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Perceptions of Past Parenting and Adult Attachment as Vulnerability Factors for Suicidal Ideation in the Context of the Integrated Motivational–Volitional Model of Suicidal Behavior

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Objective: We aimed to investigate whether perceptions of past parenting and current attachment orientations are associated with key components of the Integrated Motivational–Volitional (IMV) Model of Suicidal Behavior. We investigated the relationship between perceptions of past parenting, attachment, suicide ideation, defeat, entrapment, coping, and resilience.
Method: A total of 730 adult participants responded to an online questionnaire comprised of psychological measures. An initial regression analysis indicated that memories of past parenting and attachment were associated with suicide ideation. Four mediation models were tested based on the IMV model, all controlling for depressive symptoms.
Results: In the first model, attachment orientations mediated the relationships between perceptions of past parenting dimensions and defeat. In the second, defeat mediated the relationships between attachment orientations and entrapment. In the third, entrapment mediated the relationship between defeat and suicidal ideation, but coping did not moderate the defeat–entrapment relationship. In the final model, entrapment mediated the relationship between defeat and suicide ideation, with resilience moderating this relationship.
Conclusions: The findings are novel and congruent with the core principles of the IMV model. Clinical implications suggest the protective effect of resilience and strengthening of self-compassion attitudes to reduce the effect of insecure attachment strategies.

INTRODUCTION

The etiology of suicidal behavior remains poorly understood. As a complex phenomenon, biological, psychological, and social factors play a role in the emergence of suicidal ideation and behavior (Van Heeringen et al., 2000), but one of the challenges is to understand how these factors interact to determine suicide risk. Psychological models of suicidal behavior are essential in this enterprise. Several theoretical representations have

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endeavored to explain the etiology of suicide risk (O'Connor & Nock, 2014), but Adam (1994) was the first author to construct a developmental model of suicidal behavior focusing on attachment (Bowlby, 1982, 1973) as a central mechanism. Adam's (1994) model posits that early attachment experiences may convey vulnerability for suicidal behavior through their effects on the internal working models of the self and significant others. These internal representations are thought to be associated with personality difficulties involving emotion regulation, the sense of self-worth, and the capacity to nurture and sustain relationships, which are key to understanding vulnerability or resilience to later attachment distress. The exposure to adverse or adequate parenting, as proposed by Bowlby (1982, 1973), is a fundamental element of the development of a child's sense of attachment, which tends to remain stable over time and has significant long-term effects. In the absence of effective coping strategies, Adam (1994) suggested that a severe suicidal crisis could be usefully conceptualized as an acute "attachment crisis" that takes both its form and function from the childhood separation response. Adam's (1994) model focuses on the developmental aspects of the psychological vulnerability for suicide risk rather than explaining the transition from suicidal ideation to attempting suicide/dying by suicide. However, the Integrated Motivational–Volitional (IMV) Model of Suicidal Behavior (O'Connor, 2011; O'Connor et al., 2016; O'Connor & Kirtley, 2018), a contemporary model of suicidal behavior, addresses this gap (Figure 1).

The IMV model is a three-phase (premotivational, motivational, and volitional) diathesis–stress model that aims to understand how suicidal ideation emerges and the factors that increase the likelihood that ideation is translated into a suicide attempt. The IMV model expands the cry of pain hypothesis (O'Connor, 2003; Williams, 1997) by depicting a comprehensive pathway from defeat/humiliation to entrapment and from suicidal ideation to suicide attempts. Briefly, the premotivational phase of the IMV model includes the background setting (e.g., vulnerabilities, deprivation, negative life events) in which suicidal ideation is formed. Thereafter, the motivational phase delineates the elements that lead to the formation of suicidal ideation and intention, identifying moderating factors that enable the transition from defeat to entrapment and from entrapment to suicidal ideation and intention. The final part is the volitional phase where the variables that increase or decrease the likelihood of a suicide attempt are highlighted. These volitional moderators include impulsivity, access to lethal means, planning, exposure to suicide, impulsivity, physical pain sensitivity, fearlessness about death, imagery, and previous suicide attempts. There is increasing evidence for the paths and processes outlined in the IMV model (Dhingra et al., 2015; Forkmann et al., 2018; O'Connor, 2003; O'Connor & Portzky, 2018; O'Connor et al., 2013; Rasmussen et al., 2010; Taylor et al., 2011; Wetherall et al., 2018).

The processes described by the IMV model involving the emergence of suicidal ideation and its transition to a suicide attempt happen in those who, by definition, are vulnerable (O'Connor, 2011). Therefore, the investigation of diathesis (vulnerability) factors is a fundamental step to understanding and preventing the emergence of suicidal thinking. There is growing evidence supporting the hypothesis that insecure orientations of attachment relationships may be a vulnerability factor for suicidal ideation and behavior (e.g., Aaltonen et al., 2016; Adam et al., 1996; Fergusson et al., 2000; Grunebaum et al., 2010; Levi-Belz et al., 2013; Lizardi et al., 2011; Sheftall et al., 2014; Stepp et al., 2008; Yaseen et al., 2014). Insecure attachment orientations are defined as strategies to manage distress when attachment figures (intimate others) are not present or not open and receptive when individuals are threatened by fearful or anxiety-provoking events. These strategies may be avoidant, where the individual is less invested in their relationships and strives to remain psychologically and emotionally independent and distant from others; or anxious, where the person is highly invested in their

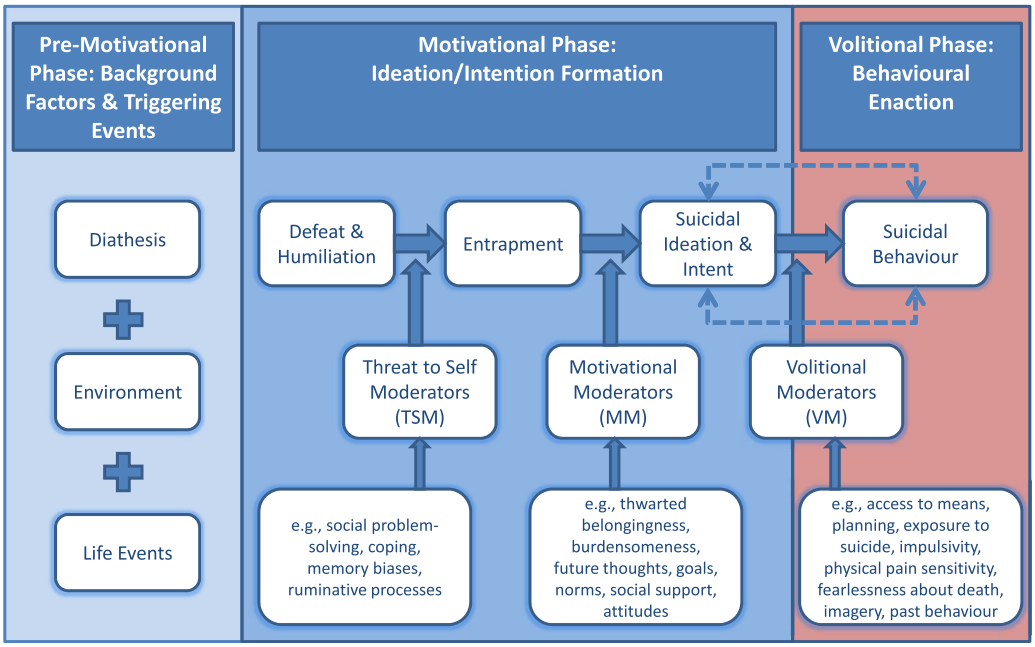

Figure 1. The Integrated Motivational–Volitional Model of Suicidal Behavior (O'Connor, 2011; O'Connor & Kirtley, 2018). [Color figure can be viewed at wileyonlinelibrary.com]

relationships, worrying about being underappreciated and possibly abandoned (Simpson & Rholes, 2012). These insecure strategies are said to be selected during childhood, with negative experiences of bonding with parents (e.g., parental overcontrol, carelessness).

The present study aimed to examine the theoretical propositions posited by both Adam's (1994) and O'Connor's (2011) models. Specifically, we investigated whether memories of negative bonding with parents during the first 16 years of life and current insecure dimensions of the attachment system (anxious and avoidant) would act as vulnerability factors for suicidal ideation (Adam, 1994) in the context of the IMV model (O'Connor, 2011), hence as premotivational variables. Additionally, we investigated some of the mediation derived from the IMV model: coping strategies acting as a threat-to-self moderator (moderating the transition from defeat to entrapment), and resilience working as a motivational moderator (moderating the transition from entrapment to suicidal ideation). It is hypothesized that coping strategies and resilience would mitigate the escalation to suicide risk. Specifically, we tested five hypotheses:

H1: Perceptions of past parenting and attachment would be associated with suicidal ideation.

H2: Attachment would mediate the relationship between perceptions of past parenting and defeat (Panel a, Figure 2).

H3: Defeat would mediate the relationship between attachment and entrapment (Panel b, Figure 2).

H4: Entrapment would mediate the relationship between defeat and suicidal ideation, with coping moderating the defeat–entrapment relationship (Panel c, Figure 2).

H5: Entrapment would mediate the relationship between defeat and suicidal ideation, with resilience moderating the entrapment–suicidal ideation relationship (Panel d, Figure 2).

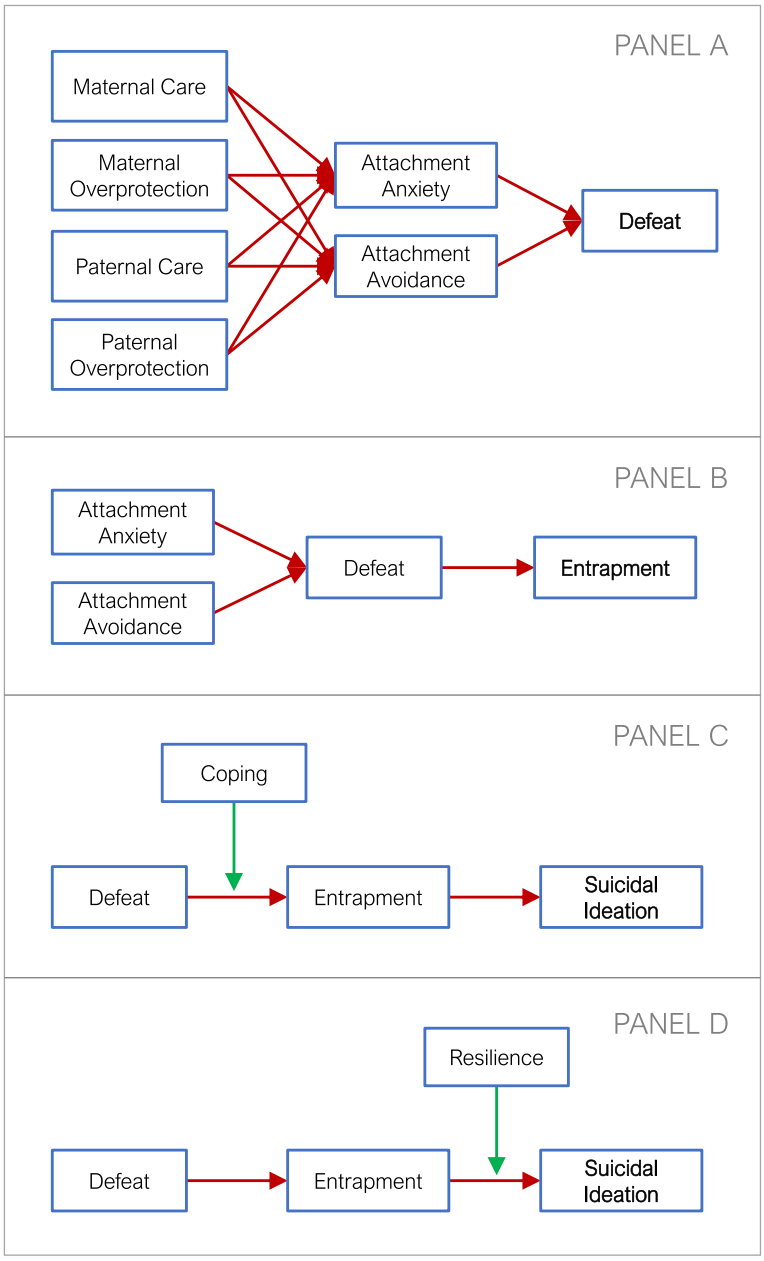

Figure 2. Models of multimediation (Panel A), simple mediation (Panel B), and moderated mediation (Panels C and D) tested from Hypotheses 2–5, adjusted for depressive symptoms. [Color figure can be viewed at wileyonlinelibrary.com]

METHOD

Participants

The total sample was comprised of 730 participants, mostly female (76.2%; N = 551/ Male = 23.6%; N = 172), White (84.2%; N = 608), heterosexual (82.1%; N = 598), single (86.3%; N = 628), and having a university degree (42.6%; N = 311) or postgraduate qualification (21.9%; N = 158). The age range was 18 to 66 years (M = 25.08 years, SD = 8.4 years). Approximately 40% (N = 284) reported having experienced

suicidal thoughts at some point in their lives, 8.2% ($N = 60$) within the past week, and 13.2% ($N = 96$) within the last year. 14% ($N = 102$) reported to be taking antidepressants or anxiolytics, and 27.2% ($N = 198$) have received a psychiatric diagnosis.

Procedure

The current study employed a cross-sectional design, and the data were collected through an online questionnaire between February and May 2016. Online data collection was chosen due to its advantages over paper-and-pencil procedures, including the reduced response time, lower cost, flexibility of and control over data format, and ease of data entry, and importantly because it increases participants' self-disclosure (Granello & Wheaton, 2004; Joinson, 1999). As the main analyses employed multiple linear regression, a priori power calculations showed that a sample size of 172 (allowing for 10 predictor variables) could detect a medium effect size ($f^2 = 0.15$), given $\alpha = 0.05$ and power = 0.95. Participants were recruited from the general population through social media and public advertisement Web sites and from the College of Medical, Veterinary and Life Sciences (MVLS) at the University of Glasgow via e-mail. The study was advertised as being about family relationships, stress, and well-being, and those who took part were entered into a prize draw to win an iPad Mini or a £200 high-street shopping voucher. Ethical approval was granted by the MVLS research ethics committee (Application No. 200150063). Given the sensitive nature of some of questions, all participants were provided with a support sheet providing the contact details of mental health organizations prior to, during, and at the end of the study.

Measures

Suicidal Ideation. The Suicide Probability Scale–Suicide Ideation Subscale (Cull & Gill, 1988) was used to assess current suicidal ideation. This subscale has eight items that depict current specific feelings and thoughts (e.g., "I think of suicide"), with the participant indicating the frequency that each statement applies to them on a 4-point scale ("None or a little of the time" to "All of the time"). The suicide ideation subscale of the SPS has good validity (Cull & Gill, 1988), and in this study, it demonstrated high internal consistency ($\omega = 0.897$, $SE = 0.008$, CI = 0.881–0.914, $N = 728$).

Defeat. The Defeat Scale is a 16-item self-report instrument (Gilbert & Allan, 1998) designed to capture perceptions of failed struggles and loss of social standing in the past seven days. Respondents indicate on a 5-point Likert-type scale (from "Never" to "Always") the degree to which the sentences represent their thoughts and feelings over the past 7 days (e.g., "I feel defeated by life"). This scale has been widely used (e.g., Owen et al., 2017), and in this study, it displayed high reliability ($\omega = 0.921$, $SE = 0.004$, CI = 0.912–0.931, $N = 699$).

Entrapment. The Entrapment Scale (ES; Gilbert & Allan, 1998) evaluates how trapped a respondent feels by their current situation. This instrument contains 16 self-report items (e.g., "I am in a relationship that I can't get out of"). Respondents indicate on a 5-point rating scale how much each statement represents them (from "Not at all like me" to "Extremely like me"). This measure has been commonly used within suicide and self-harm research (Dhingra et al., 2016; Hochard et al., 2017; Wetherall et al., 2018) and displayed high internal reliability in the current study ($\omega = 0.961$, $SE = 0.002$, CI = 0.957–0.966, $N = 700$).

Resilience. The Connor–Davidson Resilience Scale (Campbell-Sills & Stein, 2007) is a brief, self-rated measure of resilience consisting of 10 items on a 5-point Likert-type scale (e.g., "I can stay focused under pressure"). The total score ranges from 0 to 40, with higher scores indicating greater resilience. This instrument has also been used in suicide research (e.g., Smith et al., 2016) and, in the present study, was shown to have high reliability ($\omega = 0.894$, $SE = 0.006$, CI = 0.882–0.906, $N = 716$).

Coping Strategies. The Brief COPE Inventory (BCI; Carver, 1997) is a 28-item

self-report questionnaire that assesses 14 dimensions (subscales) of current coping. For the present study, we reduced the number of subscales by conducting an exploratory factor analysis and a confirmatory factor analysis (see Appendix S1). This yielded three factors labeled *Problem-focused coping* (ω = 0.86, *SE* = 0.012, CI = 0.843–0.832), *Social support seeking* (ω = 0.88, *SE* = 0.010, CI = 0.867–0.907), and *Maladaptive coping* (ω = 0.77, *SE* = 0.018 CI = 0.737–0.808). The subscales are comprised of 4-point Likert-type scale ranging from 1 ("I've not done this at all") to 4 ("I've been doing this a lot") (*N* = 680). This measure has been used in suicide and self-harm research (e.g., Horgan & Martin, 2016; Poindexter et al., 2015).

Depressive Symptoms. The Patient Health Questionnaire (Cameron et al., 2008) is the depression module of the PRIME-MD (Diagnostic Instrument for Common Mental Disorders), which scores each of the nine DSM-IV criteria as 0 ("not at all") to 3 ("nearly every day") (e.g., "Feeling down, depressed, or hopeless") over the past two weeks. This scale is widely used in mental health research (Kroenke et al., 2001) and, in this study, showed high internal consistency (ω = 0.916, *SE* = 0.004, CI = 0.907 to 0.925, *N* = 724).

Perceptions of Past Parenting. The Parental Bonding Instrument (PBI; Parker et al., 1979) is a 25-item self-report questionnaire that measures individuals' recall of their parental bonding during the first 16 years of life. These perceptions are measured via two dimensions: care and overprotection for each carer (mother or maternal figure and father of paternal figure: e.g., "Spoke to me in a warm and friendly voice" and "Tried to control everything I did"). This measure has indicated long-term stability of the PBI over time (20 years; Wilhelm et al., 2005). It showed high internal consistency for both dimensions of the mother (*N* = 727): care (ω = 0.933, *SE* = 0.004, CI = 0.925–0.942) and overprotection (ω = 0.876; *SE* = 0.007, CI = 0.862–0.890); and the father subscales (*N* = 690): care (ω = 0.908, *SE* = 0.005, CI = 0.897–0.919) and overprotection (ω = 0.884, *SE* = 0.007, CI = 0.869–0.899).

Adult Attachment. The Relationship Styles Questionnaire (Griffin & Bartholomew, 1994) is a 30-item self-report questionnaire that assesses four dimensions of general adult attachment (secure style, preoccupied/anxious, dismissing avoidance, and fearful avoidance), and evaluates participant's levels of attachment anxiety (model of self) and avoidant attachment (model of others). Its items are rated on a 5-point scale (from 1 = "Not at all like me" to 5 = "Very much like me") (e.g., "I find it difficult to depend on other people" and "I am comfortable having other people depend on me"). This measure has been used to assess different models/dimensions of adult attachment (Andersen et al., 2017; Roisman et al., 2007). For the present study (*N* = 717), we assessed dimensions of attachment anxiety (ω = 0.859, *SE* = 0.008, CI = 0.842–0.876) and attachment avoidance (ω = 0.813, *SE* = 0.011, CI = 0.791–0.836).

Statistical Analysis

Missing Data. All variables had some missing data. Of the 730 participants, 13.29% (*N* = 97) missed at least one variable, and the data set had a total of 1.88% missing data. For variables where the data were missing completely at random (MCAR), expectation Maximization (EM) was imputed (Garson, 2015), and for variables which were missing at random (MAR), multiple imputation techniques were employed (Sterne et al., 2009). The missing data imputation was conducted at the item level. Therefore, participants who missed out a whole scale (e.g., father or mother scales of PBI because individuals did not have a relationship with one of their parents in childhood) were not included in the missing data imputation analysis, nor in the final analysis through listwise deletion. Table S1 summarizes the missing data analysis for each variable.

Correlations, Linear Regression, Mediation, and Moderation. First, we conducted correlation analyses to verify the associations between the study variables. Subsequently, we used linear regression analysis to test the

hypothesis that perceptions of past parenting (low parental care and high overprotection) and attachment (high levels of either anxious or avoidant) were associated with suicidal ideation, and also to test the direct effects of Hypotheses 2–5; that is, all predictor variables were associated with the outcome variables before accounting for mediators or moderators. Depressive symptoms were adjusted for in all regressions. The subsequent hypotheses were comprised of mediation and moderation models. Briefly, mediation analysis is used to test hypotheses about how a predictor may transmit their effect on an outcome variable, informing potential mechanistic effects. Therefore, a mediator is a variable that explains the relationship between two other variables. On the other hand, moderation analysis is a statistical technique employed to test whether the strength and/or direction of the relationship between a predictor and an outcome variable is affected by a third variable (moderator; Hayes, 2013).

To examine each hypothesis, four models were tested (Figure 2) using Hayes' (2013) PROCESS macro for SPSS. The PROCESS macro uses regressions to test models of moderation and mediation, and bootstrapping techniques to estimate the confidence intervals, as these generate inferences that are more accurate and better reflect the irregularity of sampling design. All analyses used a minimum of 10,000 bootstraps (Hayes, 2013). The first model was a multimediation model testing levels of anxious and avoidant attachment as concurrent mediators of the relationship between perceptions of parental care and overprotection (for both mother and father) and defeat. The second model was a mediation model testing defeat as a mediator between anxious and avoidant attachment, and entrapment. The third model was a moderated-mediation model testing entrapment as a mediator of the defeat–suicide ideation relationship, and coping as a moderator of the defeat–entrapment relationship. The final model was a moderated-mediation model testing entrapment as a mediator of the defeat–suicide ideation relationship, and resilience as a moderator of entrapment–suicidal ideation. All analyses controlled for depressive symptoms.

Post hoc Analyses. We have also included structural equation modeling (SEM) analyses in the Supplementary Materials (Appendix S2) based on the feedback from one reviewer who suggested testing a comprehensive model that includes all variables in a single model. As outlined in the Appendix S2, this structural equation model did not achieve good fit (RMSEA = 0.229, 95% CI = 0.215–0.243; SRMR = 0.183; CFI = 0.708; TLI = 0.514).

RESULTS

Correlation Analysis

Pearson's r correlation analysis between the study variables is presented in Table 1, along with means and standard deviations. With exception of the coping subscales, all study variables were significantly associated with each other. The coping dimensions of "Social support seeking" and "Problem-focused" were excluded from the H4 moderated-mediation model (Figure 2, Panel C), as they were not associated with the hypothesized outcome variable (entrapment).

H1: Perceptions of past parenting and attachment would be associated with suicidal ideation

We conducted a linear regression analysis to test the first hypothesis. As outlined in Table 2, the four dimensions of perceptions of past parenting as well as the two attachment dimensions were significantly associated with suicidal ideation, after controlling for depressive symptoms (Table 2, Models 1.1–1.6).

H2: Attachment would mediate the relationship between perceptions of past parenting and defeat

A multimediation model was employed to test the second hypothesis, including

TABLE 1
Means, Standard Deviations, and Correlations (Two-Tailed Person's r*) of All Study Variables (*N = *730)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Maternal care	—													
2. Maternal overprotection	−0.428***	—												
3. Paternal care	0.399***	−0.239***	—											
4. Paternal overprotection	−0.280***	0.501***	−0.423***	—										
5. Attachment anxiety	−0.231***	0.219***	−0.296***	0.168***	—									
6. Attachment avoidance	−0.279***	0.132***	−0.245***	0.169***	0.461***	—								
7. Depression	−0.346***	0.246***	−0.331***	0.241***	0.446***	0.371***	—							
8. Suicidal ideation	−0.342***	0.234***	−0.341***	0.219***	0.386***	0.393***	0.651***	—						
9. Resilience	0.225***	−0.19***	0.279***	−0.198***	−0.292***	−0.258***	−0.503***	−0.409***	—					
10. Entrapment	−0.370***	0.256***	−0.368***	0.276***	0.486***	0.478***	0.765***	0.723***	−0.509***	—				
11. Defeat	−0.363***	0.282***	−0.39***	0.296***	0.494***	0.456***	0.772***	0.672***	−0.625***	0.838***	—			
12. Problem-focused coping	0.038	−0.011	−0.000	0.003	−0.001	−0.079*	−0.049	−0.078*	0.250***	−0.039	−0.111**	—		
13. Social support seeking	0.074	−0.095*	0.038	−0.048	−0.026	−0.169***	−0.030	−0.057	0.043	−0.068	−0.058	0.577***	—	
14. Maladaptive coping	−0.263***	0.230***	−0.281***	0.205***	0.451***	0.393***	0.657***	0.592***	−0.463***	0.714***	0.696***	0.069	0.100**	—
Means	27.26	12.61	22.91	10.46	2.81	2.61	9.59	3.19	25.88	17.16	20.77	2.46	2.27	1.69
Standard deviations	8.06	7.43	7.34	7.39	0.59	0.77	7.10	4.35	7.84	16.35	13.96	0.72	0.81	0.58

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

attachment anxiety and attachment avoidance simultaneously for each predictor (Figure 2, Panel a). A series of initial regression analyses testing the direct effect of the models indicated that before including the mediators, perceptions of high overprotection and low care from both parents during the participants' first 16 years of life were significantly associated with defeat (Table 2, Models 2.1–2.4). When testing the multimediation analysis, both attachment dimensions mediated the relationship between perceptions of past parents' care and defeat (Table 3, Models 5.1, 5.2, 5.4, and 5.5). The addition of attachment anxiety and attachment avoidance did not reduce the direct effect of parental care on defeat to nonsignificance (Table 3, Models 9.1 and 9.4), suggesting a partial multimediation. Findings were different for perceptions of overprotection. The relationship between perceptions of overprotection and defeat was only mediated by attachment anxiety for mothers (Table 3, Model 5.3) and by attachment avoidance for fathers (Table 3, Model 5.6).

H3: Defeat would mediate the relationship between attachment and entrapment

We tested whether defeat would mediate the relationship between each of the attachment dimensions separately (Figure 2, Panel b). Prior regression analyses suggested that both attachment anxiety and avoidance were associated with defeat (Table 2, Models 2.5 and 2.6) and with entrapment (Table 2, Models 3.1 and 3.2). The mediation models indicated that defeat mediated the relationship between attachment anxiety and entrapment (Table 3, Model 6.1) and the attachment avoidance–entrapment relationship (Table 3, Model 6.2). The inclusion of

TABLE 2
Linear Regression Analysis of the Direct Effects of Predicting Variables Over the Hypothesized Outcome Variables, All Controlling for Depressive Symptoms

Models of individual predictions	β	*t*	*p*	95% CI
1. Outcome: Suicidal ideation				
1.1. maternal care	−0.0710	−4.436	<.0001	−0.103, −0.040
1.2. Maternal overprotection	0.0460	2.683	.0070	0.012, 0.079
1.3. Paternal care	−0.0830	−4.639	<.0001	−0.119, −0.048
1.4. Paternal overprotection	0.0390	2.223	.0270	0.005, 0.073
1.5. Attachment anxiety	0.8740	3.791	<.0001	0.421, 1.326
1.6. Attachment avoidance	0.9920	5.884	<.0001	0.661, 1.323
1.7. Defeat	0.1300	9.858	<.0001	0.104, 0.156
1.8. Entrapment	0.1440	13.687	<.0001	0.124, 165
1.9. Resilience	−0.0610	−3.338	.0010	−0.096, −0.025
2. Outcome: Defeat				
2.1. Maternal care	−0.1890	−4.282	<.0001	−0.275, −0.102
2.2. Maternal Overprotection	0.1840	3.969	<.0001	0.093, 0.275
2.3. Paternal Care	−0.2860	−5.881	<.0001	−0.382, −0.191
2.4. Paternal overprotection	0.2210	4.649	<.0001	0.127, 314
2.5. Attachment anxiety	4.411	7.201	<.0001	3.208, 5.614
2.6. Attachment avoidance	3.565	7.900	<.0001	2.679, 4.451
3. Outcome: Entrapment				
3.1. Attachment anxiety	4.985	6.849	<.0001	3.556, 6.414
3.2. Attachment avoidance	4.778	9.056	<.0001	3.742, 5.814
3.3. Defeat	0.7160	19.986	<.0001	0.6450, 0.7860
3.4. Maladaptive coping	6.458	13.265	<.0001	5.502, 7.414

TABLE 3
Linear Regression Analysis of the Direct Effects of Predicting Variables Over the Hypothesized Outcome Variables, All Controlling for Depressive Symptoms

Associations of the models tested	β	*t*	*p*	95% CI
1. Panel A				
1.1. Maternal care → attachment Anxiety	−0.0064	−2.4221	.0157	−0.0117, −0.0012
1.2. Attachment anxiety → defeat	2.9498	4.6122	<.0001	1.6941, 4.2056
1.3. Maternal care → attachment avoidance	−0.0161	−4.5266	<.0001	−0.0231, −0.0092
1.4. Attachment avoidance → defeat	2.3815	4.9573	<.0001	1.4383, 3.3247
1.5. Maternal overprotect. → attachment anxiety	0.0095	3.4303	.0006	0.0040, 0.0149
1.6. Attachment anxiety → defeat	2.7527	4.2830	<.0001	1.4908, 4.0145
1.7. Maternal overprotect. → attachment avoidance	0.0046	1.2184	.2235	−0.0028, 0.0119
1.8. Attachment avoidance → defeat	2.5918	5.4661	<.0001	1.6608, 3.5227
1.9. Paternal care → attachment anxiety	−0.0137	−4.7118	<.0001	−.0194, −.0080
1.10. Attachment anxiety → defeat	2.6616	4.0951	<.0001	1.3854, 3.9378
1.11. Paternal care → attachment avoidance	−0.0147	−3.7122	.0002	−0.0224, −0.0069
1.12. Attachment avoidance → defeat	2.5435	5.3237	<.0001	1.6054, 3.4817
1.13. Paternal overprotect. → attachment anxiety	0.0056	0.0029	.0508	0.0000, 0.0112
1.14. Attachment anxiety → defeat	2.9650	4.5807	<.0001	1.6940, 4.2360
1.15. Paternal overprotect. → attach. Avoidance	0.0088	0.0039	.0226	0.0012, 0.0164
1.16. Attachment avoidance → defeat	2.6103	5.4461	<.0001	1.6691, 3.5514
2. Panel B				
2.1. Attachment anxiety → defeat	4.3080	6.9912	<.0001	3.0981, 5.5178
2.2. Defeat → entrapment	0.6877	18.6382	<.0001	0.6152, 0.7601
2.3. Attachment avoidance → defeat	3.4292	7.5389	<.0001	2.5361, 4.3223
2.4. Defeat → entrapment	0.6649	18.1396	<.0001	0.5929, 0.7368
3. Panel C				
3.1. Defeat → entrapment	0.7817	19.3538	<.0001	0.7024, 0.8610
3.2. Defeat × maladaptive coping → entrapment	0.0012	0.0314	.9750	−0.0766, 0.0790
3.3. Entrapment → suicidal ideation	0.1445	9.3256	<.0001	0.1141, 0.1749
4. Panel D				
4.1. Defeat → entrapment	0.7156	18.0863	<.0001	0.6379, 0.7933
4.2. Entrapment → suicidal ideation	0.1185	7.0352	<.0001	0.0854, 0.1516
4.3. Resilience × entrapment → suicidal ideation	−0.0028	−2.4031	.0165	−0.0052, −0.0005

Indirect effects of mediation	β	*SE*	Bootstrapped 95% CI (N)
5. Panel A			
5.1. Maternal care → attach. anxiety → defeat	−0.0190	0.0093	−0.0104, −0.0034 (*N* = 694)
5.2. Maternal care → attach. avoidance → defeat	−0.0384	0.0124	−0.0676, –0.0184 (*N* = 694)
5.3. Maternal overprotect. → attach. anxiety → defeat	0.0261	0.0105	0.0095, 0.0510 (*N* = 694)
5.4. Paternal care → attach. anxiety → defeat	−0.0365	0.0130	−0.0692, −0.0160 (*N* = 661)
5.5. Paternal care → attach. avoidance → defeat	−0.0373	0.0134	−0.0688, −0.0151 (*N* = 661)
5.6. Paternal overprotect. → attach. avoid. → defeat	0.0231	0.0118	0.0039, 0.0503 (*N* = 661)
6. Panel B			
6.1. Attachment anxiety → defeat → entrapment	2.9625	0.4875	2.0799, 0.9886 (*N* = 697)
6.2. Attachment avoidance → defeat → entrapment	2.2800	0.3613	1.6116, 3.0448 (*N* = 697)
7. Panel C			
7.1. Defeat → entrapment → suicidal ideation	0.0880	0.0120	0.0650, 0.1118 (*N* = 698)
8. Panel D			
8.1. Defeat → entrap. × resilience → suic. ideation	−0.0020	0.0008	−0.0037, −0.0004 (*N* = 690)

(continued)

TABLE 3
(continued)

Direct effects after the inclusion of the mediator	β	*t*	*p*	95% CI
9. Panel A				
9.1. Maternal care → defeat	–0.1266	–2.9667	.0031	−0.2104, −0.0428
9.3. Maternal overprotection → defeat	0.1492	3.3834	.0008	0.0626, 0.2358
9.4. Paternal care → defeat	−0.2169	−4.6605	<.0001	−0.3083, −0.1255
9.6. Paternal overprotection → defeat	0.1754	3.9241	.0001	0.0876l, 0.2632
10. Panel B				
10.1. Attach. anxiety → entrapment	1.8939	3.0563	.0023	0.6772, 3.1106
10.2. Attach. avoidance → entrapment	2.3437	5.1301	<.0001	1.4467, 3.2406
11. Panel C				
11.1. Defeat → suicidal ideation	0.0414	2.1506	.0319	0.0036, 0.0792
12. Panel D				
12.1. Defeat → suicidal ideation	0.0381	1.9459	.0521	−0.0003, 0.0765

defeat as a mediator did not reduce the attachment–entrapment relationship to a nonsignificant level (Table 3, Models 10.1 and 10.2), suggesting a partial mediation.

H4: Entrapment would mediate the relationship between defeat and suicidal ideation, with coping moderating the defeat–entrapment relationship

A mediated moderation model was employed to test this hypothesis (Figure 2, Panel c). A prior regression analysis confirmed the direct effect of this model, as higher levels of defeat were associated with higher scores of suicidal ideation (Table 2, Model 1.7). The analysis indicates that defeat was significantly associated with entrapment (Table 3, Model 3.1) and entrapment was associated with suicidal thinking (Table 3, Model 3.3). Entrapment mediated the relationship between defeat and suicidal ideation (Table 3, Model 7.1), but not reducing the defeat–suicidal ideation relationship to a nonsignificant level, suggesting a partial mediation (Table 3, Model 11.1). Contrary to our predictions, the interactions between defeat and maladaptive coping (Table 3, Model 3.2) did not moderate the relationship between defeat and entrapment in our sample, even though maladaptive coping seems to be positively associated with entrapment (Table 2, Model 3.4).

H5: Entrapment would mediate the relationship between defeat and suicidal ideation, with resilience moderating the entrapment–suicidal ideation relationship

A final mediated moderation model was used to test the fifth hypothesis of the study (Figure 2, Panel d). As the mediation analysis of the defeat–entrapment–suicidal ideation relationship has already been tested (see results description of H4 above), we further tested the presence of resilience as a moderator between entrapment and suicidal ideation, which was shown to be significant (Table 3, Model 4.3). The simple-slopes analysis (the relationship between entrapment and suicidal ideation at 1 *SD* below and above the mean of resilience) indicates that at low levels of resilience (β = 0.1008, *SE* = 0.0128, CI = 0.0771, 0.1270), higher levels of entrapment were associated with higher suicidal ideation scores. Conversely, high levels of resilience weakened the association between entrapment and suicidal ideation (β = 0.0688, *SE* = 0.0151, CI = 0.0396, 0.0988). As illustrated in Figure 3, it is when entrapment is high and resilience is low that suicidal ideation is at its highest. Concurrently, at higher levels of entrapment, participants who reported higher resilience showed lower levels of suicidal ideation than those who reported lower scores of resilience. The index of moderated mediation (β = −0.0020,

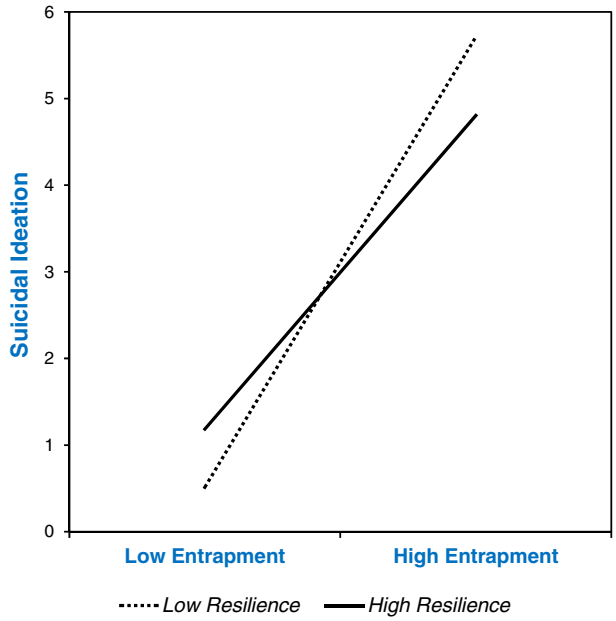

Figure 3. Moderation of resilience on the entrapment–suicidal ideation relationship. Low Resilience = Mean −1 standard deviation; High Resilience = Mean +1 standard deviation. Depressive symptoms are adjusted for. [Color figure can be viewed at wileyonlinelibrary.com]

SE = 0.0008, CI = –0.0037, –0.0004) did not include zero, suggesting evidence of a conditional relationship of the moderating variable (resilience) and the mediator (entrapment) when explaining part of the outcome's variance (suicidal ideation).

DISCUSSION

To our knowledge, this is the first study to investigate the relationship between perceptions of past parenting, attachment, and suicidal ideation from the viewpoint of the Integrated Motivational–Volitional Model of Suicidal Behavior (O'Connor, 2011; O'Connor & Kirtley, 2018). Our findings suggest that perceptions of past parenting and dimensions of attachment may be related to suicidal ideation via the core psychological variables of suicide risk proposed by the IMV model, that is, defeat and entrapment. Perceptions of past parenting and dimensions of insecure attachment may act as vulnerability factors, increasing the risk of suicidal ideation when triggered by distressing interpersonal events. As the diathesis–stress hypothesis embedded in the premotivational phase of the IMV model suggests, the impact of environmental adversities is more marked among those who are, by definition, vulnerable (O'Connor, 2011). Previous longitudinal research has shown some evidence of the impact that perceived parental behavior in early childhood can have later in life via insecure patterns of attachment (Fergusson et al., 2000; Salzinger et al., 2007). In contrast, assessing current perspectives of past parenting is particularly important as people's current beliefs and perceptions about their past are more likely to influence their present behavior.

As expected, perceptions of negative interactions with parents in the first 16 years of life were associated with higher levels of suicidal ideation, consistent with previous research findings (e.g., Donath et al., 2014; Heider et al., 2007; Saffer et al., 2015). Anxious and avoidant dimensions of attachment were also correlated with suicidal thinking as suggested by other studies (e.g., Aaltonen et al., 2016; Falgares et al., 2017; Park et al.,

2011). Although Nunes and Mota (2016) suggested that attachment would be the main mediator of the relationship between parenting and suicidal ideation, we understand that suicidal ideation formation involves the core psychological states of defeat and entrapment as proposed by the IMV model and supported by previous studies (e.g., Dhingra et al., 2016, 2015; Owen et al., 2017; Wetherall et al., 2018). Therefore, we found that the relationships between perceptions of past parenting and suicidal ideation, and insecure forms of attachment and suicidal ideation are mediated by defeat and entrapment (panels a–c of Figure 2).

We also found evidence in support of Hypothesis 2, suggesting that holding more negative memories of interactions with parents is associated with reporting a higher sense of failure/defeat and that insecure forms of attachment mediated this relationship. Our data specifically suggest that memories of lower parental care are associated with higher levels of feeling defeated and unsuccessful in dealing with difficult interpersonal situations, and this connection could be explained by an insecure pattern of attachment, either anxious or avoidant. Mikulincer and Shaver (2016), reviewing the literature on adult attachment and self-destructive psychological processes, reported that insecurely attached people tend to describe a more negative interpretation of life events, search for negative information about themselves, rely on unstable and external sources of self-worth, and show a tendency to suffer from painful self-criticism and perfectionism. However, attachment anxiety and avoidance would relate to defeat through different mechanisms: Anxious people tend to take responsibility for achievement-related failures and interpersonal rejections (e.g., Gamble & Roberts, 2005), and avoidant individuals would display a more defensive pattern of self-attributions (Mikulincer & Shaver, 2016). Notwithstanding, the underlying psychological processes connecting insecure forms of attachment and defeat/failure still require further investigation.

When investigating the mediating effect of anxious and avoidant attachment on the relationship between memories of overprotective parenting and defeat, our data suggested specific associations. The first was that attachment anxiety mediated the maternal overprotection–defeat relationship, which is consistent with Bowlby's (1973) observations that overprotective caregiving may create enduring anxiety and vigilance in the ambivalently attached child, who becomes concerned that their needs may also not be met in other threatening situations. The maternal overprotection–defeat relationship did not seem to be mediated by attachment avoidance. This is consistent with Bowlby's propositions, as an avoidance form of insecure attachment would be more likely to be developed by experiencing an unresponsive or intrusive parental behavior. Although we would expect similar findings for memories of paternal overprotection, our data suggested that attachment avoidance mediates the relationship between paternal overprotection and defeat, which was not the case for attachment anxiety.

As memories of past interactions with parents constitute an essential part of attachment-related mental representations of self and others (Mikulincer & Shaver, 2016), attachment anxiety and avoidance mechanisms tend to be activated in distressing events involving close relationships, what Adam (1994) termed "attachment crisis." In the present study, we found evidence for the hypothesis that people with higher levels of attachment anxiety and avoidance would be more likely to perceive themselves as defeated and trapped, consistent with the IMV model (O'Connor & Kirtley, 2018). Unexpectedly, maladaptive coping strategies did not moderate the relationship between defeat and entrapment (H4), although maladaptive coping predicted entrapment controlled for depressive symptoms. As previous studies suggest that coping strategies may only be activated by the presence of moderating factors such as stress (O'Connor & O'Connor, 2003), future research should investigate this directly. We also found support for the final hypothesis, as resilience moderated the relationship between entrapment and suicidal ideation (Figure 3). This finding replicates

that of Wetherall et al. (2018), but it also extends the latter study by suggesting that at higher levels of entrapment, participants who report higher resilience show lower levels of suicidal ideation than those who reported lower scores of resilience.

Taking a broader theoretical approach, Adam (1994) proposed that early attachment experiences and perceptions/interpretations of caregivers' parenting would produce a specific vulnerability to suicidal behavior through their effects on the attachment system, depending on the impact of other interplaying risk and protective factors. From our interpretation, Adam's (1994) proposition is consistent with the premotivational phase of the IMV model, since both Adam's (1994) and O'Connor's models postulate a diathesis–stress and mechanistic-dependent explanation of the etiology of suicidal ideation and behavior. Our study lends support to this literature as it suggests that memories of adverse parental bonding and current insecure forms of attachment (i.e., anxiety and avoidance) may be associated with defeat and entrapment, and by extension to other negative outcomes such as suicidal ideation. Therefore, in line with previous findings and the premises of the IMV model, entrapment is associated with suicidal ideation and thus an ultimate mechanism by which defeat may lead to suicidal ideation. Taken together, we suggest that when experiencing a close interpersonal relationship issue, individuals who have highly negative perceptions of their past bonding with parents and fail to solve that interpersonal issue through insecure attachment strategies ("attachment crisis") are more likely to feel defeated and experience perceptions of entrapment, ultimate drivers to suicidal ideation (Taylor et al., 2011).

An important issue to be investigated in future studies would be widening the dimensions of parenting to include not only care and overprotection, but also abuse and childhood maltreatment. Findings from a recent meta-analysis (Angelakis, Gillespie, & Panagioti, 2019) indicate that all types of childhood abuse are associated with increased risk for suicidal ideation and suicide attempts in adults independent of demographic, clinical, and methodological variations across the studies. The authors of the meta-analysis suggest that the literature is still lacking in respect of empirical evidence for the mechanisms by which experiences of childhood maltreatment exert their detrimental and long-lasting impact on suicide risk. Future studies could focus on mechanisms, for example, by testing the role of attachment as a mediator between childhood maltreatment and suicide risk, since evidence suggests that insecure attachment dimensions are strongly associated with a past history of childhood maltreatment (e.g., Egeland & Sroufe, 1981; Liem & Boudewyn, 1999; Muller, Thornback, & Bedi, 2012).

This study also has clinical implications, suggesting a protective effect of resilience buffering the entrapment–suicidal ideation relationship. Although there is no consensus about the operationalization of resilience as a construct (Bonanno, 2012; Chmitorz et al., 2018; Luthar et al., 2000), there is promising evidence for interventions to enhance resilience and stress management in the context of anxiety and depression (Padesky & Mooney, 2012; Waugh & Koster, 2015). These interventions have the potential to ameliorate suicide risk, as resilience has been shown to buffer against suicide risk in those exhibiting psychotic symptoms (Johnson et al., 2010), in adolescents who are homeless (Cleverley & Kidd, 2011), in war veterans (Pietrzak et al., 2011), and in farmers (McLaren & Challis, 2009). A second clinical implication is the development and strengthening of self-compassion attitudes to reduce the effect of insecure attachment strategies. Self-compassion has been defined as the action of being caring, understanding, and compassionate toward oneself when facing hardship or perceived inadequacy (Neff, 2003). As self-perceptions of defeat were shown to be associated with negative views of the self and others (attachment orientations), it has been suggested that developing self-compassion may increase resilience and reduce the deleterious effects of insecure attachment strategies (Gilbert, 2014) during

stressful situations. Neff et al. (2007) demonstrated that participants who experienced an increase in attitudes of self-compassion also reported an enhancement in social connectedness and declined attitudes related to insecure forms of attachment such as self-criticism, depression, rumination, thought suppression, and anxiety.

Limitations

The current study should be seen in the context of its limitations: (a) The cross-sectional design employed does not imply causality in the analysis and restricts the directionality of the relationships tested, even though it was informed theoretically; (b) the sample was relatively homogeneous, being mainly young, female, and white, constraining the potential generalizability of the results; (c) as our sample was nonclinical, it is important to replicate these findings in a clinical population; (d) the data were collected through self-report measures, and therefore, they are not immune to the effect of demand characteristics; (e) some concern could be raised about recall bias in respect of participants' self-report of their parents' behaviors, as we focused on the participants' memories; and (f) although online data collection has advantages over traditional paper-and-pencil procedures, it also includes some limitations such as lower representativeness of the sample (restricted to Internet users), and potential technical difficulties (Internet connection and computer issues) that could reduce response rate.

CONCLUSIONS

The findings suggest that memories of negative parenting are associated with feelings of defeat, and this association is mediated by current self-reports of insecure forms of attachment. These perceptions of past negative parenting and insecure activation of the attachment system may have their effect on suicidal ideation via defeat and entrapment. The results indicate that the relationship between entrapment and suicidal ideation may be buffered by resilience, suggesting this as a potential intervention target. In general, the findings are congruent with the core principles of the IMV Model of Suicidal Behavior, which delineates the final common pathway to suicidal ideation and behavior.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Factor Analysis of the Brief COPE Inventory.
Table S1. Missing Data Analysis of Scale Completion for Imputation Procedures (N = 730).
Table S2. Demographic differences between exploratory and confirmatory subsamples.
Table S3. Mean differences between exploratory and confirmatory subsamples for age and item response.
Table S4. Factor loadings of the Brief COPE Inventory exploratory factor analysis.
Table S5. Validity and reliability indices for the Brief COPE Inventory EFA solution.
Figure S1. Scree plot of the exploratory subsample with Monte Carlo simulated cut-off for factor retention.
Appendix S2. Alternative post-hoc analysis.