, 2012).

In the model we controlled for the effect of gender, time living in the institution and group (caregivers control group or experimental group) since these variables could be associated with adolescents' psychological adjustment (Bongers et al., 2004; Guo & Slesnick, 2011; Knorth et al., 2008; Ojha et al., 2013; Ringle et al., 2010). In line with previous findings, the female gender predicted emotional distress (Fink et al., 2015; Taylor & Hood, 2010; Van Droogenbroeck et al., 2018; Wiklund et al., 2012). Regarding the time living in the residential care, longer time is associated with less emotional distress. Empirical literature points out mixed findings regarding the importance of the timing and duration of placements for child and adolescents' outcomes. However, some studies demonstrated that longer institutionalization periods are associated with positive improvements in academic performance, behavior and psychosocial functioning (Knorth et al., 2008; Ringle et al., 2010). Thus, residential care is not always synonymous of adolescents' maladjustment. It can produce improvements in the adolescents' behavior and psychological development (Thompson et al., 1996). Finally, no significant effect was found between group (caregivers control group or experimental group) and adolescents' psychological adjustment at T0 and T1. This result is not surprising; it should be noted that at T1 the caregivers of these residential care institutions had only access to three intervention sessions. Furthermore, the intervention was focused on caregivers and not on young people, which in view of this dimension may not be as significant. Thus, anger control problems could be more associated with other variables, such as, previous life experiences and reasons for residential care.

## 9. Limitations and future research

Despite providing relevant information about the effects of the lockdown on the adolescents' psychological adjustment and whether adolescents' perceived cohesion mitigated the worsening of adolescents' psychological adjustment problems, this study presents some limitations. The exclusive use of adolescents' self-report measures poses some limitations, as they are susceptible to response and social desirability biases. Also the questionnaire on cohesion needs further validation. A last limitation could be the homogeneity of the sample that prevents from generalizing our findings to other cultural and ethnic groups.

Despite these limitations, some future directions for research could also reach out. Future studies should include qualitative analyses with adolescents and caregivers in order to access information related to strengths and obstacles in the care during the COVID-19 pandemic and fully understand the relational dynamics of this particular context. Furthermore, future studies should include other important figures in the residential care context and adolescents' relational world, namely caregivers. Finally, studies also could consider different ethnicity and analyze the effect of this variable on adolescents' psychological adjustment.

## 10. Implications for practice

Concerning practical implications, this study highlights the importance of creating a positive social climate in residential care. Furthermore, the results allowed contributing to the reflection of relevance of nurturing bonds between caregivers and adolescents, as well as promoting adolescents' abilities to develop relationships and friendships with peers in the institution, can promote the psychological adjustment of youth in residential care. Thus, it is extremely relevant, through formal training and supervision, that

caregivers be prepared and trained to create a positive social climate and emotional support (e.g., sensitivity, consistency, affection) to adolescents. This kind of atmosphere is crucial to provide adolescents a sense of nurturance, warm and security environment, and help residential institutions to fulfill its primary mission of care. Finally, this study indirectly called the attention to the need of a greater investment in the quality of residential care services and professionals' training.

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