

Shame Memories and Psychopathology in Adolescence: The Mediator Effect of Shame

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ABSTRACT

Research on shame and shame memories and their impact on psychopathology is scarce in adolescence. This study explored the relationships among these variables in this developmental period and tested a mediator model in which current shame feelings (external and internal shame) were predicted to be mediators between shame memories traumatic and centrality features and depressive and anxiety symptoms. Three hundred and fifty four adolescents were assessed on measures of shame traumatic memory, centrality of shame memory, external shame, internal shame and depression and anxiety symptoms. Path analysis results showed that current feelings of external and internal shame fully mediated the effect of centrality of shame memory on depression and anxiety symptoms and partially mediated the effect of shame traumatic memory on these psychopathological indicators. These findings emphasise the role of external and internal shame on how shame experiences that become traumatic and central memories to self-identity impact on psychopathology, validating the biopsychosocial model of shame in adolescence. In addition, our study may contribute to develop clinical assessment and intervention with adolescents.

Key words: external shame, internal shame, shame memory, depression, anxiety, adolescents.

The transition into adolescence is marked by a significant rise in the prevalence of mental health problems, namely depression (Angold & Rutter, 1992; Cole, Tram, Martin, Hoffman, Ruiz, MJacquez, & Maschman, 2002; Fleming, Offord, & Boyle, 1989) and anxiety (Kashany & Orvaschel, 1990).

This increased vulnerability to emotional difficulties may be related to the variety of physiological, psychological, relational and environmental changes that characterize the transitional period that is adolescence. These developmental changes encompass complex models of self and others, the formation of novel and autonomous self-identity, concerns with peer-group relationships and the structuring of new peer group identities, and the decrease of parents influence along with the increased use of peers as sources of support, values and sense of belonging (Allen & Land, 1999; Gilbert & Irons, 2009;

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McLean, 2005; McLean, Breen, & Fournier, 2010; Steinberg, 2002; Wolfe & Mash, 2006). Hence, in adolescence, there is a heightened focus on self-other evaluations and competition with each other for acceptance, approval and status (Wolfe, Lennox, & Cutler, 1986). Such concerns may render one more vulnerable to difficulties with self-consciousness, self-presentation, fear of rejection and being assigned an unwanted and inferior social rank position, all of which are linked to the experience of shame (Gilbert & Irons, 2009).

Numerous theoretical accounts converge on the notion that shame is a multifaceted self-conscious emotion related to a self-focused and self-evaluative experience of the self (e.g., as inferior, inadequate, flawed, powerless; Kaufman, 1989; Lewis, 1971; Tangney & Dearing, 2002; Tangney & Fisher, 1995; Tracy & Robins, 2004). However, shame is fundamentally a socially-focused emotion, linked to the experience of having negative aspects of the self exposed (Lewis, 1992, 2003), and to a sense of self as negatively felt (e.g., contempt, anger, ridicule) and judged (e.g., as defective, inferior, incompetent) by others (Gilbert, 1992, 1998, 2002).

The idea that shame is specifically social, since it has to arise in the social arenas, has been developed by Gilbert in an integrative and evolutionary perspective -the biopsychosocial model of shame (Gilbert, 1998, 2002, 2007). In light of this approach, shame derives from human's innate motives for attachment (Bowlby, 1969/1982, 1973; Cassidy & Shaver, 1999), group belonging (Baumeister & Leary, 1995) and concern with one's relative social place (Gilbert, 1992, 2000). In addition, a set of unfolding cognitive competencies for social understanding (e.g., theory of mind, Byrne, 1995; mentalizing, Liotti & Gilbert, 2011) and for self-conscious awareness (Lewis, 2003; Tracy & Robins, 2004) mature as we grow, in order to monitor self-in-relationship-to-others, and impact on social behavior and self-evaluations (Baldwin, 2005; Gilbert, 2007). These cognitive abilities evolved to make us highly sensitive, focused and responsive to what others think and feel about the self, since human survival, prospering and welfare greatly depend on being able to create desirable images of the self in the mind of the others. In other words, to be seen as an attractive social agent (e.g., to be valued, accepted, loved, nurtured by others) increases the chances of engaging others in the co-creation of advantageous social roles (e.g., friend, lover, ally, team member). Thus, to be loved, valued and chosen by others for important social roles, influences brain maturation and affect regulation, fostering feelings of safeness and connectedness and toning down distress in face of threats. In contrast, to be seen as an unattractive social agent (e.g., being criticized, ridiculed, rejected, abused), compromises effective emotion regulation, undermines the co-construction of favorable social roles and triggers threat related responses (Ectoff, 1999; Gilbert, 1989, 1992, 1997, 2007; Gilbert & Irons, 2009).

In this context, shame arises in the dynamics of this competition for social attractiveness, emerging from our evolved cognitive competencies for processing social and self related information. Hence, shame acts as a warning signal that one is unable to create positive feelings in others, and thus, exists negatively in their minds (e.g., as boring, inferior, inadequate, powerless), standing at risk of being rejected, excluded, marginalized, attacked or persecuted (Gilbert, 1997, 2002, 2003 2007; Gilbert & Irons, 2009). Shame has then evolved as a strategy to keep the self safe from possible attacks

and rejection from others, by triggering self-monitoring and self-blaming and defensive submissive responses.

When one experiences the self as someone with negative qualities, or lack of positive ones, in the eyes of the others, this can activate what Gilbert (1997, 1998, 2003; Gilbert & Irons, 2009) defined as external shame. In external shame, one's attention and cognitive processing are attuned outwardly, to what is going on in the mind of the other about the self, and one's behavior might be orientated towards trying to positively influence how others see the self (e.g., by submitting, displaying desirable qualities, try to please others).

According to this model, this experience of the other as a threat to self and self-identity can prompt externalizing (e.g., anger, aggression) or internalizing (e.g. submissive withdrawing) defenses. Shame can therefore be internalized in that one may start to identify with the mind of the other and engage in negative self-evaluations and feelings, for purposes of restoring one's image and protect the self against rejection or attacks from others (Gilbert, 1998, 2003; Gilbert & Irons, 2009). Internal shame is then when one experiences the self as globally flawed, inadequate, unattractive, undesired or bad, with one's attention and processing directed inwardly, to the inner landscapes of the self (e.g., emotions, personal characteristic, behaviour; Gilbert, 2003, 2007; Gilbert & Irons, 2009; Tangney & Dearing, 2002). Typically, shame experiences involve both externally and internally focused shame, fueling each other. Still, proneness to experience one type rather than the other in a given shame episode may vary according to factors, such as early history of shaming experiences or the developmental period.

Although external and internal shame have consistently been associated with the development and maintenance of mental health problems in adults, particularly depression (Andrews, Qian, & Valentine, 2002; Ashby, Rice, & Martin, 2006; Cheung, Gilbert & Irons, 2004; Matos, Pinto-Gouveia, & Duarte, 2011a, 2011b; Tangney, Stuewig, & Mashek, 2007; Thompson & Berenbaum, 2006; for a review see, Kim, Thibodeau, & Jorgensen, 2011) and anxiety (Matos *et al.*, 2011a, 2011b; Pinto-Gouveia & Matos, 2011; Tangney, Wagner, & Gramzow, 1992), research on these two facets of shame in adolescence remains scant.

Since childhood and throughout life, shame experiences occur in specific interactions within the family environment or in wider social groups, which define what is perceived as attractive, belonging, and accepted or, on the contrary, as unattractive, rejected and outsider (Gilbert, 1998, 2002, 2007). The early precursors of shame take place in adverse rearing interactions within the family, in form of parental criticism, put-down, rejection, sibling favoritism (Gilbert, Allan & Goss, 1996; Tangney & Dearing, 2002), neglect (Claesson & Sohlberg, 2002), threat and submission (Gilbert, Cheung, Grandfield, Campey, & Irons, 2003) and verbal, physical and sexual abuse (Andrews, 1998, 2002; Feiring, Taska, & Lewis, 2002; Stuewig & McCloskey, 2005; Teicher, Samson, Polcari, & McGrenery, 2006), which elevate vulnerability to psychopathology. With the transition into adolescence, the social world focus shifts to peer-group relationships, and adolescents become more perceptive of the emotions and images they are creating in the minds of their peers, opening up the potential to experience shame in this domain. So, being seen as unattractive in this social realm may result in peer rejection, exclusion,

bullying, teasing or discrimination, which are known to be linked to psychological problems (Gilbert & Irons, 2009; Hawker & Boulton, 2000; Pinel, 1999).

In this sense, early shame episodes entail major threat to the social self and self-identity. Recent research has indeed found that adult's recollections of shame experiences from childhood and adolescence can function as traumatic memories, involving intrusions, hyperarousal symptoms and strong emotional avoidance (Matos & Pinto-Gouveia, 2010, 2011a). These threat memories can texture the whole sense of self and become central to self-identity, structure one's life narrative, forming a highly available reference point to attribute meaning to past, current and future experiences (Matos & Pinto-Gouveia, 2011b; Pinto-Gouveia & Matos, 2011). Also, shame traumatic and central memories were found to be related to increased feelings of external and internal shame in adulthood and greater depression, anxiety, stress, social anxiety and paranoid symptoms (Matos & Pinto-Gouveia, 2010, 2011a, 2011b; Matos, Pinto-Gouveia & Duarte, 2011c; Matos, Pinto-Gouveia, & Gilbert, 2011; Pinto-Gouveia & Matos, 2011). In another study, Matos, Pinto-Gouveia and Duarte (2011d) examined the mediator effect of shame on the relationships between shame memories and memories of safeness and warmth from childhood and adolescence and depressive symptoms in adults. Results established that early memories of shame and lack of safeness influence upon depression was fully through their effect upon internal shame, whereas external shame did not mediate these linkages.

In adolescence, however, research on shame feelings and memories is scarce. A study tracking the trajectory of self-conscious emotions across the life span reported that shame is greater in adolescence, decreasing into middle adulthood, and is negatively related to psychological well-being throughout life (Orth, Robins, & Soto, 2010). Furthermore, shame has been linked to poorer mental health, such as depression, in youth (Reimer, 1996; Rubeis & Hollenstein, 2009) and shaming experiences have been found to play a crucial role in adolescents' health and well-being (Åslund, Nilsson, Starrin, & Sjöberg, 2007; Reimer, 1996). In another study, negative social comparison and submissive behavior (two social rank variables related to shame) were found to mediate the association between insecure attachment and anxiety and depression (Irons & Gilbert, 2005).

Even though there is strong empirical support for the link between early memories of shame, and later vulnerability to shame and psychopathology in adults, these associations have never been explored in an adolescent's sample. Furthermore, given the crucial role shame plays in the formation of one's sense of self and self-identity as a social agent (Gilbert, 1998, 2007; Lewis, 1992; Tangney & Dearing, 2002; Tracy & Robins, 2004), one should expect this emotion to have a significant impact on poor psychological adjustment indicators in this developmental period. In addition, the way an adolescent experiences the others as relating to the self is key to shame in this period and may become associated with adolescents' maturing sense of self (Gilbert & Irons, 2009; Lewis, 2003). On the other hand, adolescence is when individuals engage in autobiographical reasoning processes and begin to make connections between the self and past events. In fact, recent research has shown that it is in adolescence that personal memories become integrated in one's life narrative and self-identity (McLean, 2005, 2008; McLean *et*

al., 2010; McLean & Thorne, 2003; Thorne, McLean, & Lawrence, 2004). Thus, a key research question is how shame experiences come to be structured as traumatic and central memories to adolescents' identity and life story, forming the basis or reinforcing internal working models of self (e.g., as worthy, attractive or unworthy and unattractive) and others (e.g., as supportive and accepting or threatening or rejecting), translate into shame feelings and elevate vulnerability to emotional psychological problems (Baldwin & Dandeneau, 2005; Matos & Pinto-Gouveia, 2011a; Mikulincer & Shaver, 2004, 2005).

Therefore, the current study built upon prior research using adult samples and sought out to answer this question exploring the relationship between shame traumatic memory, centrality of shame memory, external and internal shame and symptoms of depression and anxiety in a sample of adolescents. Taken together the aforementioned theoretical and empirical accounts, we hypothesize that adolescents whose shame memories are regarded as more traumatic and central to identity and life story would score higher in external and internal shame and show greater levels of depression and anxiety. We further expect external and internal shame to be strongly linked to depressive and anxiety symptoms. Moreover, the primary aim of this study was to test the mediator effect of current feelings of external and internal shame on the relationship between shame traumatic memory and centrality of shame memory and depression and anxiety symptoms. Based upon past research and the abovementioned conceptualizations, we predict that adolescent's shame traumatic and central memories impact upon depressive and anxiety symptoms through their effect upon feelings of external and internal shame.

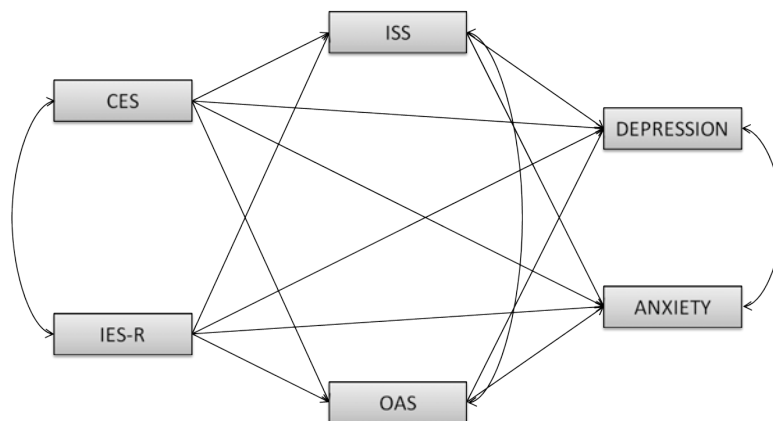


Figure 1. The theoretical model.

METHOD

Participants and Procedure

Three hundred and fifty four adolescents (157 boys and 197 girls) from 7th to 12th grade (*years of education mean*= 9.26, *SD* 1.61) completed a series of self-report

questionnaires. The mean age was 15 ($SD = 1.78$) years old, ranging from 12 to 18 and no gender differences were found concerning age [$t(352) = .180, p = .857$].

This adolescents' sample was collected from public schools in the district of Coimbra, Portugal. Ethics approval was granted by the Head Teacher of the school and parents were informed on the goals of the research and gave their consent. After given a brief description on the purpose of the study and explained that their cooperation was voluntary and their answers were anonymous and confidential, all adolescents completed the measures at the beginning of a class at the same time and order that the rest of their classmates.

Measures

Priming for the Shame Memory. Before completing the measures, participants were given a brief introduction on the concept of shame and were asked to recall a significant and stressful shame experience from their childhood or adolescence. Afterwards they were instructed to answer the two shame memory related questionnaires (described below) based on that experience. This adjustment in the instructions has been made in other studies (Matos & Pinto-Gouveia, 2010; Pinto-Gouveia & Matos, 2011) and it doesn't seem to affect the validity of this measure, since the items' content is well suited for both instructions.

Centrality of Event Scale (CES; Berntsen & Rubin, 2006; Portuguese version by Matos, Pinto-Gouveia, & Gomes, 2010) assesses the extent to which a memory for a stressful event (in this case a shame experience reported by each participant) forms a reference point for personal identity and to attribution of meaning to other experiences in a person's life. This self-report questionnaire consists of 20 items, rated on 5-point Likert scale (1-5), that measure three interdependent characteristics of a highly negative emotional event that load on to a single underlying factor: the extent to which the event is a central component of one's personal identity (e.g., "I feel that this event has become part of my identity."), is viewed as a landmark in one's life story (e.g., "I feel that this event has become a central part of my life story.") and acts as a reference point for inferences and attributions in everyday life (e.g., "This event has coloured the way I think and feel about other experiences."). In its original study and Portuguese version, CES showed sound psychometric properties with a high internal consistency (Cronbach $\alpha = .94$ and $.96$ respectively). Cronbach' alpha for this measure in the current study is given in Table 1.

Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997; Portuguese version by Matos, Pinto-Gouveia, & Martins, 2010) is a self-report instrument designed to measure current subjective distress for any specific life event and, specifically in this study, in relation to the shame memory nominated by the participants. This scale has 22 items rated on a 5-point Likert scale (0-4). The IES-R is composed by three subscales that measure the three main characteristics of traumatic memories: avoidance (e.g., "I stayed away from reminders of it"), intrusion (e.g., "Any reminder brought back feelings about it") and hyperarousal (e.g., "I was jumpy and easily startled") that parallel the DSM-IV criteria for PTSD. In the original study, Cronbach alphas of the subscales ranged from .87 to .92 for intrusion, .84 to .86 for avoidance and .79 to .90 for hyperarousal (Weiss & Marmar, 1997). The Portuguese version revealed a one-dimensional structure with sound psychometric properties, with a Cronbach' alpha of .96 (Matos, Pinto-Gouveia, & Martins, 2010). Cronbach' alpha for this measure in this study is shown in Table 1.

Other As Shamer (OAS; Goss, Gilbert, & Allan, 1994; Portuguese version by Matos, Pinto-Gouveia, & Duarte, 2011a) is a 18 item scale measuring external shame (global judgements of how people think others view them). Respondents rate on a 5-point

Likert scale (0–4) the frequency of their feelings and experiences, for example, “I feel other people see me as not quite good enough” and “I think that other people look down on me”. Scores can range from 0 to 72 with higher scores on this scale indicative of higher external shame. A Cronbach alpha of .92 was reported in the original study of this scale Goss *et al.* (1994). The Cronbach alpha for the present study is presented in Table 1.

Internalized Shame Scale (ISS; Cook, 1994, 2001; Portuguese version by Matos, Pinto-Gouveia, & Duarte, 2011b) comprises a 24-item measure of internal shame, consisting of negatively worded items (e.g., “Compared with other people, I feel like I somehow never measure up”) assessing the frequency in which people experience feelings of shame and a 6-item self-esteem scale consisting of positively worded items (e.g., “All in all, I am inclined to feel that I am a success”) assessing self-esteem. All of the items are rated on a scale of “0,” meaning “never,” to “4,” meaning “almost always.” The shame subscale items were based on phenomenological descriptions of shame feelings. In this study, only the shame subscale was used as a measure of internal shame. Previous studies (Cook, 1996) have reported test–retest correlations of .84 and .69, respectively, and have reported good convergent and divergent validity. The internal consistency of ISS shame subscale is reported in Table 1.

Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro, Honrado & Leal, 2004) is a self-report measure composed of 42 items and designed to assess three dimensions of psychopathological symptoms: depression, anxiety and stress. The items indicate negative emotional symptoms and are rated on a 4-point Likert scale (0–3). On the original version, Lovibond and Lovibond (1995) found the subscales to have high internal consistency (Depression subscale Cronbach’s $\alpha = .91$; Anxiety subscale Cronbach’s $\alpha = .84$; Stress subscale Cronbach’s $\alpha = .90$). In the present study, only the Depression and Anxiety subscales will be considered. Cronbach alpha for this subscale in this study is shown in Table 1.

Data analysis

Data analyses were carried out using PASW (v. 18 SPSS) and path analyses were estimated in AMOS (v. 18, SPSS).

Pearson correlation coefficients were performed to explore the association between shame memory variables, external and internal shame and depressive and anxiety symptoms (Cohen, Cohen, West & Aiken, 2003).

A mediational study was then conducted in which we tested whether external shame (OAS) and internal shame (ISS) (mediator variables) mediated the relationship between centrality of shame memory (CES) and shame traumatic memory (IES-R) (independent, exogenous variables) and depression and anxiety (DASS-21 Depression and Anxiety subscales) (dependent, endogenous variables).

A *path analysis* was carried out to test for the mediator effects described above. This technique is a special case of structural equation modeling (SEM) and considers hypothetical causal relations between variables that have already been defined. A Maximum Likelihood method was used to evaluate the regression coefficients significance. SEM procedure estimates the optimal effect of one set of variables on another set of variables in the same equation, controlling for error (Byrne, 2010; Kline, 2005). Multivariate outliers were screened using Mahalanobis squared distance (D2) method and uni and multivariate normality was assessed by skewness and kurtosis coefficients. There was no severe violation of normal distribution ($|Sk| < 3$ and $|Kul| < 8-10$; Kline, 2005).

The significance of direct, indirect and total effects was assessed using χ^2 tests (Kline, 2005). Bootstrapping resampling method was further used to test the significance of the meditational paths, using 1000 bootstrap samples and 95% confidence intervals (CIs; Kline, 2005). Effects with $p < .050$ were considered statistically significant.

RESULTS

The means, standard deviations and Cronbach's alphas of the variables studied are reported in Table 1. All scales showed high internal consistency. In comparison to adult samples, the means and standard deviations for shame memories and shame variables are generally higher (Matos & Pinto-Gouveia, 2010; Matos, Pinto-Gouveia, & Duarte, 2011a, 2011b). In relation to psychopathology, similar means for depression and anxiety subscales were found in studies with adolescent samples (Pinto, 2011).

Pearson product-moment correlations for all variables are reported in Table 1. Centrality of shame memory and shame traumatic memory were significantly and positively correlated with each other and with depression. Centrality of shame memory revealed positive moderate correlations with external and internal shame as well as with depression and anxiety symptoms. In turn, shame traumatic memory was positively and strongly linked to external and internal shame and to depression and anxiety. External and internal shame showed positive and strong correlations with psychopathology variables and with each other.

Given the previous findings and the proposed hypotheses, we intended to test whether external and internal shame mediated the effect of centrality of shame memory and shame traumatic memory on depressive and anxiety symptoms.

The hypothesized model (Figure 1) was tested through a fully saturated model (i.e. zero degrees of freedom), consisting of 27 parameters. Given that fully saturated models always produce a perfect fit to the data, model fit indices were neither examined nor reported. The model explained 59% of depression and 56% of anxiety variances. In this model all paths were statistically significant with the exception of the direct effect of centrality of shame memory on depression ($b_{CES} = .025$; $SEb = .013$; $Z = 1.944$; $p = .052$; $b_{CES} = .081$). Thus, this non significant path was excluded and the model recalculated. In

Table 1. Means (*M*), Standard Deviations (*SD*), Cronbach's alphas (α) and Intercorrelation scores on self-report measures ($N = 354$).

Measure	<i>M</i>	<i>SD</i>	α	CES	IES-R	OAS	ISS	Depression
CES	51.78	18.35	.95	-				
IES-R	4.75	2.27	.94	.47	-			
OAS	25.05	14.78	.95	.53	.62	-		
ISS	43.72	20.58	.95	.51	.65	.77	-	
Depression	7.42	5.75	.90	.49	.62	.69	.71	-
Anxiety	6.38	5.39	.88	.48	.65	.68	.64	.82

Note: All coefficients are significant at $p < .001$; CES= Centrality of shame memories; IES-R= Shame traumatic memory; OAS= External shame; ISS= Internal shame; Depression= DASS-21 depression subscale; Anxiety= DASS-21 anxiety subscale.

this second model the direct effect of centrality of shame memory on anxiety ($b_{CES} = .011$; $SEb = .010$; $Z = 1.136$; $p = .256$; $b_{CES} = .039$) emerged as the only non significant path.

For this reason, this non significant path was further removed and the model recalculated (Figure 2). In the evaluation of the final adjusted model, we found a very good model fit with a non significant chi-square of 5.034 ($p = .081$). Besides, the analysis of well-known and recommended goodness of fit indices (Kline, 2005) indicated an excellent model fit (CMIN/DF= 2.517; CFI= .998; TLI= .984; NFI= .997; RMSEA= .066). All the paths were statistically significant and the significance of indirect mediational paths was further confirmed using bootstrap resampling method. The model accounted for 58% of depression and 56% of anxiety variances.

In regard to depression, indirect mediational test results indicated that centrality of shame memory (CES) predicted greater depression fully through heightened feelings of external (OAS) and internal shame (ISS) ($b_{CES} = .178$, 95% $CI = .120$ to $.244$). Shame traumatic memory (IES-R) predicted elevated depression partially through increased external (OAS) and internal shame (ISS) ($b_{IES-R} = .317$, 95% $CI = .253$ to $.386$), but also revealed a direct effect of $.330$.

For anxiety, indirect mediational tests showed that centrality of shame memory (CES) indirectly predicted increased anxiety symptoms fully through greater feelings of external (OAS) and internal shame (ISS) ($b_{CES} = .148$, 95% $CI = .092$ to $.208$). Shame traumatic memory (IES-R) predicted elevated anxiety partially through increased external (OAS) and internal shame (ISS) ($b_{IES-R} = .246$ (95% $CI = .186$ to $.309$) and showed a significant direct effect of $.337$. Figure 2 presents the mediation model with regression coefficients standardized estimates and R^2 for depression, anxiety, internal and external shame.

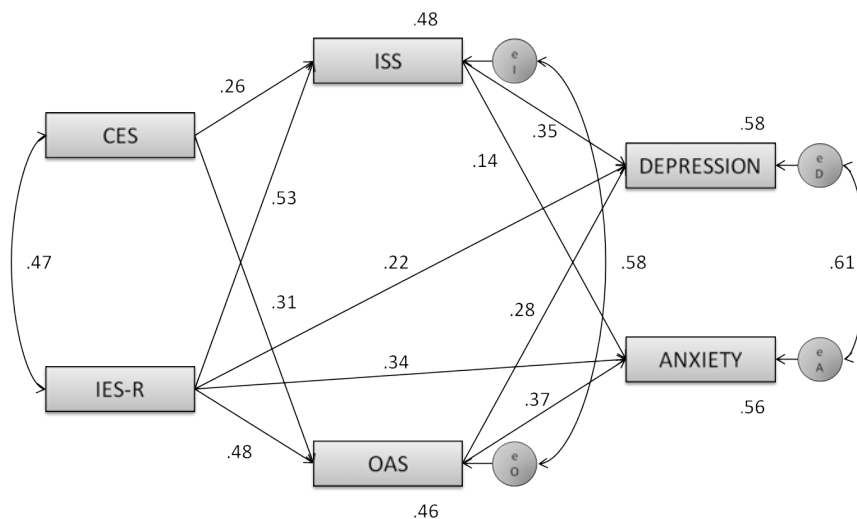


Figure 2. Results of mediation path analysis showing the relationships among centrality of shame memory (CES), shame traumatic memory (IES-R) depression and anxiety, having external shame (OAS) and internal shame (ISS) as mediators, with standardised estimates and square multiple correlations ($N = 354$).

In conclusion, these findings reveal that internal and external shame fully mediate the effect of centrality of shame memory on depressive and anxiety symptoms and partially mediate the effect of shame traumatic memory on these variables.

DISCUSSION

The pathogenic nature of shame and early aversive experiences has been established in several studies, mostly conducted in adult samples. Adolescence is marked by foremost developmental changes and tasks, such as identity formation, establishing friendships, group identification or emotional independence. These characteristics turn it into a period of vulnerability to the impact of adverse experiences, in particular, shame ones. Therefore, the present study aimed at investigating the relations among shame memories traumatic and centrality features, external and internal shame and depressive and anxiety symptoms in a sample of adolescents.

Consistent with prior research (Matos & Pinto-Gouveia, 2010, 2011a, 2011b; Pinto-Gouveia & Matos, 2011) and our hypothesis, correlation analyses results showed that shame traumatic memory and centrality of shame memory were moderately to strongly associated with measures of shame (external and internal) and depression and anxiety symptoms. The same is to say that adolescents whose early shame experiences operate as traumatic memories, eliciting intrusions, hyper arousal and avoidance symptoms, and who regard these shame events as key to personal identity and as turning points in their life story, tend to develop a sense of self as existing negatively in the eyes of the others (i.e., external shame) and in their own eyes (i.e., internal shame) and present increased negative emotional states (i.e., depression and anxiety). In addition, external and internal shame were found to be strongly correlated with depression and anxiety. These findings are in line with studies conducted in adult samples (Matos *et al.*, 2011a, 2011b; for a review see, Kim *et al.*, 2011). By distinguishing between external and internal shame, our study extends research in adolescence on the linkage between shame and psychopathology (Irons & Gilbert, 2005; Reimer, 1996; Rubeis & Hollenstein, 2009).

However, the question remained as to the role of external and internal shame on the relationship between shame traumatic memory and centrality of shame memory and depression and anxiety symptoms. Thus this study tested a mediator model in which we examined whether shame memories' traumatic and centrality qualities impacted upon depression and anxiety through their effect upon current feelings of external and internal shame. In accordance with our prediction, path analysis results indicated that internal and external shame fully mediate the effect of centrality of shame memory on depression and anxiety and partially mediate the effect of shame traumatic memory on these psychopathological indicators. This means that shame memories that become central to personal identity and life story impact on depressive symptoms through their influence on generating feelings and beliefs that one exists negatively in the mind of the others (e.g. as inferior, worthless, unattractive) and on perceptions of the self as inferior, inadequate, defective or unlovable. In turn, the impact of shame memories that

operate as traumatic ones (e.g. with intrusion, hyperarousal and avoidance symptoms) on depression is only partially explained by their influence on current feelings of the self as flawed, undesirable, inadequate or bad in its own eyes and in the eyes of the others. In addition, the impact of shame memories that are key to adolescent's identity on anxiety operates through their influence on fostering current shame feelings focused on how one exists in the mind of the others and on negative self-evaluations and feelings. Furthermore, the influence of early shame experiences that function as traumatic memories on anxiety symptoms is in part explained by their impact on promoting a sense of the self as existing negatively in one's own eyes and for others. Noteworthy is also the independent effect of shame traumatic memories on depressive and anxiety symptoms, which is not fully explained by their effect on current feelings of shame.

These results can be understood in light of evolutionary biopsychosocial model of shame (Gilbert, 1998, 2002, 2007). Shame experiences in early life, by acting as conditioned emotional memories, may trigger intrusions, physiological arousal and avoidance and become central to adolescents' self-identity and life story, and thus engender a sense of current threat to the (social) self, leaving one to feel inferior, flawed, unlovable, undesired and alone. These feelings of inferiority and disconnectedness from others seem to be constellated around a sense of self as negatively seen by others and judged by the self, which in turn may render the adolescent more vulnerable to enter defeat and threat emotional states when facing adverse life events. The present data are in accordance with earlier work on shame memories, shame and psychopathology in adults (Matos *et al.*, 2011d), highlighting some distinctions that may be related to particular features of this developmental stage. In particular, whereas in adults internal shame was found to be the only mediator of shame memories and centrality features' impact on depression (Matos *et al.*, 2011d), in adolescents both externally and internally focused shame were significant mediators of shame memories and centrality features' impact on depression and anxiety, with external shame revealing the most expressive effect upon these psychopathological indicators. A possible explanation for these results might be related to the major developmental tasks of adolescence (e.g., establishing friendships, group identification or emotional independence), which are especially orientated to the others. In addition, the fact that self-identity is co-constructed in one's interactions with others and based on the experience of the self linked to how others view and respond to the self might further help to make sense of this finding. This idea is consistent with shame and attachment theories (Bowlby, 1969/1982; Cooley, 1902; Gilbert, 1998, 2002; Kaufman, 1989; Kohut, 1977) proposing that the way we experience ourselves, that is our identity, is mainly derived from how we feel we exist for others (i.e., external shame). In adults, however and in accordance with Gilbert's model of shame (1998, 2002, 2007), it might be that external shame (particularly relevant in adolescence) becomes internalized as one grows older and self-identity is consolidated.

Furthermore, our findings are in line with the notion that personal memories become part of personal identity and life story in adolescence (McLean, 2005; McLean *et al.*, 2010; MacLean & Thorne, 2003). Similarly to studies in adults (Matos & Pinto-Gouveia, 2011a; Matos *et al.*, 2011c), these data suggest that shame experiences can function as traumatic and central memories to adolescents' self-identity and influence

the formation of negative internal working models of self and others, thus increasing proneness to feelings of shame and to emotional difficulties.

Some methodological limitations should be noted when interpreting our results. First, the cross-sectional design of this study impairs the confidence in causal relations between variables. Even so, the use of path analysis, a powerful statistical technique based on structural equation modeling, enhances the strength in our conclusions. Another limitation relates to the use of self-report data to assess shame memories, which may raise some concerns regarding the influence of current emotional states on these recollections. Still, not only studies have shown that retrospective recall data are generally reliable, accurate and stable over time (Brewin, Andrews, & Gotlib, 1993), but also, the temporal proximity to the experiences recalled in adolescence may enhance the accuracy and reliability of the memories. Social desirability issues in using self-report questionnaires might have influenced adolescents' responses in shame and psychopathology measures. Future research should attempt to overcome these limitations by, for instance, using a prospective design and other assessment methods, such as structured interviews to evaluate shame memories and shame (specifically, the Shame Experiences Interview, Matos & Pinto-Gouveia, 2006).

Nevertheless, our study might have theoretical implications, validating the biopsychosocial model of shame in adolescence (Gilbert & Irons, 2009). Besides, these results highlight the clinical relevance of assessing and addressing shame and shame memories when working with adolescents suffering from depression or anxiety, since this can help to reduce current symptoms and to prevent future emotional problems linked to these early shame experiences.

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