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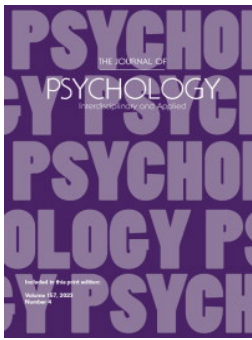
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Primary and Secondary Psychopathic Traits: Investigating the Role of Attachment and Experiences of Shame

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ABSTRACT

Primary and secondary psychopathic traits have been documented in the general population and previous research has shown their link to adult insecure attachment and shame. However, there has been a gap in the literature examining the specific role of attachment avoidance and anxiety, and experiences of shame in the expression of these psychopathic traits. This study aimed to explore the associations between the attachment dimensions of anxiety and avoidance, in addition to characterological, behavioral and body shame with primary and secondary psychopathic traits. A non-clinical sample of 293 adults (M age= 30.77, SD =12.64; 34% males) was recruited and completed an online battery of questionnaires. Hierarchical regression analyses indicated that demographic variables (age and gender) explained the largest variance for primary psychopathic traits, while the attachment dimensions (anxiety and avoidance) explaining the largest variance for secondary psychopathic traits. Characterological shame had a direct and indirect effect on both primary and secondary psychopathic traits. The findings highlight the need to examine psychopathic traits in community samples as a multidimensional construct, with a particular focus on also assessing attachment dimensions and shame subtypes.

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Primary psychopathic traits; secondary psychopathic traits; attachment avoidance; attachment anxiety; shame

Introduction

Psychopathy is a set of personality traits and behaviors characterized by shallow affect, lack of empathy, impulsivity and antisocial behavior in individuals who have been shown to be manipulative, egocentric and have superficial charm (Glenn et al., 2011; Hare, 1996). Elevated psychopathic traits are more common in forensic populations (Fox & DeLisi, 2019), however these traits have been documented in community samples also (Colins et al., 2017; Sanz-García et al., 2021). Psychopathic traits can have a negative impact on the individual (affecting their academic and occupational development) but also the individual's close social network, such as colleagues and family members (Baker et al., 2023; Mathieu & Babiak, 2016; Weiss et al., 2018). There has been a debate within the field regarding whether psychopathy should be

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conceptualized as categorical or dimensional construct (Harris et al., 1994; Sellbom & Drislane, 2021). Some researchers argue that psychopathy is a two-dimensional construct: including primary and secondary psychopathic traits (Karpman, 1941; Levenson et al., 1995). Although both factors are associated with antisocial behaviors, hostility and reduced empathy, primary psychopathic traits predominantly reflect interpersonal and affective difficulties and characteristics such as grandiosity, manipulative behaviors, superficial charm, a lack of remorse or guilt, and emotional detachment (Karpman, 1941). Secondary psychopathic traits instead refer to antisocial and lifestyle features, often portrayed by individuals who are irresponsible, impulsive, incapable of long-term planning and display erratic, aggressive behaviors (Karpman, 1941). Understanding the similarities and differences behind the different forms of psychopathic traits is particularly important due to the negative impact they have on the individual and the community (Baker et al., 2023; Neumann et al., 2015).

Identifying differences in primary and secondary psychopathic traits has become increasingly important (Christian et al., 2017; Lee & Salekin, 2010; Mayer et al., 2020) with some research suggesting that primary and secondary psychopathic traits emerge in childhood (Craig et al., 2021), are moderately stable from adolescence into adulthood (Eisenbarth et al., 2016; Fanti & Lordos, 2022), and are associated with an inability to form meaningful, stable relationships across the lifespan (Lynam et al., 2007, 2008; Mooney et al., 2019). Despite these similarities, differences exist in their underlying etiology (Karpman, 1941; Levenson et al., 1995; Prado et al., 2016). Primary psychopathic traits are believed to be more biologically driven, being strongly influenced by an emotional deficit present from birth while secondary psychopathic traits, on the other hand, are more strongly related to early environmental risk factors such as trauma and negative parenting (Hong et al., 2016; Karpman, 1941; Moreira et al., 2020).

The risk and protective factors associated with primary as oppose to secondary psychopathic traits are of particular importance as they provide a deeper understanding of the mechanisms involved in the development and maintenance of primary and secondary psychopathic traits (Dean et al., 2013; Lyons, 2015b). For example, the interpersonal and affective characteristics of primary psychopathic traits are linked to lower levels of fear and increased social confidence (Falkenbach et al., 2014; Hofmann et al., 2021; Morrison & Gilbert, 2001). Contrastingly, behavioral and lifestyle psychopathic features (secondary psychopathic traits) are linked with delinquency, risk-taking and trait anxiety (Geerlings et al., 2020; Grover & Furnham, 2021; Hofmann et al., 2021). It is therefore crucial for research to identify risk and protective factors associated to primary and secondary psychopathic traits so that intervention efforts can target specific deficits and be more effective.

Attachment Avoidance and Anxiety

Securely attached individuals tend to be confident and comfortable in their relationships (Schimmenti et al., 2014) and are able to form affectionate bonds with significant others. Individuals with insecure attachments are overly dependent on others (anxious) or lack trust and are overly dependent on themselves (avoidant) (Brennan et al., 1998; Schimmenti et al., 2014). There are inconsistencies within the literature regarding the

distinct relationships between attachment avoidance and anxiety with primary vs secondary psychopathic traits. Some studies suggest that there are similarities in the pattern of results between primary and secondary psychopathic traits, highlighting attachment avoidance as a common risk factor (Conradi et al., 2016; Mack et al., 2011; Walsh et al., 2019). However, other studies have shown that attachment avoidance is exclusively associated with primary psychopathic traits (Christian et al., 2017; Kyranides & Neofytou, 2021), suggesting potential differences. The association between attachment anxiety and primary and secondary psychopathic traits, has also been disputed within the literature, with some studies proposing that secondary psychopathic traits are more commonly associated with attachment anxiety (Christian et al., 2017; Conradi et al., 2016; Kyranides & Neofytou, 2021). This provides an explanation to why secondary traits are associated with trait anxiety and violent behaviors (Goulter et al., 2023; Hofmann et al., 2021; Lyons, 2015b), as these factors are highly impacted by internalized attachment anxiety (McClure & Parmenter, 2020). However, attachment anxiety has also been associated with primary psychopathic traits (Mack et al., 2011), highlighting further inconsistencies within studies addressing attachment and psychopathic traits. The discrepancies in the findings for the specific relationship between anxious and avoidant attachment, and primary and secondary psychopathic traits may be due to differences in conceptualizations of psychopathy and attachment (Kyranides et al., 2023; Kyranides & Neofytou, 2021). Clarifying these relationships may help to address differences or similarities in the development of primary and secondary traits, therefore allowing a more in-depth understanding on the factors influencing these traits.

Shame

Shame is an intense, unpleasant emotion commonly associated with feelings of distress, exposure, and negative evaluations of the self (Prado et al., 2016). It is often felt in response to an event which is morally wrong or violates societal norms (Gilbert, 2003) and has been identified as a common risk factor for a number of maladaptive behavioral outcomes across the lifespan (Schlagintweit et al., 2017; Sommer et al., 2020). Researchers have assumed that individuals with psychopathic traits lacked the ability to feel shame, as they display shallow affect, lack empathy and show reduced remorse for their behaviors (Cleckley, 1951; Salekin et al., 2014). Unconscious shame drives maladaptive behaviours and offers explanations for a variety of traits and behaviors that have been identified as psychopathic (Gilligan, 1996). From this perspective the individual who acts without remorse justifies his/her behavior because they were threatened. It is important for research to address experiences of shame, as these differ from experiences of guilt (Prado et al., 2016). Researchers have proposed that some psychopathic behavioral traits, such as aggression, social dominance or grandiose self-worth, are used as coping strategies in response to a shame-evoking experiences in which the individual is attempting to protect their ego and sense of self, most likely at an unconscious level (Campbell & Elison, 2005; Gilbert, 2010; Ribeiro da Silva et al., 2021). It might be the case that when individuals experienced great levels of adverse experiences and shame they learned to suppress these emotions, helping them cope (Ribeiro da Silva et al., 2019, 2021), but these strategies become maladaptive as they were generalized and applied to all situations.

In addressing the link between shame and maladaptive behaviors, Shame Rage Theory (Lewis, 1971) argues that erratic, aggressive and violent behaviors stem from internalized maladaptive shame coping mechanisms. Empirical research addressing shame in relation to psychopathic traits has highlighted differences between primary and secondary psychopathic traits (Campbell & Elison, 2005; Lyons, 2015a; Prado et al., 2016) with secondary psychopathic traits being associated with higher experiences of shame (Gilligan, 1996; Morrison & Gilbert, 2001; Prado et al., 2016). From an attachment perspective, these findings support the existence of a developmental pathway, as a result of their early rearing environment, stemming from attachment anxiety in which an individual experiences pervasive shame, developing maladaptive coping mechanisms in the form of secondary psychopathic traits which are associated with more impulsive aggressive behavior (Del Gaizo & Falkenbach, 2008; Hare, 1996). Primary psychopathic traits, contrastingly, are not associated with experiences of shame (Gilligan, 1996; Prado et al., 2016), highlighting different etiologies (Karpman, 1941).

Most research addressing the relationship between shame and psychopathic traits view shame as a single construct (Campbell & Elison, 2005; Lyons, 2015a; Mossière et al., 2020; Prado et al., 2016). The current authors propose that addressing different domains of shame may provide further insight into differences between primary and secondary psychopathic traits. To date, there has been no research to the authors' knowledge examining the expression of multidimensional aspects of shame for example characterological (shame about the type of person you are), behavioral (shame regarding your behaviors) and body (shame about your physical appearance; Andrews et al., 2002) in individuals displaying primary and secondary psychopathic traits. Differences between characterological and behavioral shame in particular, may provide a better understanding of the underlying mechanisms associated with psychopathic traits, as individuals who experience behavioral shame try to rectify personal errors, whilst characterological shame is associated with attributing adverse experiences to evaluation of the self, believing one's antisocial traits and behaviors cannot be changed (Janoff-Bulman, 1979; Schoenleber & Berenbaum, 2012). Individuals reporting elevated levels of shame do what they can to diminish these uncomfortable feelings, and often rationalize their negative actions. Research on the association of shame and psychopathic traits is limited and so more research regarding the experience of multidimensional shame in individuals with primary and secondary psychopathic traits is needed, to enhance our understanding regarding the role of shame.

Current Study

The current study aimed to explore the associations between the anxious and avoidant attachment dimensions and characterological, behavioral and body shame with primary and secondary psychopathic traits. Based on the antisocial nature of the primary and secondary psychopathic profiles it was hypothesized that 1) attachment avoidance would be predominantly associated with primary psychopathic traits and 2) attachment anxiety and avoidance would be associated with secondary psychopathic traits. Based on previous findings showing that individuals with primary psychopathic traits experience less shame (Djeriouat & Trémolière, 2020; Gilligan, 1996; Prado et al., 2016),

and the link between shame and environmental factors (Morrison & Gilbert, 2001; Prado et al., 2016), it is expected that: 3) experiences of shame will be higher in individuals displaying secondary psychopathic traits and lower for individuals with primary psychopathic traits (Gilligan, 1996; Morrison & Gilbert, 2001; Prado et al., 2016).

Method

Participants

An initial sample of 299 participants, were recruited from online social media platforms, such as Facebook, Instagram and Twitter. Participants were asked to participate in this study if they were over the age of 18 and were fluent in English. Six participants were removed due to providing incomplete responses. The final sample consisted of 293 participants, aged between 18 and 72 years old ($M=30.77$, $SD=12.64$), 99 of which were male (34%). At the time the study was conducted the majority of participants (77.2%) were living in the United Kingdom, 16.5% were living in China, 1.8% in Switzerland, 1.5% in USA, 1.1% in Ireland and 1.9% in other countries.

Measures

Levenson Self-Report Psychopathy Scale (LSRP; Levenson et al., 1995)

The LSRP is a widely used self-report questionnaire containing 26-items measuring psychopathic traits. The scale has two sub-scales a) primary psychopathy, which is assessed with 16 items focusing on the interpersonal and affective traits ($\alpha = .86$), and b) secondary psychopathy, which is assessed with 10 items that focus on the impulsive and antisocial psychopathic traits ($\alpha = .71$). The items are scored using a 4-point Likert scale, ranging from 1 (disagree strongly) to 4 (agree strongly). The LSRP has shown good construct validity and acceptable reliability (Pseferska et al., 2020).

Experience in Close Relationships Revised (ECR-R; Fraley et al., 2000)

The ECR-R is a 36-item self-report scale measuring adult attachment styles in close relationships, including romantic relationships, using a 7-point Likert Scale from 1 (strongly disagree) to 7 (strongly agree). Two subscales are used which assess the individuals' representations of relationships in relation to attachment anxiety ($\alpha = .95$) and attachment avoidance ($\alpha = .91$). The ECR-R has good external validity within both the anxiety and avoidance subscales, in community samples (Conradi et al., 2006; Lopez & Gormley, 2002).

Experience of Shame Scale (ESS; Andrews et al., 2002)

The ESS contains 25 items that assess participants' experience of shame using a 4-point Likert scale from 1 (not at all) to 4 (very much). The ESS assesses three areas of shame: a) behavioral shame (doing something wrong, saying something stupid and failing in competitive situations) ($\alpha = .92$). It also assesses four subtypes of characterological shame (shame of personal habits, manner with others, personal ability and the type of person you are) ($\alpha = .94$). Lastly, it also assesses bodily shame ($\alpha = .93$).

The ESS has been found to have good test-retest reliability over 2–11 week periods ($r=0.83$ – 0.89) (Andrews et al., 2002; Vizin et al., 2016).

Procedure

The current research was granted ethical approval from the University of Edinburgh. Participants accessed the battery of questionnaires from their own devices *via* a link on online social media platforms, such as Facebook, Twitter and Instagram. This link took participants to Online Surveys, a secure online platform used for the development and distribution of the survey. Participants read the information sheet and gave informed consent before moving on to the battery of questionnaires which were displayed in the same order to all participants. The survey took approximately 25 min to complete. At the end of the survey participants were provided debriefing information and were thanked for their time.

Plan of Analysis

All analyses were conducted using IBM SPSS 25. Preliminary analyses included checking for missing data, outliers and normality of distribution. Demographic characteristics of participants were explored followed by independent t-tests to examine gender differences on primary and secondary psychopathic traits. Correlation analysis was run to explore the associations of the main variables. Hierarchical multiple regressions were conducted next, entering variables in the same order with primary and secondary psychopathic traits as the outcome variables. Demographic variables (age and gender) were entered first (step 1), while attachment variables (avoidance and anxiety) were entered next (step 2) followed by the different shame categories (characterological, behavioral and body) (step 3). The overlap in variance between predictors and the unique variance predicted by each predictor was assessed. A series of mediation analysis were applied to evaluate the indirect effect of attachment dimensions (avoidance and anxiety) on psychopathic traits (primary and secondary) through the different forms of shame (characterological, behavioral and body shame).

Results

Independent samples t-tests that were conducted to test for potential gender differences in primary and secondary psychopathic traits, showed that males displayed significantly higher primary psychopathic traits ($M=32.33$, $SD=7.92$), compared to females ($M=27.10$, $SD=7.05$), $t(291) = 5.76$, $p < .001$; with a large effect size (Cohen's $d = .71$) and this was also the case for secondary psychopathic traits with males reporting higher rates ($M=21.87$, $SD=5.17$) compared to females ($M=20.20$, $SD=4.25$), $t(291) = 2.96$, $p < .01$; with medium effect size (Cohen's $d = .37$). Correlational analysis (Table 1) showed that age showed a negative relationship with both primary and secondary psychopathic traits, so both gender and age were included in step 1 for both hierarchical regression analyses. Both primary and secondary psychopathic traits showed a positive correlation with attachment anxiety and avoidance dimensions, suggesting

Table 1. Means, Standard Deviations (SD) and Correlations Between Psychopathic Traits, Attachment and Shame Dimensions.

	Mean (SD)	1	2	3	4	5	6	7
1. LSRP primary psychopathic traits	28.96 (7.80)	–						
2. LSRP secondary psychopathic traits	20.77 (4.62)	.50**	–					
3. Age	30.77 (12.64)	–.43**	–.23**	–				
4. ECR-R attachment anxiety	60.62 (24.60)	.28**	.43**	–.34**	–			
5. ECR-R attachment avoidance	58.75 (19.73)	.33**	.39**	–.22**	.50**	–		
6. ESS characterological shame	27.30 (9.63)	.21**	.43**	–.28**	.46**	.29**	–	
7. ESS behavioral shame	23.12 (7.00)	.15*	.31**	–.27**	.37**	.14*	.68**	–
8. ESS body shame	10.68 (4.19)	–.07	.22**	–.24**	.34**	.04	.54**	.62**

Note. LSRP=Levenson's Self-Report Psychopathy Scale; ECR-R=Experience in Close Relationships Revised Questionnaire; ESS=Experience in Shame Scale.

* $p < .05$.

** $p < .01$.

that individuals with either elevated primary or second psychopathic traits reported elevated attachment anxiety and attachment avoidance scores. Additionally, a similar pattern of positive associations was found for characterological and behavioral shame with primary and secondary psychopathic traits, suggesting that individuals with high primary or secondary psychopathic traits also reported high scores on characterological and behavioral shame. In contrast a different pattern of findings was reported for body shame with a positive association reported secondary psychopathic traits, suggesting the individuals with elevated secondary traits reported higher scores on body shame also.

Hierarchical multiple regression analyses were then conducted to determine the degree to which demographic variables, attachment dimensions and shame categories uniquely added to the prediction of primary and secondary psychopathic traits, separately. Age and gender were entered in step 1 and accounted for a significant 28.2% of variance in primary psychopathic traits, $F(2, 287) = 56.06, p < .001$ and 7.3% of variance in secondary psychopathic traits $F(2, 287) = 11.200, p < .001$ (Table 2). Attachment dimensions (anxiety and avoidance) were entered in step 2 with the models accounting for 33.7% variance for primary psychopathic traits $F(4, 287) = 35.96, p < .001$ and 26.1% in secondary psychopathic traits $F(4, 287) = 25.44, p < .001$. From this overall variance, attachment dimensions explained 5.5% of the variance for primary psychopathic traits and 18.9% for secondary psychopathic traits and this additional variance was significant for both primary psychopathic traits, $F \text{ Change}(2, 283) = 11.66, p < .001$ and secondary psychopathic traits $F \text{ Change}(2, 283) = 36.12, p < .001$. The three shame dimensions (characterological, behavioral and body) were entered in step 3 with the models accounting for 37.1% variance for primary psychopathic traits, $F(7, 287) = 23.63, p < .001$, and 32.6% variance for secondary psychopathic traits, $F(7, 287) = 19.39, p < .001$. From this overall variance, shame categories explained 3.4% of the variance for primary psychopathic traits, $F \text{ Change}(3, 280) = 5.10, p < .01$, and 6.5% of the variance for secondary psychopathic traits, $F \text{ Change}(3, 280) = 9.01, p < .001$. Following from the above, age and gender explained the largest variance of

Table 2. Hierarchical Regression Analysis.

Variable	Primary psychopathic traits						Secondary psychopathic traits					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
		.28**		.06**		.03**		.07**		.19**		.07**
Age	-.43**		-.36**		-.36**		-.23**		-.08		-.03	
Gender ^a	-.31**		-.30**		-.25**		-.14*		-.13*		-.16**	
Attachment anxiety			.10		.10				.32**		.20**	
Attachment avoidance			.18*		.14*				.20**		.19**	
Characterological shame					.12						.25**	
Behavioral shame					.12						-.02	
Body shame					-.23**						.04	

Note. β = Standardized Beta Coefficient, ΔR^2 = adjusted R^2 .

^aGender Coded 1 = Male and 2 = Female.

* $p < .05$.

** $p < .001$.

primary psychopathic traits and the attachment dimensions explained the largest variance of secondary psychopathic traits. In the final models, for primary psychopathic traits (Table 2) age and gender arose as significant predictors suggesting that men and younger participants reported higher levels of primary psychopathic traits. Attachment avoidance was also a risk factor, while individuals with elevated primary traits were less like to report experiencing body shame. For secondary psychopathic traits gender arose as a significant predictor suggesting that men were more likely to report higher levels. Attachment avoidance and anxiety as well as characterological shame were identified as risk factors for secondary psychopathic traits.

A series of mediation analysis were conducted to evaluate the indirect effect of attachment dimensions (avoidance and anxiety) on psychopathic traits (primary and secondary) through the different forms of shame (characterological, behavioral and body shame). In models 1 and 2 primary psychopathic traits acted as the dependent variable (DV) while in models 3 and 4 secondary psychopathic traits acted as the DV. Attachment avoidance acted as the independent variable (IV) in models 1 and 3 and attachment anxiety acted as the IV for models 2 and 4. The different forms of shame acted as the mediators in all four models. In each mediation analysis, we controlled for the influence of age and sex. The four mediation analyses performed are presented in Table 3. Attachment avoidance and anxiety were found to be significantly predictive of both primary and secondary psychopathic traits, and characterological shame played a mediating role in this relationship in all four of the models. A significant indirect effect of attachment anxiety on primary psychopathic traits through body shame was also found. This means that people with increased attachment anxiety also report high characterological and high body shame that affect the presentation of primary psychopathic traits, but in different ways. Characterological shame was associated with high levels of primary traits while body shame was associated with low levels of primary traits, with primary traits being counteracted or suppressed by shame related to the physical appearance. Behavioral shame did not

act as a mediator for either attachment avoidance or attachment anxiety in predicting primary or secondary traits.

Discussion

The current study aimed to examine the differences between primary and secondary psychopathic traits with the attachment dimensions of avoidance and anxiety, as well as characterological, behavioral and body shame. The attachment dimensions (anxiety and avoidance) were both associated with primary and secondary psychopathic traits however they were more strongly associated with secondary traits compared to primary traits. The possible mechanism underlying the association between attachment (anxiety and avoidance) and psychopathic traits (primary and secondary) were investigated, examining the mediating role of different types of shame (characterological, behavioral and body shame). Characterological but not behavioral shame had indirect effect on both primary and secondary psychopathic traits. The present study highlights the importance of addressing psychopathic traits heterogeneously with regard to differences in attachment dimensions, whilst also presenting new findings regarding the specific categories of shame that have an indirect effect on primary and secondary psychopathic traits.

The current study provides clarity regarding the relationship between the attachment dimensions and primary vs. secondary psychopathic traits, as both dimensions (avoidance and anxiety) were found to be associated with secondary but not primary traits in the regression analysis. Demographic variables (age and gender) explained the largest variance in primary psychopathic traits, suggesting a greater influence of biological risk factors, whilst attachment dimensions explained the largest variance for secondary psychopathic traits. These findings support previous research (Brewer et al., 2018; Mack et al., 2011) and are consistent with the conceptualization that secondary psychopathic traits have a strong environmental influence, whilst primary psychopathic traits are derived predominantly from biological factors (Karpman, 1941; Pasalich et al., 2012). The impulsive and behavioral aspects of secondary psychopathic traits have been associated with fear of rejection and abandonment within close relationships (Conradi et al., 2016; Velotti et al., 2014) both of which are markers of attachment anxiety (Bowlby, 1973; Sroufe, 2005). Furthermore, secondary psychopathic traits are associated with trait anxiety and negative views of the self (Hong et al., 2016), which are believed to stem from internalized attachment anxiety (Sroufe et al., 2005). As expected, attachment avoidance was associated with both primary and secondary psychopathic traits (Blanchard & Lyons, 2016; Brewer et al., 2018; Kyranides et al., 2023; Kyranides & Neofytou, 2021; Mack et al., 2011). These relationships provide insight into why individuals with primary and secondary psychopathic traits may struggle to form and maintain meaningful relationships (Hare, 1996; Hare & Neumann, 2008; Mooney et al., 2019).

The current study additionally examined the mediating role of shame on the association between attachment dimensions (anxiety and avoidance) and primary vs secondary psychopathic traits. The findings suggest that characterological shame had an indirect effect on both primary and secondary psychopathic traits. This might indicate

that attachment avoidance and anxiety are likely to increase characterological shame and this in turn could lead to maintaining primary and secondary psychopathic traits. When an individual experiences characterological shame, they attribute information about adverse situations to characterological deficits (Schoenleber & Berenbaum, 2012), therefore contributing to negative views of the self and beliefs that their behaviors triggered by shame cannot be changed (Janoff-Bulman, 1979; Schoenleber & Berenbaum, 2012). These characteristics of characterological shame provide a possible explanation as to why individuals with psychopathic traits display antisocial behaviors, as their shame is not directly related to the behavior itself (behavioral shame) but instead is originating from a fixed internal driver that manifests through antisocial behaviors (characterological shame). As argued by Shame Rage Theory (Lewis, 1971), aggressive behaviors are maladaptive shame regulation strategies that are a result of internalized hyperactivation responses to emotional triggers. As characterological shame triggers are carried around internally, an individual's need to regulate feelings of shame may occur at any given time (Schoenleber & Berenbaum, 2012). Maladaptive shame

Table 3. Direct and Indirect Effects of Attachment Dimensions (Avoidance, Anxiety) on Psychopathic Traits (Primary and Secondary) with Shame Dimensions (Characterological, Behavioral and Body) as Mediators, Controlling for Age and Biological Sex.

1. Independent variable (IV): Attachment avoidance dependent variable (DV): Primary psychopathic traits				
	<i>b</i>	SE	<i>t</i>	<i>p</i>
Age (control variable)	-.23	.03	-7.77	<.001
Sex (control variable)	-4.71	.79	-5.93	<.001
Attachment avoidance to characterological shame (path <i>a1</i>)	.12	.03	4.53	<.001
Attachment avoidance to behavioral shame (path <i>a2</i>)	.04	.02	1.88	.06
Attachment avoidance to body shame (path <i>a3</i>)	.00	.01	.30	.77
Characterological shame to primary psychopathic traits (path <i>b1</i>)	.11	.06	1.90	.06
Behavioral shame to primary psychopathic traits (path <i>b2</i>)	.13	.08	1.72	.09
Body shame to primary psychopathic traits (path <i>b3</i>)	-.40	.12	-3.38	<.001
Total effect of attachment avoidance (path <i>c</i>)	.09	.02	4.52	<.001
Direct effect attachment avoidance (path <i>c'</i>)	.07	.02	3.57	<.001
<i>F</i> (3,284) = 46.76; <i>R</i> ² = .33; <i>p</i> < .001				
Bootstrap results for indirect effects				
	Effect	SE	Lower CI	Upper CI
Characterological shame	.01	.01	.00	.03
Behavioral shame	.01	.00	-.00	.02
Body shame	-.00	.01	-.01	.01
2. Independent variable (IV): Attachment anxiety dependent variable (DV): Primary psychopathic traits				
	<i>b</i>	SE	<i>t</i>	<i>p</i>
Age (control variable)	-.22	.03	-6.99	<.001
Sex (control variable)	-5.08	.80	-6.34	<.001
Attachment anxiety to characterological shame (path <i>a1</i>)	.16	.02	7.27	<.001
Attachment anxiety to behavioral shame (path <i>a2</i>)	.09	.02	5.36	<.001
Attachment anxiety to body shame (path <i>a3</i>)	.05	.01	4.86	<.001
Characterological shame to primary psychopathic traits (path <i>b1</i>)	.12	.06	2.06	.04
Behavioral shame to primary psychopathic traits (path <i>b2</i>)	.12	.08	1.51	.13
Body shame to primary psychopathic traits (path <i>b3</i>)	-.47	.12	-4.02	<.001
Total effect of attachment anxiety (path <i>c</i>)	.06	.02	3.63	<.001
Direct effect attachment anxiety (path <i>c'</i>)	.05	.02	3.05	.002
<i>F</i> (3,284) = 43.38; <i>R</i> ² = .31; <i>p</i> < .001				
Bootstrap results for indirect effects				
	Effect	SE	Lower CI	Upper CI
Characterological shame	.02	.01	.00	.04
Behavioral shame	.01	.01	-.00	.03
Body shame	-.02	.01	-.04	-.01

(Continued)

Table 3. Continued.

3. Independent variable (IV): Attachment avoidance dependent variable (DV): Secondary psychopathic traits				
	<i>b</i>	SE	<i>t</i>	<i>p</i>
Age (control variable)	-.06	.02	-2.88	.004
Sex (control variable)	-1.05	.52	-2.03	.043
Attachment avoidance to characterological shame (path <i>a1</i>)	.12	.03	4.54	<.001
Attachment avoidance to behavioral shame (path <i>a2</i>)	.04	.02	1.88	.06
Attachment avoidance to body shame (path <i>a3</i>)	.00	.01	.30	.77
Characterological shame to secondary psychopathic traits (path <i>b1</i>)	.14	.03	3.95	<.001
Behavioral shame to secondary psychopathic traits (path <i>b2</i>)	.02	.05	.44	.66
Body shame to secondary psychopathic traits (path <i>b3</i>)	.08	.07	1.11	.27
Total effect of attachment avoidance (path <i>c</i>)	.08	.01	6.49	<.001
Direct effect attachment avoidance (path <i>c'</i>)	.06	.01	5.17	<.001
	<i>F</i> (3,284) = 22.58; <i>R</i> ² = .19; <i>p</i> < .001			
Bootstrap results for indirect effects				
	Effect	SE	Lower CI	Upper CI
Characterological shame	.02	.01	.01	.03
Behavioral shame	.00	.00	-.00	.01
Body shame	.00	.00	-.00	.00
4. Independent variable (IV): Attachment anxiety dependent variable (DV): Secondary psychopathic traits				
	<i>b</i>	SE	<i>t</i>	<i>p</i>
Age (control variable)	-.03	.02	-1.50	.14
Sex (control variable)	-1.42	.51	-2.83	.005
Attachment anxiety to characterological shame (path <i>a1</i>)	.16	.02	7.27	<.001
Attachment anxiety to behavioral shame (path <i>a2</i>)	.09	.02	5.36	<.001
Attachment anxiety to body shame (path <i>a3</i>)	.05	.01	4.86	<.001
Characterological shame to secondary psychopathic traits (path <i>b1</i>)	.14	.03	4.01	<.001
Behavioral shame to secondary psychopathic traits (path <i>b2</i>)	.01	.05	.13	.89
Body shame to secondary psychopathic traits (path <i>b3</i>)	.01	.07	.10	.92
Total effect of attachment anxiety (path <i>c</i>)	.08	.01	7.69	<.001
Direct effect attachment anxiety (path <i>c'</i>)	.06	.01	5.22	<.001
	<i>F</i> (3,284) = 28.72; <i>R</i> ² = .23; <i>p</i> < .001			
Bootstrap results for indirect effects				
	Effect	SE	Lower CI	Upper CI
Characterological shame	.02	.01	.01	.03
Behavioral shame	.00	.00	-.01	.01
Body shame	.00	.00	-.01	.01

regulation strategies derived from attachment anxiety and avoidance may present as the aggressive, reactive characteristics of secondary psychopathic traits. Whereas with primary psychopathic traits, there may be an alternative shame regulation strategy that is influenced by the attachment system (avoidance; Kyranides & Neofytou, 2021), in which an individual ignores or suppresses shame and blames others for their behaviors (Campbell & Elison, 2005; Garofalo & Velotti, 2021; Kyranides & Neofytou, 2021). Campbell and Elison (2005), for example, found a relationship between primary psychopathic traits and the coping styles 'shame avoidance' and 'blaming others', whilst secondary traits were related to 'attacking the self'. It might be the case that shame became so overwhelming at some point during development that the emotion was pushed outside of the persons awareness (Heinze, 2017) possibly explaining the differences between individuals with primary and secondary psychopathic traits. Although characterological shame is present for both individuals with primary and secondary psychopathic traits, the behavioral expression of that shame is different.

In this study feelings of shame related to physical appearance had a small indirect effect on primary psychopathic traits but not secondary. Elevated levels of attachment anxiety were associated to elevated levels of body shame, however elevated levels of

shame related to physical appearance were associated with lower levels of primary psychopathic traits, suggesting that body shame buffers against the presentation of primary traits. Individuals higher in attachment anxiety have been shown to be more likely to have poorer appreciation of their body image (Iannantuono & Tylka, 2012; Raque-Bogdan et al., 2016), which may be explained by the development of a negative self-concept. The fact that body shame acted as a buffering factor against primary traits is an interesting finding, given that individuals with primary traits are more likely to report higher self-esteem, lower anxiety and view themselves as superior to others (Alzeer et al., 2019; Falkenbach et al., 2014; Morrison & Gilbert, 2001) and so they may be less ashamed about their body-image given the expression of these personality characteristics.

Implications

The current findings suggest that the attachment dimensions of anxiety and avoidance both contribute to the display of primary and secondary psychopathic traits (Kyranides et al., 2023) but have more of an influence for secondary traits. Attachment-based interventions (Hughes et al., 2015; Treisman, 2016) may therefore be uniquely beneficial for individuals with psychopathic traits with a focus on addressing maladaptive cognitions and behaviors deriving from attachment anxiety and avoidance. Furthermore, within current interventions for psychopathic traits it is clear that targeting individuals early in life, ideally in childhood, can reduce the risk of these traits becoming stable and more resistant to change (Kyranides et al., 2018, 2023; McDonald et al., 2011).

Although adult attachment avoidance and anxiety are clearly related to psychopathic traits, the mechanisms maintaining the display of these psychopathic traits are poorly understood. Early experiences that help form these attachments are structured in interpersonal schemas that are not always accessible during interventions. The identification of variables that are easier to target in therapy are important and in this study we found that characterological shame mediates the effect of attachment on psychopathic traits. Experiences of characterological shame provide insight into the maladaptive cognitions that may contribute to how psychopathic traits are developed and maintained across the lifespan (Heinze, 2017). Although characterological shame is associated with beliefs that maladaptive behaviors cannot change (Janoff-Bulman, 1979), shame is malleable (Goffnett et al., 2020), and it is therefore targeted within a variety of common evidence-based interventions (Goffnett et al., 2020; Spragg & Cahill, 2015). Therapies that directly target maladaptive experiences of shame, such as cognitive behavioral therapy and dyadic developmental psychotherapy, are particularly successful at reducing shame across multiple psychological contexts (Goffnett et al., 2020; Hughes, 2017; Spragg & Cahill, 2015). Utilizing interventions that aim to address the cognitions surrounding shame, particularly in early life when individuals are more vulnerable to internalizing characterological shame (Misailidi, 2020), may therefore reduce the maladaptive behaviors derived from shame, subsequently reducing the risk of presenting psychopathic traits. Furthermore, promoting adaptive shame coping strategies within interventions can help to reduce the impact of characterological shame on the individual and those around them.

Limitations and Future Research

This is the first study to the authors' knowledge that addresses the relationship between different forms of shame with primary and secondary psychopathic traits, however the generalizability of the current results is limited to the characteristics of the current sample, warranting the need for further research using clinical populations. Secondly, given the cross-sectional design of this study, longitudinal research addressing these variables over time would help better understand the relationship between the variables. Thirdly, the exclusive use of self-report measures within this study should be addressed by future work that will include alternative forms of assessment (e.g., clinical interviews) especially with reference to shame that can be unconscious.

Conclusion

The current research examined the relationship between attachment and sub-factors of shame on the expression of primary and secondary psychopathic traits. Similarities emerged with attachment avoidance and anxiety being associated with both primary and secondary psychopathic traits. Characterological shame was highlighted as a mediating factor for both primary and secondary traits suggesting that unconscious or unacknowledged shame could be sustaining these maladaptive traits. This study advocates that attachment-based interventions that also incorporate sessions that reduce experiences of characterological shame would help reduce the negative impact of psychopathic traits. Such intervention strategies should be introduced early on when attachment and shame are originally internalized, particularly in individuals who have been exposed to childhood adversities. Promoting adaptive shame coping strategies is also advocated as being crucial in reducing the negative impact of psychopathic traits on the individual and to the community around them.

Authors' Contributions

First author presented idea and supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

Availability of Data and Material

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request. When collecting the data participants were informed that their data would not be made publicly available.

Consent to Participate

Informed consent was obtained from all individual participants included in the study.

Disclosure Statement

Authors have no conflicts of interest to disclose.

Ethical Approval

All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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