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Joana dos Reis Alves e Dias Francisco

**EARLY EXPERIENCES AND
INTERNALIZING/EXTERNALIZING
SYMPTOMATOLOGY IN ADOLESCENTS:
THE ROLE OF THE CENTRALITY OF TRAUMATIC EVENTS**

Dissertação no âmbito do Mestrado em Intervenções Cognitivo-Comportamentais em Psicologia Clínica e da Saúde orientada pelo Professor Doutor Daniel Maria Bugalho Rijo e pela Doutora Diana Ribeiro da Silva e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra.

Julho de 2022

Faculdade de Psicologia e de Ciências da Educação
da Universidade de Coimbra

Early Experiences and Internalizing/Externalizing Symptomatology in Adolescents: The Role of the Centrality of Traumatic Events

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Institutional framework

The present dissertation was developed within the project of investigation of Rita Ramos Miguel “Self-care for adolescents in residential care: A cluster randomized trial assessing the impact of a compassionate mind training intervention” of the Center for Research in Neuropsychology and Cognitive-Behavioral Intervention (CINEICC) (DFA/BD/5840/2020). This project is supervised by Daniel Rijo, Luíza Nobre Lima and Paula Vagos and is financed by Fundação para a Ciência e a Tecnologia. Data analysed in the present study is property of that research project.

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Abstract

Memories of stressful or traumatic experiences, due to their distinctiveness and emotional impact, can become central to one's identity and life story. Thus, growing evidence supports the relationship between centrality of traumatic memories and psychopathological symptoms. Likewise, early life experiences have been associated with psychopathology. Nevertheless, more evidence is needed to support the claim that centrality of traumatic memories serves as a moderator between early memories and psychological symptoms in community adolescents. The current study aimed to explore a moderator model in which the centrality of a traumatic event is hypothesized to moderate the relationship between early experiences and externalizing and internalizing symptoms. The sample was composed by 250 adolescents from community schools with ages between 14 and 18 years old. Participants answered a battery of self-report questionnaires measuring early life experiences of threat and subordination; early memories of warmth and safeness, the centrality of a traumatic event, and externalizing and internalizing psychological symptoms. Correlations revealed positive, negative, moderate and large correlations between the variables in study. Four moderation models were estimated using PROCESS. However, no statistically significant effect was found. Thus, four mediation models were estimated. Results suggest early life experiences predict directly and indirectly, through the centrality of traumatic memories, internalizing and externalizing psychological symptoms. In clinical terms these results highlight the importance of assessing and working not only early life experiences, but also the memories of traumatic experiences that have acquired a central component of personal identity.

Keywords: centrality of traumatic events, internalizing symptoms, externalizing symptoms, early memories of warmth and safeness, early experiences of threat and subordination

Resumo

As memórias de experiências stressantes ou traumáticas, devido à sua distinção e impacto emocional, podem tornar-se centrais para a identidade e história de vida de um indivíduo. Assim, evidência em crescimento apoia a relação entre a centralidade de memórias traumáticas e sintomas psicopatológicos. Do mesmo modo, as experiências prévias de vida têm sido associadas a psicopatologia. No entanto, são necessárias mais provas para apoiar a afirmação de que a centralidade das memórias traumáticas serve como moderador entre as memórias prévias e os sintomas psicológicos nos adolescentes da comunidade. O estudo atual visa explorar um modelo moderador em que se toma como hipótese que a centralidade de um evento traumático modera a relação entre experiências prévias e sintomas externalizantes e internalizantes. A amostra foi composta por 250 adolescentes de escolas da comunidade com idades compreendidas entre os 14 e 18 anos. Os participantes responderam a uma bateria de questionários de autorrelato que mediam experiências precoces de ameaça e subordinação, memórias precoces de calor e segurança, a centralidade de um evento traumático, e sintomas psicológicos externalizantes e internalizantes. As correlações revelaram correlações positivas, negativas, moderadas e grandes entre as variáveis em estudo. Quatro modelos de moderação foram estimados utilizando o PROCESS, contudo, não foi encontrada qualquer significância estatística. Assim, quatro modelos de mediação foram estimados. Os resultados sugerem que as experiências prévias de vida preveem direta e indiretamente, através da centralidade das memórias traumáticas, sintomas psicológicos internalizantes e externalizantes. Em termos clínicos, estes resultados salientam a importância de avaliar e trabalhar não só as experiências prévias de vida, mas também as memórias de experiências traumáticas que adquiriram uma componente central da identidade pessoal.

Palavras-chave: centralidade de eventos traumáticos, sintomas internalizantes, sintomas externalizantes, memórias precoces de calor e segurança, experiências precoces de ameaça e subordinação

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Introduction

Adolescence, the transition period from childhood to adulthood, is an influential developmental stage due to the range of physical, social, and psychological changes it involves (World Health Organization [WHO], 2020). It is a trajectory period between 10 and 19 years of age (WHO, 2020) that builds upon developmental processes in infancy and early childhood (Balvin & Banati, 2017). Neurological development also takes place, with experience, environment, and genetics shaping adolescents' brains, making adolescence a vulnerable time for negative and positive influences (Balvin & Banati, 2017). This time period already poses a risk for adolescents' suboptimal mental health and mental health disorders (WHO, 2020). However, the higher the exposition to risk factors, the higher the potential effect over adolescents' mental health (Balvin & Banati, 2017).

The impact of early experiences, particularly early parental and familial relationships, on subsequent psychopathology has been substantially researched (e.g., Gilbert et al., 2003, 2006; Richter et al., 2009; Matos et al., 2015). For instance, early negative experiences characterized by threat, rejection, abuse, shame, criticism, and neglect appear to function as a factor of vulnerability for mental health difficulties (Gilbert et al., 2003, 2006; Irons et al., 2006; Richter et al., 2009; Matos & Pinto-Gouveia, 2010; Pinto-Gouveia et al., 2016). Social Rank Theory (Gilbert, 1992) proposes that the relationship between a parent and a child can be a power/hierarchical relationship (dominance versus submission), integrating threat and submissive behaviours. Thus, if the parental environment is perceived as frightening and children find themselves in unwanted low status/rank positions, they may adopt submissive and defensive behaviours (e.g., by submitting, appeasing, avoiding; Gilbert et al., 2003). Similarly, children subjected to threat experiences and neglect have a higher sensitivity to threat and are more likely to be self-critical (Gilbert 2003, 2009; Castilho et al., 2014), since they feel their external and internal worlds can easily turn hostile (Gilbert, 2009). Therefore, they grow up in a stressful and fearful environment, treated as subordinates by their parents, instead of feeling secure and safe (Gilbert et al., 2003). Gilbert et al. (2003) argue that although the role of early parental behaviours on children and adolescents' psychological well-being is crucial, people can recall parental behaviour in a way that is divergent from their feelings about it. Indeed, personal feelings of perceived threat and subordination in childhood are associated with the recall of negative parenting behaviours, particularly

rejection (Gilbert et al., 2003). Moreover, those memories are also associated with shame, depression, anxiety, higher levels of negative affect, and more self-destructive behaviours (Gilbert et al., 2003, 2006; Irons et al., 2006; León-Palacios et al., 2019; Pinto-Gouveia et al., 2016; Castilho et al., 2014; Xavier et al., 2016). Likewise, when memories of threat and subordination are present, the ability to recall feelings of warmth, soothing and safeness is less probable (Pinto-Gouveia et al., 2016).

In contrast, the presence of memories of feeling warm, safe, and cared for during childhood is associated with psychological and social well-being (Mendes et al., 2019; Ferreira et al., 2021) and different types of positive affect (e.g., of safeness, security and warmth; Richter et al., 2009; Pinto-Gouveia et al., 2016). Once again, the recall of positive parent behaviours is associated with the recall of positive emotional memories and negatively associated with rejection and overprotection behaviours (Richter et al., 2009; Castilho et al., 2014; Cunha et al., 2014; Capinha et al. 2021). Moreover, memories of feeling soothed, safe, connected, and warm are linked to higher self-soothing and self-reassuring abilities; higher self-compassion, lower self-criticism, and better social relationships (Irons et al., 2006; Richter et al., 2009; Cunha et al., 2014; Vagos et al., 2016; Capinha et al., 2021). Likewise, memories of feeling loved and cared for as a child are negatively associated with psychopathology, such as depression and anxiety symptoms (Richter et al., 2009; Cunha et al., 2014; Matos et al., 2015, 2017; Capinha et al., 2021) and positively related to positive affiliative social feelings (i.e., feelings of social safeness and pleasure; Matos et al., 2015). Thus, there seems to be a buffering effect of such memories on depression and anxiety (Richter et al., 2009; Cunha et al., 2014; Vagos et al., 2016). Furthermore, it has been shown that early memories of warmth and safeness are associated with adolescents' current view of their relationships as warm and caring (Santos et al., 2021). By contrast, the lack of early memories of warmth and safeness is associated with higher levels of loneliness and with decreased physical, social and psychological quality of life (Mendes et al., 2019; Ferreira et al., 2021).

Memories of personally salient events, much like memories of threat and of warmth, can have an impact on adolescents' psychological well-being. Berntsen and Rubin (2006, 2007) conceptualized a traumatic event as an uncommon, unexpected and highly emotional event that turns into a reference point for the organization of autobiographical knowledge, anchoring one's self-concept and providing meaning and structure to one's life story, due to their distinctiveness and emotional impact. These highly emotionally negative (e.g., traumatic or extremely stressful) experiences can lead to rumination, unnecessary worries and extensive

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attempts to prevent that experience from happening again (Berntsen & Rubin, 2006). The centrality of event theory (Berntsen & Rubin, 2006, 2007) states that memories of personally salient events can function in three mutually dependent ways. Firstly, those memories are able to function as a reference point for the attribution of meaning to current experiences, expectations for the future and the understanding of the world. Secondly, they can function as a turning point in an individual's life story. Lastly, the event can become a central component of the individual's identity and self-understanding. Thus, highly emotionally negative events regarded as central to identity appear to be related to poor mental health outcomes, since these events become highly accessible and tend to distort how new experiences are perceived (Berntsen & Rubin, 2006, 2007). Assuming a core part on someone's identity, stressful events might also impact the attribution of meaning to past experiences (Vagos et al., 2018). This may affect the proneness for a more positive life events narrative, possibly yielding a greater negative influence of negative earlier experiences on mental health (Boals, 2010).

An experience of shame from childhood can be stored in the autobiographical memory in the form of an emotional memory exhibiting traumatic memory features, such as intrusion, hyperarousal, and avoidance symptoms (Matos & Pinto-Gouveia, 2010). These memories can become central to personal identity and structure the life narrative (Pinto-Gouveia & Matos, 2011). Adolescents who perceive a shame memory as a central traumatic event show more self-criticism and experiential avoidance (Vagos et al., 2018) and use self-criticism to harm the self for failures (Pinto-Gouveia et al., 2013). Likewise, shame memories perceived as central to one's personal identity and life narrative can be a risk factor for psychopathology by enhancing the vulnerability to symptomatology, especially internalizing symptoms of depression, anxiety, and stress (Matos & Pinto-Gouveia, 2010; Pinto-Gouveia & Matos, 2011; Cunha et al., 2012, 2015; Matos et al., 2017; Vagos et al., 2018). However, early memories of warmth and safeness seem to moderate the relationship between the centrality of shame memories and depression, by attenuating its impact (Matos et al., 2015). This means that that individuals who recall feeling safe and cared for in childhood may show fewer depressive symptoms even when shame experiences become central to their identity and life story. Nonetheless, more research is required about the centrality of emotionally negative events on adolescents (Cunha et al., 2012, 2015; Ionio et al., 2018; Vagos et al., 2018).

Markers of a well-formed narrative identity start to increase in adolescence, which contributes to the development of life narratives (Habermas & de Silveira, 2008). Similarly, the integration of memories into the personal identity is present during this developmental

period (McLean et al., 2010). The occurrence of these meaning-making changes may be due to cognitive development as well as higher social pressures to define the self (McAdams & McLean, 2013), which can be demanding for adolescents who have experienced early life experiences that may constitute a central event to their personal identity and life story (Ionio et al., 2018; Vagos et al., 2018). Thus, although there is extensive research on the impact of early experiences (positive and negative) on psychopathological symptoms, as well as growing evidence of the impact of the centrality of highly emotional events on psychopathological symptoms, little is known about the likely effect of the centrality of highly emotional events on the relationship between early experiences and mental health difficulties on adolescents.

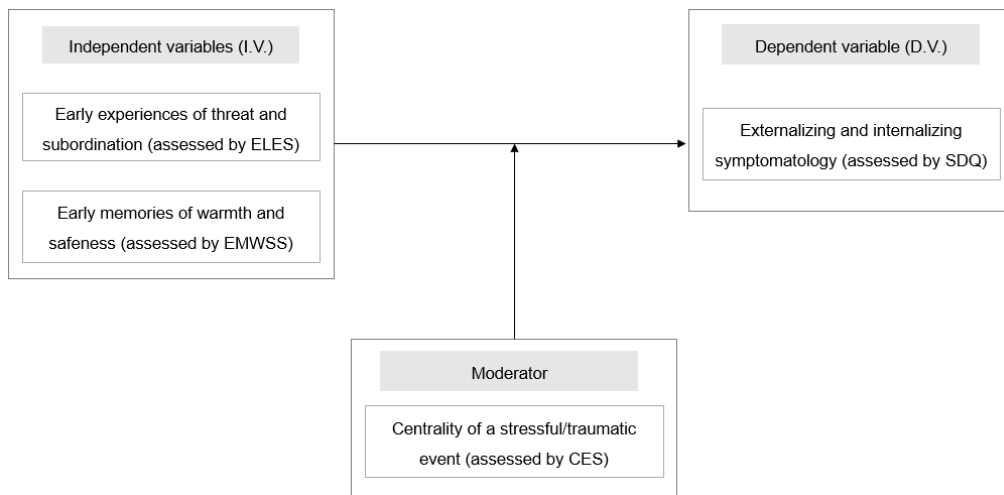
Objectives

This study aims to explore the relationship between early experiences of threat and subordination as well as experiences of warmth and safeness and internalizing and externalizing psychopathological symptoms in community adolescents. It is hypothesised that there is a positive association between early life experiences of threat and subordination and internalizing and externalizing psychopathological symptoms. Also, it is hypothesised that there is a negative association between early memories of warmth and safeness and internalizing and/or externalizing psychopathological symptoms.

In addition, it is intended to better understand the moderating role of the centrality of stressful or traumatic memories in the relationship between early experiences and internalizing and externalizing psychopathological symptoms (See Figure 1). It is hypothesised that when stressful or traumatic memories are perceived as central, the previous positive association will be reinforced and the previous negative association will be weakened. On the contrary, when stressful or traumatic memories are not perceived as central the previous positive association will be weakened and the previous negative association will be reinforced.

Figure 1

Model Design to Explore the Moderating Role of the Centrality of Traumatic Memories in the Relationship Between Early Experiences and Internalizing/Externalizing Psychopathological Symptoms



Method

Participants

A sample of 250 participants was recruited from four public schools (82.6%) and one private school (17.4%) from the Lisbon and Coimbra areas. In order to assure the detection of small to medium effects it was considered the rule-of-thumb from Boomsma (1982, 1985) that states a minimum sample size of 100 or 200. The sample includes 163 female participants (65.2%) and 87 male participants (34.8%), with ages ranging from 14 to 18 years old ($M = 15.66$ years; $SD = 1.45$). The participants are students from grades 9 to 12, with an average number of years in education (concluded with success) of 10.32 ($SD = 1.30$), and the majority of the students never failed a year (93.6%). Regarding socioeconomic status (SES)¹, 16.4% ($n = 41$) of the participants were categorized with a low SES; 72.4% ($n = 181$) with a medium SES, and 7.2% ($n = 18$) with a high SES. Adolescents from whom informed consent was gathered were assessed for eligibility, according to the following criteria: 1) aged between 14 and 18 years old; and 2) no indication of educational specific needs (indicative of possible mild cognitive impairment).

Measures

Early Memories of Warmth and Safeness Scale-Adolescents (EMWSS-A; Richter et al., 2009; Portuguese version by Cunha et al., 2014) measures personal emotional memories, particularly memories of feeling warm, safe and cared for in childhood. It consists of 21 items (e.g., “I felt cared about”, “I felt appreciated the way I was”; “I felt part of those around me”) rated on a five-point Likert-type scale (0 – *No*; 4 - *Yes, most of the time*). The EMWSS presented an excellent internal consistency in the original study ($\alpha = .91$; Richter et al., 2009) and in both Portuguese studies ($\alpha = .95$; Cunha et al., 2014; $\alpha = .96$; Vagos et al., 2016). In the current sample, it also presented an excellent internal consistency ($\alpha = .97$).

¹Socioeconomic status was assessed through parents' profession, considering the classification of Portuguese occupations (Instituto Nacional de Estatística, 2011). Examples of professions in the high socioeconomic status group are judges or higher education professors; in the medium socioeconomic status group are psychologists or school teachers, and included in the low socioeconomic group are farmers or undifferentiated workers.

Early Life Experiences Scale-Adolescents (ELES-A; Gilbert et al. 2003; Portuguese version for adolescents by Pinto-Gouveia et al., 2016) assesses the perceived threat, subordination, and devaluation feelings in early interactions with the family. This 15 item self-report instrument is rated on a five-point scale (1 - *completely untrue*; 5 - *very true*) and comprises three subscales: threat (e.g., “I experienced my parents as powerful and overwhelming”), submissiveness (e.g., “I often had to give in to others at home”) and unvalued (constituted by three reverse items; e.g., “I felt very comfortable and relaxed around my parents”). The original version presented an excellent internal consistency for the ELES total score ($\alpha = .92$) and an acceptable to high internal consistency for its subscales (ranging between .71 and .89; Gilbert et al. 2003). The Portuguese version presented a high internal consistency for the total score ($\alpha = .86$) and a weak to acceptable internal consistency for the subscales (.68 to .77; Pinto-Gouveia et al., 2016). The current study will only use the total score, which corresponds to an excellent internal consistency ($\alpha = .91$) in the current sample.

Centrality of Event Scale-Adolescents (CES-A; Berntsen & Rubin, 2006; Portuguese version for adolescents by Cunha et al., 2015) measures the extent to which a memory of a stressful event (i.e., a memory of a shame experience) forms a reference point for personal identity and for the attribution of meaning to other experiences in a person’s life. This self-report questionnaire consists of 20 items, rated on a five-point Likert-type scale (1 – *Totally disagree*; 5 – *Totally agree*), measuring three interdependent characteristics of a highly negative emotional event: reference points for everyday inferences (e.g., “This event has coloured the way I think and feel about other’s experiences”), turning points in life stories (e.g., “My life story can be divided into two main chapters: one is before and one is after this event happened”) and components of personal identity (e.g., “I feel that this event has become part of my identity”). Both the original study (Berntsen & Rubin, 2006) and the Portuguese version (Cunha et al., 2015) revealed excellent internal consistencies for the total score ($\alpha = .94$; $\alpha = .95$, respectively). The current study will only use the total score which also presented an excellent internal consistency ($\alpha = .95$).

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997, Portuguese version by Fleitlich et al., 2005) is a 25-item self-report questionnaire, rated on a three-point Likert-type scale (0 – *not true*; 2 – *certainly true*) that assesses behaviours, emotions and relationships. In the current study, it will be applied the bi-factor model comprising the internalizing and externalizing subscales (Goodman, 2010). The internalizing subscale

combines the dimensions of emotional symptoms and peer relationship problems (e.g., “I worry a lot”; “Other children or young people pick on me or bully me”). The externalizing subscale combines the dimensions of conduct problems and hyperactivity/inattention difficulties (e.g., “I fight a lot. I can make other people do what I want”; “I am restless, I cannot stay still for long”). The SDQ (Goodman, 2010) presented a weak internal consistency for the internalizing subscale ($\alpha = .66$) and an acceptable internal consistency for the externalizing subscale ($\alpha = .76$). The Portuguese version presented similar internal consistencies for the internalizing ($\alpha = .67$) and externalizing subscales ($\alpha = .72$; Fleitlich et al., 2005). In the present study, the internalizing subscale presented an acceptable internal consistency ($\alpha = .74$) and the externalizing subscale presented a weak internal consistency ($\alpha = .60$).

Procedure

This study is aligned with a wider PhD research project entitled “Self-care for adolescents in residential care: A cluster randomized trial assessing the impact of a compassionate mind training intervention”, for which ethical approval was obtained from the Ethics Committee of the Faculty of Psychology and Educational Sciences of the University of Coimbra and from the Portuguese Ministry of Education.

School boards were contacted by email or phone call. Schools that accepted the invitation to participate in the present study identified the classes considered suitable to participate. On-site data collection was favoured; however, as a result of the COVID-19 pandemic, the option was given to complete the questionnaires online, via LimeSurvey, to schools who preferred this option. Thus, data was collected both in schools (97.6%) and online (2.4%).

On-site data collection was carried out in the presence of a researcher, during class-time provided by a teacher. After the study was presented by the researcher to the students, participants completed a battery of self-report questionnaires, which had two counterbalanced versions to diminish effects of fatigue and response contamination, both on-site and online.

A written informed consent was required from the parents or legal guardians of students under 18 years old. Likewise, a written informed assent/consent was required from all participants. In line with ethical requirements, it was emphasized that their cooperation was voluntary and their responses’ confidentiality and anonymity was guaranteed.

Furthermore, it was explained that the decision to participate in the study would have no impact on school matters (e.g., grades) and they would be allowed to quit at any moment.

Data Analysis

Data analyses was conducted using the SPSS program (Statistical Package for the Social Sciences version 28.0.1), and the computation tool PROCESS (version 4.1, Hayes, 2013).

Descriptive statistics were performed on all variables in order to assess impossible values as well as missing values. A missing completely at random (MCAR) test was performed to test the randomness of missing values. Descriptive statistics were performed to analyse demographic variables. Internal consistency indices were calculated for all scales and subscales. Cronbach's values of less than .60 were considered as inadmissible, between .60 and .70 weak, between .71 and .80 acceptable, between .81 and .90 high, and between .91 and 1 excellent (Pestana & Gageiro, 2008). Pearson correlation coefficients were performed to explore the relationships between the variables under study. To assess the magnitude of the correlations, a correlation coefficient of .10 is considered small, .30 is considered medium, and .50 is considered large (Cohen, 1988).

To examine the hypotheses that the centrality of event (moderator) moderates the relationship between early experiences (independent variables) and psychopathological symptomatology (dependent variables), a model of moderation was created with PROCESS (Model 1; Hayes, 2013). Specifically, four moderation analyses were conducted with early life experiences of threat and subordination and early memories of warmth and safeness entered, separately, as the predictor variable, centrality of event as the moderator, and internalizing psychopathological symptoms and externalizing psychopathological symptoms entered, separately, as the dependent variable. We then took on a model generation approach, in which these priori models were tested upon the data and were sequentially improved based on theoretical considerations and statistical indications.

Results

Firstly, impossible values were corrected. The original sample consisted of 288 participants, however, the missing completely at random (MCAR) test found patterns in the missing data. Hence, all participants with missing values were removed, resulting in a final sample of 250 participants.

Pearson correlations between study variables were computed (Table 1) and revealed medium and large significant associations, all in the expected directions. The correlation between early life experiences of threat and subordination and centrality of event, externalizing and internalizing symptomatology revealed medium and positive associations. Likewise, the correlations between centrality of event and internalizing and externalizing symptomatology revealed medium and positive associations. Oppositely, the correlations between early memories of warmth and safeness and centrality of event, externalizing and internalizing symptomatology had negative medium associations. The correlations between early memories of warmth and safeness and early life experiences of threat and subordination had a negative large association.

Table 1
Pearson Correlations Between Study Variables

Variable	1	2	3	4	5
1. ELES	—				
2. EMWSS	-.66**	—			
3. CES	.34**	-.31**	—		
4. SDQ-Int	.43**	-.45**	.47**	—	
5. SDQ-Ext	.41**	-.32**	.35**	.42**	—

Note. ELES = Early Life Experiences Scale; EMWSS = Early Memories of Warmth and Safeness Scale; CES = Centrality of Event Scale; SDQ-Int = Internalizing Symptomatology subscale of the Strengths and Difficulties Questionnaire; SDQ-Ext = Externalizing Symptomatology subscale of the Strengths and Difficulties Questionnaire.

** $p < .01$.

Moderation Analysis

According to the hypotheses, four moderation models were tested (Model 1; Hayes, 2013). However, moderation analysis revealed that centrality of event was not a significant moderator in any of the models: neither with externalizing symptomatology as the dependent variable and early experiences of threat and subordination ($b = -0.01$, $SE = 0.01$, $p = .223$) or early memories of warmth and safeness ($b = 0.00$, $SE = 0.00$, $p = .549$) as the independent variables; nor with internalizing symptomatology as the dependent variable and early experiences of threat and subordination ($b = -0.01$, $SE = 0.01$, $p = .395$) or early memories of warmth and safeness ($b = 0.00$, $SE = 0.00$, $p = .287$) as the independent variables. Thus, results indicate that the centrality of a traumatic event does not play a moderator role on the relationship between early life experiences and psychopathological symptoms.

Mediation Analysis

For this reason, four mediation models (Model 4; Hayes, 2013) were tested in order to examine the direct and indirect effects of early experiences of threat and subordination and of warmth and safeness (independent variables) on externalizing and internalizing psychopathological symptoms (dependent variables) through the centrality of event (mediator). The indirect effect was assessed using a bootstrapping procedure with 10,000 resamples. This procedure creates 95% bias-corrected confidence intervals (95% CIs) of the indirect effects, which are considered significant if zero is not within the lower and upper CIs. The significance was set at the .05 level.

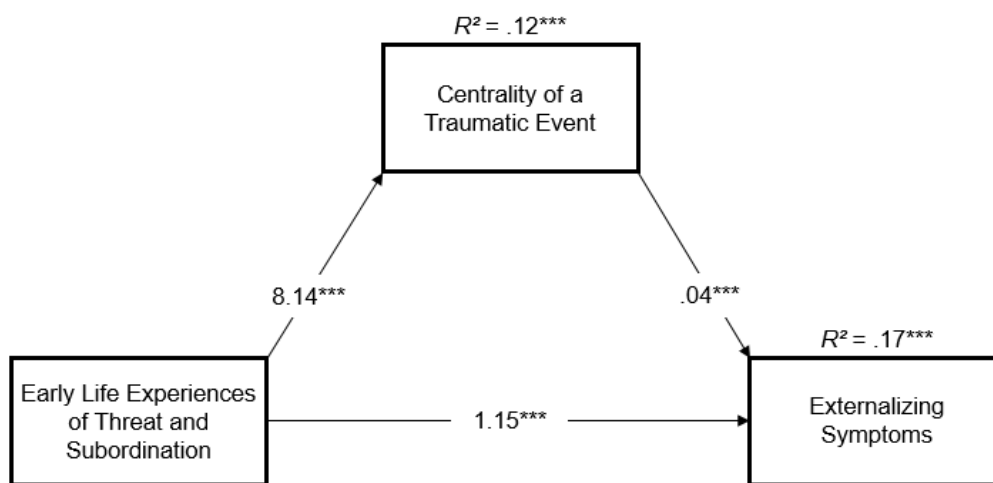
In all models, early experiences of threat and subordination had a significant association with the centrality of traumatic events ($b = 8.14$, $SE = 1.41$, $p < .001$), explaining 11.80% of its variance, $F(1, 248) = 33.17$, $p < .001$. Likewise, in all models, early memories of warmth and safeness had a significant association with the centrality of traumatic events ($b = -0.35$, $SE = 0.07$, $p < .001$), explaining 9.80% of its variance, $F(1, 248) = 26.96$, $p < .001$.

As shown on Figure 2, early experiences of threat and subordination and the centrality of traumatic events explain 17% of externalizing symptomatology, $F(1, 248) = 50.78$, p

<.001. Early experiences of threat and subordination presented a significant total effect on externalizing symptoms ($b = 1.44, SE = 0.20, p < .001$) and a significant direct effect ($b = 1.15, SE = 0.21, p < .001$). Moreover, the centrality of traumatic events was significantly associated with externalizing symptoms ($b = 0.04, SE = 0.01, p < .001$) and the indirect effect through the centrality of traumatic events was significant (point estimate = 0.29, $SE = 0.09$, 95% CI [0.14, 0.48]).

Figure 2

Mediation Model of Early Experiences of Threat and Subordination on Externalizing Psychopathological Symptoms Through the Centrality of Event

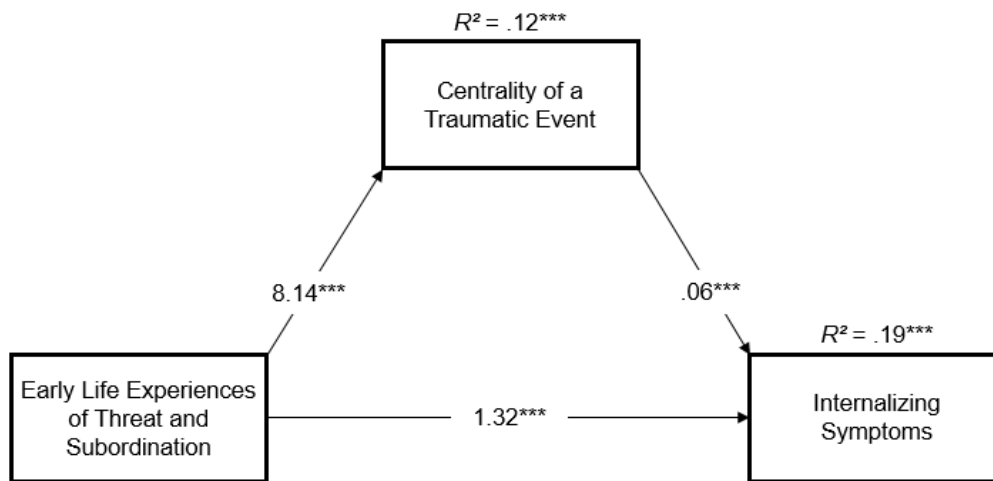


Note. Path values represent unstandardized regression coefficients.
 *** $p < .001$.

Regarding internalizing symptomatology, early experiences of threat and subordination and the centrality of traumatic events explain 18.83% of its variance, $F(1, 248) = 57.53, p < .001$ (See Figure 3). Early experiences of threat and subordination present a significant total effect on internalizing symptoms ($b = 1.85, SE = 0.24, p < .001$) and a significant direct effect ($b = 1.32, SE = 0.24, p < .001$). Furthermore, the centrality of traumatic events is significantly associated with internalizing symptomatology ($b = 0.06, SE = 0.10, p < .001$) and the indirect effect through the centrality of traumatic events is significant as well (point estimate = 0.53, $SE = 0.14$, 95% CI [0.29, 0.82]).

Figure 3

Mediation Model of Early Experiences of Threat and Subordination on Internalizing Psychopathological Symptoms Through the Centrality of Event



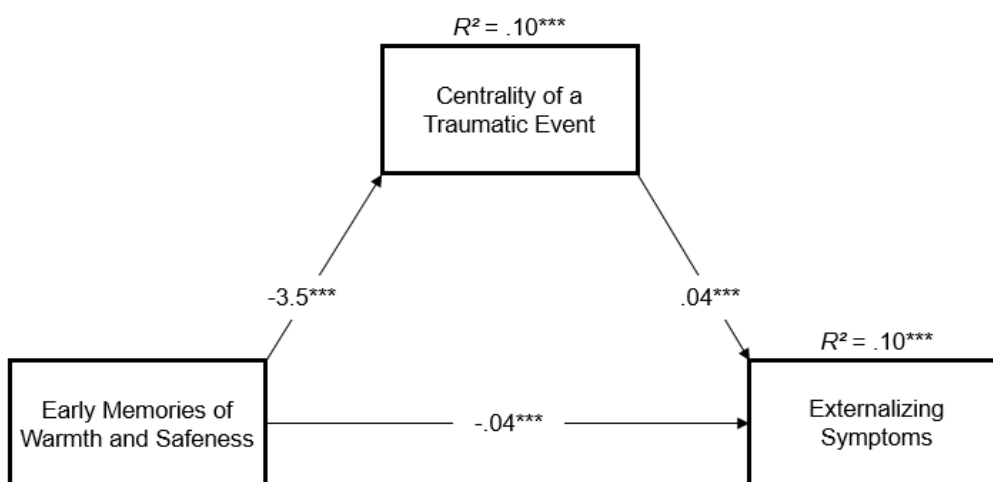
Note. Path values represent unstandardized regression coefficients.

*** $p < .001$.

Early memories of warmth and safeness and the centrality of traumatic events account for 10.07% of the variance of externalizing symptomatology, $F(1, 248) = 27.78, p < .001$ (See Figure 4). Early memories of warmth and safeness present a negative and significant total effect on externalizing symptoms ($b = -0.05, SE = 0.10, p < .001$) and a negative and significant direct effect ($b = -0.04, SE = 0.01, p < .01$). The centrality of traumatic events is significantly associated with externalizing symptomatology ($b = 0.04, SE = 0.01, p < .001$). The indirect effect through the centrality of traumatic events is negative and significant (point estimate = -0.01, $SE = 0.00, 95\% CI [-0.02, -0.01]$).

Figure 4

Mediation Model of Early Memories of Warmth and Safeness on Externalizing Psychopathological Symptoms Through the Centrality of Event



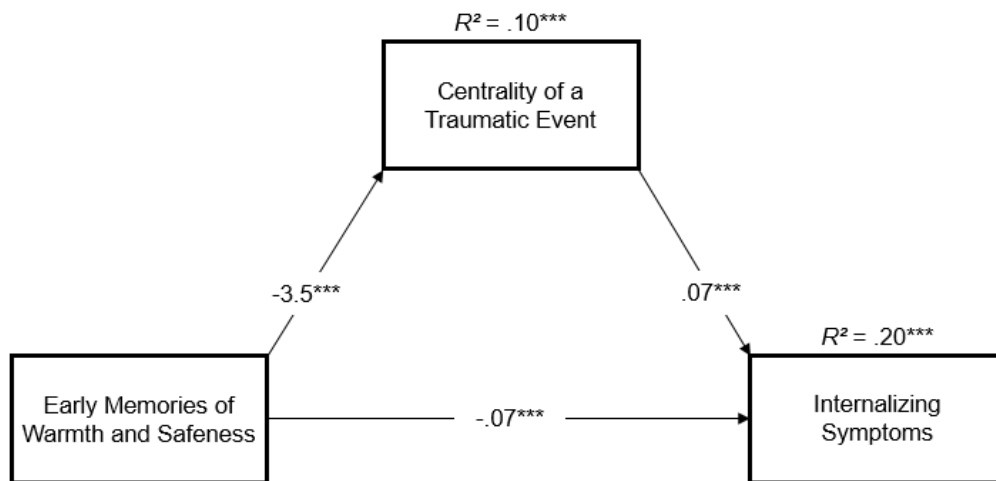
Note. Path values represent unstandardized regression coefficients.

*** $p < .001$.

Finally, as presented on Figure 5, early memories of warmth and safeness and the centrality of traumatic events explain 19.93% of internalizing symptomatology, $F(1, 248) = 61.72, p < .001$. Early memories of warmth and safeness present a negative and significant total effect on internalizing symptoms ($b = -0.09, SE = 0.01, p < .001$) and a negative and significant direct effect ($b = -0.07, SE = 0.01, p < .001$). The centrality of traumatic events is significantly associated with internalizing symptomatology ($b = 0.07, SE = 0.01, p < .001$) and the indirect effect through the centrality of traumatic events is negative and significant (point estimate = $-0.02, SE = 0.01, 95\% CI [-0.04, -0.01]$).

Figure 5

Mediation Model of Early Memories of Warmth and Safeness on Internalizing Psychopathological Symptoms Through the Centrality of Event



Note. Path values represent unstandardized regression coefficients.

*** $p < .001$.

Discussion

How an adolescent recalls personal feelings and behaviours from childhood may be as important as having been through those experiences (Gilbert et al., 2003). The impact of those early memories on the development and maintenance of psychological difficulties has extensive research. Additionally, memories of traumatic events can remain highly accessible to an individual and start to become a central component of the individual's identity (Berntsen & Rubin, 2006, 2007). However, to date, only a handful of studies have highlighted the potential impact of the centrality of a traumatic event on psychopathology in adolescence (Cunha et al., 2012, 2015; Ionio et al., 2018; Vagos et al., 2018). To our best knowledge, none has investigated the possibility of the centrality of a traumatic event moderating the relationship between early experiences and psychopathological symptoms. Therefore, to further explore these associations, the present study aimed to better comprehend the relationship between early experiences of threat and subordination and early memories of warmth and safeness and internalizing and externalizing psychopathological symptoms in community adolescents. Specifically, it intended to investigate the potential moderator role of the centrality of a traumatic event on the previous relationship.

It was hypothesized that the centrality of a traumatic event would play a moderator role on the relationship between early experiences and internalizing and externalizing psychopathological symptoms. In other words, when stressful or traumatic memories were perceived as central, the previous positive association would be reinforced and the previous negative association would be weakened. When stressful or traumatic memories were not perceived as central, the previous positive association would be weakened and the previous negative association would be reinforced. However, our results did not support this hypothesis since the centrality of a traumatic event did not reveal itself to be a significant moderator of the relationship between early experiences and psychopathological symptoms. As far as our knowledge, this was the first study to investigate this moderating relationship. Given the lack of studies regarding this matter, our results suggest the absence of a moderation of the centrality of a traumatic event on the relationship between early experiences and psychopathological symptoms in community adolescents. It seems that the centrality of a traumatic event has an independent effect on externalizing and internalizing psychological symptoms and it is not diminished by early positive memories nor is it

accentuated by early negative memories, which also have significant independent effects on externalizing and internalizing psychological symptoms. A possible explanation for these results might be related with the used self-report measures. Since the Strengths and Difficulties Questionnaire only has acceptable and weak internal consistencies, future studies would benefit from using a different instrument to measure externalizing and internalizing psychological symptoms, in order to investigate if that is what caused the lack of moderation.

Whereas no moderation was found, which is to say, no combined effect of the centrality of a traumatic event and early life experiences was found on psychopathological symptoms, the same cannot be said about mediation. In fact, our findings indicate that the relationship between early life experiences and internalizing and externalizing psychopathological symptoms can be explained by their relationship with the centrality of a traumatic event.

Regarding internalizing symptomatology, as hypothesized, there was a positive and significant direct effect of early experiences of threat and subordination on this type of symptomatology. Thus, adolescents that recall feeling frightened of their parents and having to behave in subordinate ways in their family experience more emotional symptoms and peer relationship problems. This is in line with previous studies (e.g., Gilbert et al., 2003; Pinto-Gouveia et al., 2016; León-Palacios et al., 2019; Xavier et al., 2016; Castilho et al., 2014) that found that depression, social comparison, shame (particularly thoughts that others look down on the self), negative affect, anxiety and social dysfunction were associated with greater feelings of threat and subordination within the family. Likewise, there was a negative and significant direct effect of early memories of warmth and safeness on internalizing symptoms. Thus, adolescents that recall more inner positive memories of feeling soothed, warm and safe in childhood experience less emotional symptoms and peer relationship problems, comparatively with adolescents who reported lower positive emotional memories. This is also consistent with previous findings (e.g. Pinto-Gouveia et al., 2016; Richter et al., 2009; Oliveira et al., 2016; Ferreira et al., 2021) that established a positive association between the presence of those memories and positive affect, better social relationships (i.e., a sense of safeness and connectedness to others) and psychological and social well-being, as well as a negative association with depressive, anxious and stress symptoms in adults (Matos et al., 2015; Capinha et al., 2020) and in adolescents (Cunha et al., 2014; Vagos et al., 2016; Santos et al., 2021).

Concerning externalizing symptomatology, this study appears to be the first to establish a positive and significant direct effect of early experiences of threat and

subordination on externalizing difficulties in community adolescents. Which is to say, adolescents who recall more experiences of threat and subordination, seem to show more externalizing psychological symptoms. The fact that this is a new finding might be due to the fact that studies usually apply internalizing symptomatology measures to evaluate psychopathology. Additionally, Santos et al. (2021) found a significant negative correlation between early memories of warmth and safeness and reactive/proactive aggression which aligns with our findings of a negative and significant direct effect of early memories of warmth and safeness on externalizing symptoms. However, these findings should be carefully interpreted, since the internal consistency of the externalizing subscale of the Strengths and Difficulties Questionnaire in the current study sample was weak.

As for the mediation effect, we found that the centrality of a traumatic event partially mediated the association between early experiences of threat and subordination and psychopathological symptoms. On one hand, adolescents who recall personal feelings of perceived threat and subordination in childhood have a higher sensitivity to threat, are more likely to be self-critical and might have had to adopt submissive and defensive behaviours with their parents (Gilbert 2003, 2009; Castilho et al., 2014). On the other hand, the fact that they perceive a traumatic memory as central to their personal identity and life narrative makes them more self-critic, more self-attacking and more likely to engage in experiential avoidance (Vagos et al., 2018; Pinto-Gouveia et al., 2013). Likewise, a traumatic experience of being criticized, shamed, abused, or rejected, that works as a central reference point to identity can be internalized in negative internal working models about the self and others (e.g., as being defective, inferior and negatively evaluated by others; Pinto-Gouveia et al., 2013; Cunha et al., 2012). Therefore, by engaging in these self-critical processing styles and developing negative internal working models over the course of childhood and adolescence, both recall of feelings of threat and centrality of a traumatic event, independently, and, in conjunction, lead to psychopathology, namely internalizing and externalizing psychological symptoms, during adolescence. This may mean that a significant part of the impact of early experiences of threat and subordination on internalizing and externalizing psychological symptoms may be due to the fact that a traumatic experience developed a central role in identity. Furthermore, we found that the recall of threat and submissiveness in childhood was significantly associated with the centrality of traumatic memories, suggesting that individuals who recall being forced by their parents to take unwanted or involuntary subordinate positions may tend to consider traumatic memories as more central to their lives and personal identities. This seems to be an innovative finding, deserving further investigation.

Early Experiences and Internalizing/Externalizing Symptomatology in Adolescents:

The Role of the Centrality of Traumatic Events

In addition, we also found that the centrality of a traumatic event partially mediated the association between early memories of warmth and safeness and internalizing and externalizing psychological symptoms. This finding suggests that the impact of early experiences of warmth and safeness on internalizing and externalizing psychological symptoms may be partially explained by the fact that a traumatic experience developed a central role in identity. The presence of early memories of warmth and safeness is associated with a number of psychological well-being indicators such as higher self-soothing and self-reassuring abilities; higher self-compassion, lower self-criticism, and better social relationships and is negatively associated with psychopathology (Irons et al., 2006; Richter et al., 2009; Cunha et al., 2014; Vagos et al., 2016; Capinha et al., 2021). Furthermore, and in line with previous studies (Matos et al., 2013, 2015, 2017) these type of memories are negatively associated with centrality of traumatic memories. In sum, it seems that individuals who recall less memories of being cared for and soothed during childhood may tend to consider traumatic memories as more central to their lives and personal identities, which, together, may play a key role on the development of internalizing and externalizing psychological symptoms.

Altogether, these findings contribute to the vast evidence that early experiences of life have an impact on current psychopathological symptoms, specifically in adolescents. Our findings suggest that the presence of negative emotional memories of threat and subordination may pose as a risk factor for psychopathology during adolescence (Gilbert et al., 2003, 2006; Irons et al., 2006; Richter et al., 2009; Matos & Pinto-Gouveia, 2010; Pinto-Gouveia et al., 2016), while the presence of positive emotional memories of warmth and safeness may work as a protective factor (Gilbert et al., 2006; Richter et al., 2009; Matos et al., 2015; Vagos et al., 2016). This evidence supports the idea that memories of feeling soothed, warm and safe as a child may be relevant in regulating states of negative affect, while memories of threat may heighten sensitivity to the emotion regulation system that handles threat, reinforcing psychopathological symptoms (Gilbert, 2009). Moreover, it seems that early experiences predict directly and indirectly (through the centrality of traumatic memories) internalizing and externalizing psychological symptoms. Thus, emotional memories of experiences of threat and experiences of warmth impact on internalizing and externalizing psychological symptoms through how much a traumatic memory is perceived as a reference point for everyday references, a turning point in one's life story and/or a central component of personal identity. Even though the variables used in all models are relevant, it is important to acknowledge that the tested mediation models only explained 10-

20% of the variance of psychological symptoms, which means that most of the variance is explained by other factors, not included in the models of the current study, that impact on internalizing and externalizing psychological symptoms.

Clinical Implications

This study may have important implications for clinical efforts, since findings emphasise that early experiences should be carefully assessed as they may have a relevant impact on externalizing and internalizing psychological symptoms. Additionally, it would be advantageous for clinicians to evaluate and work with traumatic memories, addressing and adjusting the meaning associated with those recalled experiences, in order to decrease current levels of internalizing (i.e., emotional symptoms and peer relationship problems) and externalizing (i.e., conduct problems and hyperactivity/inattention difficulties) symptoms. Likewise, clinicians should keep in mind the importance of the centrality of a traumatic event in the development and maintenance of psychopathology, as a means to understand if these memories and their traumatic impact are predisposing patients to psychopathology.

Moreover, current findings seem to support the benefit of an intervention approach that focuses on the promotion of the abilities of warmth, kindness, and compassion (Gilbert, 2009) to overcome psychopathological difficulties. Developing compassionate attributes and skills that enable effective affect regulation will possibly lead to better mental well-being.

Limitations, Contributions and Future Studies

This study is not free of limitations. First, results can only be interpreted as associations (and not as predictions) because of the cross-sectional nature of the data. Therefore, a replication of this study with a longitudinal design would be valuable. Second, the convenience sample used does not ensure full representativeness of the general population, so more representative samples of the general community population are needed, to confirm whether the absence of moderation remains. Moreover, the present study focused on a population of adolescents, so future research should be cautious when generalizing these findings for other populations (e.g., adults). Third, the use of a non-clinical sample does not allow us to extend our findings to clinical samples. Given the abovementioned clinical implications, future research using clinical samples, particularly individuals with

externalizing and internalizing disorders, would be needed. Forth, although self-report measures benefit from being anonymous, they may implicate errors such as response tendencies and social desirability. Further studies may gain from adding measures that control the effect of social desirability in responses. Furthermore, considering that some of the measures were about recall of childhood experiences, there is a possibility that participants did not remember how they felt and/or that these memories were influenced by their present emotional states. Finally, since the internal consistency of the externalizing subscale of the Strengths and Difficulties Questionnaire was weak, caution is advised when interpreting the current findings regarding externalizing psychological symptoms.

Despite these limitations, the current study poses advanced relevant contributions. This is the first study to show that the relationship between early life experiences of threat and subordination and of warmth and safeness with internalizing and externalizing psychological symptoms is mediated by the centrality of traumatic memories. Moreover, it is the first study to associate early life experiences of threat and subordination and externalizing psychological symptoms.

Conclusion

Centrality of event theory (Berntsen & Rubin, 2006, 2007) indicates that memories of traumatic events can turn into a reference point for the organization of autobiographical knowledge, anchoring one's self-concept and providing meaning and structure to one's life story, due to their distinctiveness and emotional impact. Similarly, early life experiences of threat and subordination and of warmth and safeness may either pose as a risk factor for psychopathology (Gilbert et al., 2003, 2006; Irons et al., 2006; Richter et al., 2009; Matos & Pinto-Gouveia, 2010; Pinto-Gouveia et al., 2016), or work as a protective factor (Gilbert et al., 2006; Richter et al., 2009; Matos et al., 2015; Vagos et al., 2016). Our findings found that early life experiences predict directly and indirectly, through the centrality of traumatic memories, internalizing and externalizing psychological symptoms. Therefore, the current study is a valuable contribution, by highlighting the mediating role of centrality of traumatic memories on internalizing and externalizing psychological symptoms in community adolescents. Clinical practice can benefit from these findings by incorporating work with traumatic memories perceived as central to the adolescent.

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