

EARLY MALADAPTIVE SCHEMAS AND EMOTION REGULATION, PSYCHOLOGICAL KNOTS BETWEEN FAMILY AND HEALTH

LILIANA BUJOR*

“Ștefan cel Mare” University, Suceava

Abstract

Early maladaptive schemas and emotion regulation represent relevant psychological constructs in the *family-health* equation. The present study aims to investigate the impact of parental styles of emotion socialisation (fear and happiness) on health, by testing an integrative explanatory model with early maladaptive schemas and emotion regulations in parallel mediation models. According to research, priorities established by the experts and the executive board of the International Society for Schema Therapy (Pilkington *et al.*, 2023), the present study investigates the parenting models involved in the generation of schemas, and also, schemas in relation to health, moreover, schemas and emotion regulation as mediators.

The research involved a sample of 455 adults, ($M = 21.33$; $SD = 6.03$) 74.3% female ($N = 338$), 25.7% male ($N = 165$). Instruments measuring parental emotion socialisation, early maladaptive schemas, emotion regulation, anxiety and physical health were used. The conceptual models were tested in a statistical analysis, including parallel mediation models and a moderate mediation model to the right, designed to measure direct and indirect effects of the variables included in the models.

The results indicate that the mother's strategies for socialising emotions of fear and happiness do not have a direct effect on anxiety and physical health, but one mediated by the domains of Impaired autonomy and Performance, Separation and Rejection. Specific schemas, such as Abandonment and Mistrust/Abuse, act as mediators between mothers' emotional responses in childhood and health in adolescence. In contrast, the impact of fathers' emotional responses has a direct effect on physical and emotional health in adolescence, with early maladaptive schemas and emotional regulation mechanisms not acting as mediators.

These findings support the research priorities in the field of schema therapy and allow the conceptualisation of health and parental emotion responses through the lens of maladaptive schemas, as well as future interventions through rescripting modes in a healthy perspective for the reconfiguration of the personality, even after emotional experiences have shaped maladaptive responses during childhood.

Keywords: emotion socialisation strategies, early maladaptive schemas, emotion regulation, anxiety, physical health, relationship with parents, romantic partner, Somatic Symptom Disorder.

INTRODUCTION

Schema Therapy, developed by Jeffrey Young, combines aspects of cognitive-behavioural therapy, psychodynamic therapy, emotion-focused therapy, and Gestalt Therapy, and is part of the third wave of psychotherapies. The

* Faculty of Psychology, Ștefan cel Mare University, Suceava. E-mail: liliana.bujor@usm.ro

therapeutic model has four components: (1) 18 early maladaptive schemas (EMS), (2) five basic emotional needs (the need to establish a secure attachment, the need for autonomy and personal identity, the need for boundaries and healthy self-control, the need for emotional expression and the need for relatedness, creation and joy), (3) coping styles and (4) schema modes. EMS are organised into five domains: Disconnection and Rejection, Impaired Autonomy and Performance, Impaired Limits, Other-Directedness, and Over-vigilance & Inhibition. Recently, a series of factorial research has been initiated in an attempt to identify a higher-order structure of EMS. A new model has been proposed, reducing the basic needs from five to four, resulting, implicitly, in four schema domains and 16 EMS), (Karaosmanoğlu *et al.*, 2024).

Regarding the historical (long-term) development of schema therapy research, the area with the largest body of research is represented by early maladaptive schemas, schema domains, and therapy efficacy. In contrast, are the studies on coping styles associated with schemas, adaptive schemas, and parental models involved in schema generation - 1% (Pilkington & Karantzas, 2024).

LITERATURE REVIEW

In the relationship between parenting styles and EMS, schemas have an intergenerational impact, with parents' schemas being significant predictors of the development of the same schemas in adolescents. The Disconnection and Rejection domain has a negative and profound effect on the parent-child relationship and facilitates the transfer of specific schemas to the next generation (Sójta & Strzelecki, 2023). In contrast, parents' schemas do not directly affect children's social adaptation, with the relationship between parents' EMS and children's social adaptation being completely mediated by adolescents' maladaptive schemas (Shi *et al.*, 2024; Bruysters & Pilkington, 2023). Regarding the gender differences between parents, when fathers are the main caregivers, there is coherence but also a greater intergenerational impact, perhaps due to the traditional role of the father in value formation (Sójta & Strzelecki, 2023; Shi *et al.*, 2024).

Analysing the relationship between parenting styles and emotion regulation, a recent study proposes an atypical conclusion compared to previous research; no strategy is, per se, adaptive or maladaptive, as its effect depends on the context of co-occurring parental behaviours. The study develops the *Good Enough Parenting* model (a concept specific to Schema Therapy), within which both positive and negative strategies can coexist. The interaction between rewarding and ignoring is associated with the lowest levels of difficulties in emotion regulation (DER), whereas the combination of punishment and neglect significantly increases DER. The interaction of all strategies leads to a moderate increase in DER, while reward has a protective role and can compensate for the negative effects of other strategies, but not for those of neglect. However, when ignoring is added to the reward–

neglect interaction, DER decreases, as ignoring functions as a buffer against the negative effects of neglect. Neglect, manifested through parental emotional unavailability, has been shown to be the most disruptive strategy, being the only one that cancels the positive effect of reward (Azevedo *et al.*, 2025).

In the relationship between early maladaptive schemas and health, depression and anxiety are the main emotional distresses explored in relation to schema therapy (22% and 14% of the articles analysed in the last 30 years investigated these two constructs). Schemas in the domains of Disconnection and Rejection, Impaired Autonomy and Performance, and Impaired Limits are associated with depression, stress, anxiety, and rumination (Ahrnberg *et al.*, 2024; Nicol *et al.*, 2020). They influence how a person interprets interpersonal relationships (Bruysters & Pilkington, 2023) and constellations of schemas may indicate a specific vulnerability to certain forms of psychopathology (Bär *et al.*, 2023; Thimm & Chang, 2022). The Disconnection and Rejection and Impaired Limits domains have a direct and mediated impact on behaviours related to heart health, while the Hypervigilance and Inhibition domain has a mediated influence through emotional regulation and self-compassion mechanisms (Amiri Pijakelai *et al.*, 2024).

Early maladaptive schemas mediate the relationship between parenting style and health. The domains of Disconnection and Rejection, Impaired Autonomy and Performance mediate the relation between parenting style and depressive symptoms (Basso *et al.*, 2019), as well as the relationship between parental control experienced in adolescence and romantic attachment style in adulthood (Mullinax & Turner, 2024). The relationship between inhibited temperament and depression is mediated by schemas in the Disconnection and Rejection domain (Gökdağ & Erdoğan-Yıldırım, 2022). The relationship between parenting style and chronic pain is mediated by EMS, which generate interpretations of bodily sensations that can be felt in terms of persistent pain (Salari *et al.*, 2022).

Regarding the analysis of the influence of the parents' gender (mother versus father), one study identified gender differences between parents in terms of the impact on EMS- maternal invalidation is manifested only through emotional schemas, while paternal emotional invalidation continues to have a direct relationship with distress in adulthood, even after emotional schemas are taken into account (Sebastião *et al.*, 2025).

There are few studies that explore family models of response practices of fathers and mothers for specific emotions. A recent study identified four distinct profiles for parental reactions to happiness: coherent disengaged (a passive approach from both parents), coherent supportive (high levels of amplification and low levels of dampening from both parents), coherent unsupportive (low levels of amplification and high levels of dampening from both parents), and incoherent (inconsistent responses between mother and father). The emotions of happiness and anger include a disengaged profile, while reactions to sadness generate either a supportive or unsupportive style, both coherent (but not disengaged). Parents'

responses to children's expression of happiness produce the strongest effects on emotion regulation and depressive symptoms (*Gao et al.*, 2025).

For a full understanding of these relationships, a conceptual and methodological framework is necessary. It will be presented in this research. We start from the premise, confirmed in literature, that parenting style is a predictive factor for early maladaptive schemas. In contrast, there are few studies that have analysed, separately, the impact of the two parents (mother/ father) in managing specific emotions. In addition, we aim to measure emotion regulation as a mediator and moderator factor based on which we can intervene on early maladaptive schemas and, implicitly, on health status, through adaptive response mechanisms. Below, we structured the hypotheses of the present study:

Hypothesis 1: Early maladaptive schemas and emotion regulation strategies are mediating factors between the early socialisation of the emotion of fear by the mother and self-perceived physical health, respectively, anxiety.

Hypothesis 2: Early maladaptive schemas and emotion regulation strategies are mediating factors between the early socialisation of the emotion of fear by the father and self-perceived physical health, respectively, anxiety.

Hypothesis 3: Early maladaptive schemas and emotion regulation strategies are mediating factors between the early socialisation of the emotion of happiness by the mother and self-perceived physical health, respectively, anxiety.

Hypothesis 4: Early maladaptive schemas and emotion regulation strategies are mediating factors between the early socialisation of the emotion of happiness by the father and self-perceived physical health, respectively, anxiety.

Hypothesis 5: Emotion regulation strategies are moderators between early maladaptive schemas and self-perceived physical health, respectively, anxiety.

METHOD

PARTICIPANTS AND PROCEDURE

The study was conducted on a total of 455 participants that have the following characteristics according to specific demographic data: the age of participants ranged from 17 to 50 years old ($M=21.33$; $SD=6.03$), emerging adults represent 92% ($N=417$ subjects), 74.3% are women ($N=338$), 25.7% are men ($N=117$). Regarding the distribution according to the environment of origin, 59.6% are from rural areas ($N=271$), 40.4% come from urban areas ($N=184$). The group consists of students from Stefan cel Mare University of Suceava, belonging to the 11 faculties, as follows: 7.9% Faculty of Law and Administrative Sciences, 14.9% Faculty of Economics, Administration and Business, 4.6% Faculty of Physical Education, 7% Faculty of Food Engineering, 13.2% Faculty of Electrical Engineering, 12.1% Faculty of Letters and Communication Sciences, 14.1% Faculty of Medicine and Biological Sciences, 22% Faculty of Psychology and Educational Sciences.

First, the data collection protocol was approved by the Ethics Committee of Ștefan cel Mare University of Suceava (Notice no. 237/07.11.2024). Second, all study participants received and signed the informed consent form in which they received guidelines about the purpose of the study, were assured of confidentiality, the right to withdraw from the research at any time and expressed their agreement to the processing of personal data (students were also asked for identification data in order to personally communicate the results of the completed instruments). Participants completed the instrument set that included five scales and a series of items regarding demographic data. Data were collected using self-report scales, the instruments were completed in paper-and-pencil format in different educational contexts (course, seminar, or in university learning spaces, by Psychology students), and the administration time was approximately 25–35 minutes.

METHODS

For this cross-sectional study, five instruments were used: The Emotion as a Child Scale (EAC, Version 2-Klimes-Dougan *et al.*, 2007). For each scale, the participants recalled the parents' responses (separately for the mother and father) to their positive (*e.g.* happiness) or negative (*e.g.* anger) emotions during their childhood period. The instrument has 15 items, evaluated on a Likert Scale in five steps 1 (*not at all*) to 5 (*very much*), for each analysed emotion and five parental styles: Reward (item: *Helped me deal with the issue*), Punish (item: *Gave me a disgusted look*), Override (item: *Bought me something I liked*), Neglect (item: *Ignored me*) and Magnify (item: *Got anxious herself/ himself*). Due to data reduction strategies, we computed and used two summary indexes: positive parental emotion socialisation (Reward scale) and negative parental emotion socialisation (Neglect and Punishment scales). According to Ramakrishnan *et al.*, (2019), the factor analyses with the negative emotion scales in this study demonstrated that Punishment and Neglect are the most representative for negative parental emotion socialisation styles. In this study, the Cronbach's alphas were between 0.70 and 0.89 for all the dimensions.

Early Maladaptive Schemas (EMS, The Young Schemas Questionnaire-Short form 3 YSQ-S3, Ypoung *et al.*, 20023), the short version has 114 items that are distributed on subscales that represent the 18 early maladaptive schemas, organised into five domains: D1. Disconnection and Rejection (Abandonment/ Instability, Mistrust/ Abuse, Emotional Deprivation, Defectiveness/ Shame, Social Isolation/ Alienation), D2. Impaired Autonomy and Performance (Failure, Dependence/ Incompetence, Vulnerability to harm, Undeveloped Self), D3. Impaired Limits (Entitlement/ Grandiosity, Insufficient Self-Control/ Self-Discipline), D4. Other-Directedness (Subjugation, Self-Sacrifice, Approval-Seeking/ Recognition-Seeking), D5. Hypervigilance and Inhibition (Negativism/ Pessimism, Emotional Inhibition, Unrelenting Standards/ Hypercriticalness, Punitiveness). The items, in the form of statements (*e.g.* My parents and I tend to get involved in each other's

lives and problems) are evaluated on a 6-point Likert scale: 1 – totally untrue, 6 – describes me perfectly. The instrument, translated and adapted to the Romanian population, has very good reliability, Cronbach's Alpha is 0.96, on subscales ranging between 0.69 and 0.90, in our study, it is 0.97.

The Emotion Regulation Questionnaire (ERQ, Gross & John, 2003) has 10 items and measures cognitive reappraisal (item: *When I want to feel more positive emotions, I change the way I think about the situation*) and expressive suppression (item: *When I feel negative emotions, I make sure not to express them*). The answers are scored on a 7-point Likert Scale 1 (*strongly disagree*) to 7 (*strongly agree*). The cognitive reappraisal subscale has an adequate internal consistency with the Cronbach's alpha = .76 and for expressive suppression, we have the Cronbach's alpha = .75.

Depression, Anxiety, Stress/ DAS 21-R (Lovibond and Lovibond, 1995) has 21 items. For the present research, we selected the 7 items that measure anxiety (e.g. I got scared for no good reason) on a 4-point Likert scale (0 – not at all, 3 – very much or almost all the time). The Cronbach's Alpha coefficient for this subscale indicates a very good internal consistency- 0.84.

Somatic Symptom Adult Patient (adapted from the Patient Health Questionnaire Physical Symptoms PHQ-15) evaluates, through 13 items, a series of somatic problems manifested in the last two weeks (e.g., Stomach pain, A strong heartbeat) on a 3-point scale (0-not at all, 3-very much). The Cronbach's Alpha coefficient indicates very good internal consistency – 0.81.

STATISTICAL ANALYSIS

To perform the analyses, we used the statistical data analysis program SPSS20 and PROCESS v4.2 by Andrew F. Hayes. Both the direct and indirect effects of parental strategies for socialising the emotions of fear and happiness, separately for the mother and father, on the emotional and physical health status through emotional regulation strategies and early maladaptive schemas were calculated in eight parallel mediation models like complementary mediators. In addition, we tested the moderating role of emotion regulation mechanisms in four right-moderated mediation models. We used the bootstrapped procedure with 5000 samples, with a 95% confidence interval, with the significance of indirect effect being indicated when the confidence interval does not contain zero ($p < .05$). Bootstrapping is a resampling method that constructs a confidence interval by examining the indirect effect and provides a much more accurate estimate, regardless of whether the data distribution is normal or not (Hayes & Preacher, 2014; Kane & Ashbaugh, 2017). Statistical analyses included descriptive statistics, normality of the distribution (skewness and kurtosis), and bivariate correlations (Pearson's). Internal consistency for all scales was assessed by calculating the Cronbach's Alpha coefficient. Missing values were excluded from the database.

RESULTS

DESCRIPTIVE STATISTICS

The descriptive statistic elements (means, standard deviation, minimum, maximum, Skewness, Kurtosis) are presented in Table 1.

Table 1

Descriptive statistics

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Skew</i>	<i>Kurt</i>
M_Fear_Socialisation	13.30	2.06	6	20.67	0.16	0.98
F_Fear_Socialisation	12.49	2.06	6.33	20.33	-0.30	0.81
M_Happiness_Socialisation	13.14	1.57	5.33	18.33	-0.34	3.33
F_Happiness_Socialisation	13.04	1.83	6.33	19.00	-0.11	0.91
Disconnection and Rejection	69.90	23.1	25	136	0.42	-0.50
Impaired Autonomy and Performance	65.96	20.97	25	136	0.53	0.18
Impaired Limits	72.83	19.22	26	122	0.17	-0.43
Other-Directedness	73.50	19.48	26	129	0.11	0.22
Overvigilance and Inhibition	79.56	16.92	24	130	-0.03	-0.01
Cognitive reappraisal (CR)	27.04	6.72	6	42	-0.35	-0.33
Expressive suppression (ES)	14.06	5.30	4	28	0.08	-0.42
Anxiety	8.55	5.73	0	38	0.87	1.94
PHQ	9.52	5.40	0	35	0.69	0.71

M = average; *SD* = the standard deviation; *Min* = minimum; *Max* = maximum; *Skew* = skewness; *Kurt* = kurtosis

CORRELATIONS AMONG THE STUDY VARIABLES

The bivariate correlations between the main constructs are presented in Table 2. We have significant correlations between the mother's strategies for emotion socialisation (fear, happiness) and EMS domains, the mechanisms of emotion regulation (ER), anxiety and physical health. The father's emotional response correlates less with the researched variables: for fear socialisation, we have significant correlations only with ER strategies, and in the case of happiness socialisation, we have correlations also with two schema domains: Impaired Limits and Hypervigilance and Inhibition. The conditions of the distribution normality were verified in advance, the values for Skewness and Kurtosis falling, for the most part, within the admissible range of ± 1 .

Table 2

Correlations between variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. M_Fe_Soc												
2. F_Fe_Soc	.68**											
3. M_Hap_Soc	.48**	.43**										
4. F_Hap_Soc	.40**	.49**	.72**									
5. Disconnection	.12**	.00	.09	.07								
6. Impaired Autonomy	.12**	.07	.08	.07	.75**							

Table 2 (continued)

7. Impaired Limits	.13**	.07	.06	.03	.56**	.54**							
8. Other-Directedness	.18**	.07	.16**	.13**	.70**	.69**	.62**						
9. Inhibition	.15**	.08	.07	.10*	.78**	.72**	.63**	.75**					
10. CR	.17**	.11*	.12**	.06	.07*	-.02	.13**	.13**	.12**				
11. ES	.18**	.13**	.13**	.15**	.43**	.29**	.27**	.29**	.42**	.30**			
12. Anxiety	.12**	.04	.15**	.07	.34**	.32**	.20**	.28**	.28**	.00	.18**		
13. PHQ	.12**	.01	.09*	.09*	.40**	.35**	.25**	.30**	.31**	-.02	.15**	.47**	

** $p < .01$, * $p < .05$; M_Fe_Soc – mother fear socialisation; F_Fe_Soc – father fear socialisation; M_Hap_Soc – mother happiness socialisation; F_Hap_Soc – father happiness socialisation; CR-Cognitive Reappraisal, ES- Expressive Suppression

Hypotheses of mediation and moderation were tested using the PROCESS macro (Model 4; Model 14; Hayes, 2022). The results are presented following the structure of five hypotheses.

For *Hypothesis 1*, which examines the mediating role of early maladaptive schemas and emotion regulation strategies in the relationship between early socialisation of *fear (mother) and self-perceived physical health*, respectively *anxiety*, the results indicate a mediating role of Disconnection and Rejection domain in the relationship between the independent variable [fear socialization by the mother] and the dependent variables [PHQ – physical health] and [anxiety] (Table 3).

In the first parallel mediation model (5000 bootstrap samples) examining the relationship between [fear socialization by the mother] and [PHQ], after introducing the mediators into the model, the direct effect of the independent variable on the dependent variable became non-significant, $b = 0.21$, $SE = 0.11$, $p = 0.6$, $p > .05$, while the indirect effect remained significant for two mediators: the Disconnection and Rejection domain, $ab = 0.08$, $SE = 0.04$, 95% CI [0.01, 0.16], and the Impaired Autonomy and Performance domain, $ab = 0.10$, $SE = 0.04$, 95% CI [0.02, 0.21]. Since the confidence interval for the indirect effect does not contain zero, the results confirm a full mediation of the relationship between fear socialisation by the mother and physical health through the domain mediator of Disconnection and Rejection (Table 3). The impact of a mother's response to the emotion of fear on physical health and anxiety is transformed in the transition from childhood to adulthood through cognitive schemas.

Table 3

Regression coefficients for the parallel mediation model of the relationship between *Fear Mother Socialisation- PHQ* and *Anxiety* (mediators: schema domains)

Fear Mother Socialisation- PHQ				
Relationship	Coefficient (b)	SE	LLCI-ULCI 95%	p
IV → Mediators (a)				
M_Fe_Soc → M1 (Disconnection)	1.47	0.55		< .01
M_Fe_Soc → M2 (Autonomy)	0.98	0.37		< .01
M_Fe_Soc → M3 (Limits)	0.49	0.17		< .01
M_Fe_Soc → M4 (Other-Directed)	1.76	0.43		< .001

Table 3 (continued)

M_Fe_Soc → M5 (Inhibition)	1.95	0.59	< .001
M_Fe_Soc → M6 (CR)	0.55	0.15	< .001
M_Fe_Soc → M7 (ES)	0.46	0.11	< .001
Mediators→ DV (b)			
M1 (Disconnection) → PHQ	0.07	0.01	< .001
M2 (Autonomy) → PHQ	0.02	0.02	(ns)
M3 (Limits) → PHQ	0.02	0.03	(ns)
M4 (Other-Directed) → PHQ	0.00	0.02	(ns)
M5 (Inhibition) → PHQ	-0.008	0.01	(ns)
M6 (CR) → PHQ	-0.05	0.03	(ns)
M7 (ES) → PHQ	-0.009	0.05	(ns)
IV→ DV Direct effect(c')			
M_Fe_Soc → PHQ	0.21	0.11	.06 (ns)
Indirect effect (ab)			
M1 (Disconnection)	0.10	0.04	[0.02–0.21] S
Fear mother socialization- Anxiety			
Mediators→ DV (b)			
M1 (Disconnection) → Anxiety	0.007	0.002	< .01
M2- M7 → Anxiety			(ns)
IV → DV Direct effect (c')			
M_Fe_Soc → Anxiety	0.02	0.01	.10 (ns)
Indirect Effect (ab)			
M2 (Disconnection)	0.10	0.006	[0.001–0.02] S

In the second parallel mediation model, we examined the effect of the independent variable [fear socialisation by the mother] on the dependent variable [anxiety] (Table 3). After introducing the mediators into the model, the direct effect of the independent variable on the dependent variable became non-significant, $b=0.02$, $SE=0.01$, $p=0.10$, $p>.05$, while the indirect effect remained significant for a single mediator, the Disconnection and Rejection domain, $ab=0.10$, $SE=0.006$, 95%, CI [0.001-0.02]. The confidence interval confirms a full mediation of the relationship between maternal fear socialisation and anxiety through the mediator, defining the Disconnection and Rejection domain.

For further analysis, we examined the mediating role of the schemas within the Disconnection and Rejection domain: Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness/Shame, and Social Isolation/Alienation. We identified the Abandonment schema as the only mediator between how the mother responds to fear in childhood and physical health (PHQ) (Table 3.1). The non-significant direct effect, $b=0.18$, $SE=0.11$, $p=0.10$, $p>.05$, and the significant indirect effect, $b=0.07$, $SE=0.03$, CI [0.01-0.15], indicate full mediation. Thus, the mother's response to the child's fear and anxiety in adolescence is mediated by the Abandonment schema, the only schema within the Disconnection and Rejection domain (Table 3.2).

Table 3.1

Regression coefficients for the parallel mediation model of the relationship between *Fear Mother Socialisation- PHQ* (mediators: schema for the Disconnection and Rejection domain)

Fear Mother Socialization - PHQ				
Relationship	Coefficient (b)	SE	LLCI-ULCI 95%	p
IV→ Mediators (a)				
M_Fe_Soc → M1 (Abandonment)	0.40	0.14		< .01
M_Fe_Soc → M2 (Mistrust/Abuse)	0.34	0.12		< .01
M_Fe_Soc → M3 (Emotional Deprivation)	0.16	0.14		(ns)
M_Fe_Soc → M4 (Defectiveness)	0.18	0.12		(ns)
M_Fe_Soc → M5 (Social isolation)	0.39	0.12		< .01
Mediators→ VD (b)				
M1 (Abandonment) → PHQ	0.17	0.05		< .001
M2 (Mistrust/Abuse) → PHQ	0.12	0.06		< .05
M3 (Emotional deprivation) → PHQ	0.06	0.05		(ns)
M4 (Defectiveness) → PHQ	0.06	0.06		(ns)
M5 (Social Isolation) → PHQ	-0.009	0.06		(ns)
IV → DV Direct Effect (c')				
M_Fe_Soc → PHQ	0.18	0.11		.10 (ns)
Indirect effect(ab)				
M1 (Abandonment)	0.07	0.03	[0.01–0.15]	S

In the analysis of the mediating role of schemas within the Disconnection and Rejection domain in the relationship between maternal response to fear and anxiety, we identified the same Abandonment schema as the only mediator (Table 3.2). The non-significant direct effect, $b=0.02$, $SE=0.01$, $p=0.09$, $p>.05$, and the significant indirect effect, $b=0.01$, $SE=0.007$, $CI [0.003-0.03]$, indicate full mediation. Thus, the mother's response to the child's fear does not directly influence anxiety in adolescence, but rather indirectly through the Abandonment schema. (Table 3.2)

Table 3.2

Regression coefficients for the parallel mediation model of the relationship between *Fear Mother Socialisation- Anxiety* (mediators: schema for the Disconnection and Rejection domain)

Fear Mother Socialisation - Anxiety				
Relationship	Coefficient (b)	SE	LLCI-ULCI 95%	p
Mediators→ DV (b)				
M1 (Abandonment) → Anxiety	0.02	0.01		(ns)
M2 (Mistrust/Abuse) → Anxiety	0.01	0.009		(ns)
M3 (Emotional Deprivation) → Anxiety	-0.003	0.008		(ns)
M4 (Defectiveness) → Anxiety	0.01	0.009		(ns)
M5 (Social isolation) → Anxiety	-0.006	0.01		(ns)
IV → DV Direct Effect (c')				
Soc Fr M → Anxiety	0.02	0.01		.09 (ns)
Indirect Effect(ab)				
M1 (Abandonment)	0.01	0.007	[0.003–0.03]	S

Hypothesis 2 was rejected; early maladaptive schemas and emotion regulation strategies are not mediating factors between early *Fear Father Socialisation* and *self-perceived physical health*, respectively, *anxiety*.

By introducing the mediators into the model, the direct effect of the independent variable on the dependent variable became non-significant, both for [PHQ], $b=0.02$, $SE=0.11$, $p=0.81$, $p>.05$, and for [anxiety], $b=0.10$, $SE=0.01$, $p=0.54$, $p>.05$, as well as the indirect effect, which was non-significant for each of the seven mediators analysed (the confidence intervals included zero). The father's fear socialisation strategies were predictors only of emotion regulation mechanisms- cognitive reappraisal, $b=0.36$, $SE=0.15$, $p<.05$, and expressive suppression, $b=0.33$, $SE=0.12$, $p<.05$ (Table 4). The father's response to the emotion of fear during childhood remains directly (not mediated) related to physical and emotional health in adulthood.

Table 4

Regression coefficients for the parallel mediation model of the relationship between *Fear Father Socialization* – PHQ and Anxiety

Fear Father Socialization – PHQ				
Relationship	Coefficient (b)	SE	[LLCI – ULCI] 95%	p
VI→ Mediators (a)				
M_Hap_Soc → M1 (Disconnection)	0.03	0.55		(ns)
M_Hap_Soc → M2 (Autonomy)	0.55	0.37		(ns)
M_Hap_Soc → M3 (Limits)	0.14	0.18		(ns)
M_Hap_Soc → M4 (Other-Directed)	0.66	0.44		(ns)
M_Hap_Soc → M5 (Inhibition)	0.97	0.60		(ns)
M_Hap_Soc → M6 (CR)	0.36	0.15		< .05
M_Hap_Soc → M7 (ES)	0.33	0.12		< .05
Mediators→ DV (b)				
M1 (Disconnection) → PHQ	0.07	0.01		< .01
M2 (Autonomy) → PHQ	0.03	0.02		(ns)
M3 (Limits) → PHQ	0.03	0.04		(ns)
M4 (Other-Directed) → PHQ	0.006	0.02		(ns)
M5 (Inhibition) → PHQ	-0.009	0.01		(ns)
M6 (CR) → PHQ	-0.04	0.03		(ns)
M7 (ES) → PHQ	-0.0007	0.05		(ns)
IV → DV Direct Effect(c')				
M_Hap_Soc → PHQ	0.02	0.11		.81(ns)
Indirect Effect(ab)			no indirect effect	
Fear Father Socialization - Anxiety				
Mediators→ DV (b)				
M1 (Disconnection) → Anxiety	0.007	0.02		< .05
M2-M7 → Anxiety				(ns)
IV → DV Direct Effect (c')				
M_Hap_Soc → Anxiety	0.10	0.01		.54 (ns)
Indirect Effect (ab)			no indirect effect	

Hypothesis 3 examines the roles of the mediators (early maladaptive schemas and emotion regulation strategies) in the relationship between maternal socialisation of happiness and health (Table 5). The hypothesis is partially confirmed – in the parallel mediation model (5000 bootstrap samples) examining the relationship between [maternal happiness socialisation] and [PHQ], both the direct effects, $b=0.21$, $SE=0.15$, $p=0.16$, and the indirect effects are non-significant. For the dependent variable [anxiety], after introducing the mediators into the model, the direct effect of the independent variable on the dependent variable is significant, $b=0.05$, $SE=0.21$, $p=0.01$, however, the indirect effect is non-significant, thus indicating that there is no mediation relationship. The mother's socialisation of the emotion of happiness has a direct effect on anxiety and a partially mediated effect on physical health.

Table 5

Regression coefficients for the parallel mediation model of the relationship between Happiness Mother Socialisation – PHQ and Anxiety

Happiness Mother Socialisation – PHQ				
Relationship	Coefficient (b)	SE	LLCI-ULCI 95%	p
IV → Mediators (a)				
M_Hap_Soc → M1 (Disconnection)	1.36	0.73		< .01
M_Hap_Soc → M2 (Autonomy)	0.92	0.48		(ns)
M_Hap_Soc → M3 (Limits)	0.33	0.23		(ns)
M_Hap_Soc → M4 (Other-Directed)	1.96	0.57		< .01
M_Hap_Soc → M5 (Inhibition)	1.13	0.79		(ns)
M_Hap_Soc → M6 (CR)	0.50	0.20		< .01
M_Hap_Soc → M7 (ES)	0.44	0.15		< .01
Mediators → VD (b)				
M1 (Disconnection) → PHQ	0.07	0.01		< .001
M2 (Autonomy) → PHQ	0.02	0.02		(ns)
M3 (Limits) → PHQ	0.03	0.03		(ns)
M4 (Other-Directed) → PHQ	0.002	0.02		(ns)
M5 (Inhibition) → PHQ	-0.006	0.01		(ns)
M6 (CR) → PHQ	-0.04	0.03		(ns)
M7 (ES) → PHQ	-0.006	0.05		(ns)
IV → DV Direct Effect (c')				
M_Hap_Soc → PHQ	0.21	0.15		.16 (ns)
Indirect Effect (ab)			no indirect effect	
Happiness Mother Socialisation – Anxiety				
Mediators → VD (b)				
M1- M7 → Anxiety				(ns)
VI → VD Direct Effect(c')				
M_Hap_Soc → Anxiety	0.05	0.02		.01
Indirect Effect (ab)			no indirect effect	

Hypothesis 4 examines the mediators between the father's responses to happiness and self-perceived physical health, respectively, *anxiety* (Table 6). By introducing the mediators into the model, the direct effect of the independent variable on the dependent variable became non-significant, both for [PHQ], $b=0.19$, $SE=0.12$, $p=0.13$, $p>.05$, and for [anxiety], $b=0.01$, $SE=0.02$, $p=0.47$, $p>.05$, as well as the indirect effects, which were non-significant for each of the six mediators analysed (the confidence intervals included zero). The father's happiness socialisation strategies were predictors of two schema domains: Dependence/Incompetence, $b=1.37$ $SE=0.49$, $p<.05$ and, Inhibition and Hypervigilance, $b=1.34$, $SE=0.67$, $p<.05$, as well as of expressive suppression as an emotion regulation mechanism, $b=0.43$, $SE=0.13$, $p<.001$ (Table 6). The father's response to the child's happiness is not mediated in the relationship with physical and emotional health.

Tabel 6

Regression coefficients for the parallel mediation model of the relationship between Happiness Father Socialisation- PHQ and Anxiety

Happiness Father Socialisation – PHQ				
Relationship	Coefficient (b)	SE	LLCI-ULCI 95%	p
VI→ Mediatori (a)				
F_Hap_Soc → M1 (Disconnection)	0.87	0.62		(ns)
F_Hap_Soc → M2 (Autonomy)	0.65	0.41		(ns)
F_Hap_Soc → M3 (Limits)	0.12	0.20		(ns)
F_Hap_Soc → M4 (Other-Directed)	1.37	0.49		< .05
F_Hap_Soc → M5 (Inhibition)	1.34	0.67		< .05
F_Hap_Soc → M6 (CR)	0.23	0.17		(ns)
F_Hap_Soc → M7 (ES)	0.43	0.13		< .001
Mediators→ VD (b)				
M1 (Disconnection) → PHQ	0.07	0.01		< .001
M2 (Autonomy) → PHQ	0.03	0.02		(ns)
M3 (Limits) → PHQ	0.03	0.04		(ns)
M4 (Dependence) → PHQ	0.003	0.02		(ns)
M5 (Inhibition) → PHQ	-0.008	0.01		(ns)
M6 (RC) → PHQ	-0.04	0.03		(ns)
M7 (SE) → PHQ	-0.01	0.05		(ns)
IV → DV Direct Effect (c')				
F_Hap_Soc → PHQ	0.19	0.12		.13 (ns)
Indirect Effect(ab)			no indirect effect	
Happiness Father Socialisation – Anxiety				
Mediators→ VD (b)				
M1 (Disconnection) → Anxiety	0.007	0.002		(ns)
M2 (Autonomy) → Anxiety	0.006	0.003		< .001
M3 – M7 → Anxiety	-0.001	0.006		(ns)
IV → DV Direct Effect (c')				
Happiness Father Socialization →Anxiety	0.01	0.02		.47 (ns)
Indirect Effect (ab)			no indirect effect	

Hypothesis 5 tested a moderation relationship between early maladaptive schemas and *self-perceived physical health*, respectively *anxiety*, with emotion regulation strategies (cognitive reappraisal, expressive suppression) acting as moderators. We tested a right-sided moderated mediation model in order to determine whether the magnitude of the relationship between the identified mediators -the domains of the maladaptive schemas and health- depend on the level of the moderator emotion regulation mechanisms (cognitive reappraisal / expressive suppression).

The results indicated that the moderated mediation index is not statistically significant for any of the eight right-sided moderated mediation models.

Statistical indicators for cognitive reappraisal as a moderator are:

Index = - 0.0001, *SE* = 0.004, 95% CI [-0.0010, 0.007], indicating that the indirect effect of childhood fear socialisation on physical health through cognitive schemas is not significantly modified by cognitive reappraisal.

Index = 0.0003, *SE* = 0.005, 95% CI [-0.0006, 0.0013], indicating that the indirect effect of childhood fear socialisation on anxiety through cognitive schemas is not significantly modified by cognitive reappraisal.

Index = -0.0002, *SE* = 0.0004, 95% CI [-0.0010, 0.0007], indicating that the indirect effect of childhood happiness socialisation on physical health through cognitive schemas is not significantly modified by cognitive reappraisal.

Index = 0.0003, *SE* = 0.0005, 95% CI [-0.0006, 0.0012], indicating that the indirect effect of childhood happiness socialisation on anxiety through cognitive schemas is not significantly modified by cognitive reappraisal.

Statistical indicators for expressive suppression as a moderator are:

Index = - 0.0001, *SE* = 0.006, 95% CI [-0.0013, 0.0011], indicating that the indirect effect of childhood fear socialisation on physical health through cognitive schemas is not significantly modified by expressive suppression.

Index = 0.0012, *SE* = 0.0007, 95% CI [-0.0001, 0.0025], indicating that the indirect effect of childhood fear socialisation on anxiety through cognitive schemas is not significantly modified by expressive suppression.

Index = -0.0001, *SE* = 0.0006, 95% CI [-0.0013, 0.0011], indicating that the indirect effect of childhood happiness socialisation on physical health through cognitive schemas is not significantly modified by expressive suppression.

Index = 0.0003, *SE* = 0.005, 95% CI [-0.0006, 0.0012], indicating that the indirect effect of childhood happiness socialisation on anxiety through cognitive schemas is not significantly modified by expressive suppression.

The relation between early maladaptive schemas and health is direct and strong, any level of healthy emotion regulation strategy not being sufficient to modify the impact.

DISCUSSION

The results of this study can be summarised in four major conclusions: (1) parents (especially the mother) have a significant impact on the development of early maladaptive schemas and emotion regulation mechanisms; (2) the

longitudinal impact of parental emotion socialisation strategies on health status in adolescence is not direct, but is mediated by early maladaptive schemas; (3) the schemas Abandonment /Instability and Mistrust/Abuse, from the Disconnection and Rejection and Impaired Autonomy and Performance domains, respectively, represent the main mediators of the relationship between parental emotion socialization styles in childhood and physical and emotional health in adolescence and young adulthood; (4) emotion regulation mechanisms do not moderate the relationship between early maladaptive schemas and health.

The study was structured in accordance with recommendations regarding research in the field of schema therapy identified in a bibliometric analysis (Pilkington & Karantzas, 2024), as well as with research priorities established in a Delphi panel of experts coordinated by the founder, Jeffrey Young, and the executive board of the International Society of Schema Therapy (Pilkington *et al.*, 2023).

In line with the first major recommended theme – constructs and instruments in schema therapy – plus the numerical argument regarding the low number of studies; 1% which investigate parental models involved in schema generation (Pilkington & Karantzas, 2024), we analyse the first conclusion of the study, which is consistent with findings from other research. Parenting style significantly contributes to schema development through its reinforcing effort on temperamental predispositions (Maçik, 2021), this interaction being particularly sensitive to the detection of anger, but not other emotions (Tabesh *et al.*, 2024). In this study, the emotion of fear is significant in the relationship established between the parents' (mother's) response to this emotion in childhood and all five domains of early maladaptive schemas, as well as emotion regulation mechanisms in adolescence. Regarding the emotion of happiness, the mother's significant impact is maintained only for two schema domains (Disconnection and Rejection, Other-Directedness) and emotion regulation mechanisms. It is well established in literature that different parenting styles differentially impact schema development (Shi *et al.*, 2024; Bruysters & Pilkington, 2023), but there is limited data regarding specific emotions. A recent study identified four distinct profiles for parental reactions to happiness (coherent disengaged, coherent supportive, coherent unsupportive, and incoherent), as well as the fact that parents' responses to children's expression of happiness produce the strongest effects on emotion regulation and depressive symptoms (Gao *et al.*, 2025). Regarding parent gender, findings are mixed. The analysis of differences between the two parents highlighted the mother's role as significantly more prominent in schema development, for both fear and happiness. This conclusion aligns with findings from a study that examined the causal relationship between parenting style, early maladaptive schemas, and eating disorders, identifying a stronger maternal impact (Joshua *et al.*, 2024). Fathers' fear socialisation strategies appear to predict emotion regulation mechanisms rather than maladaptive schemas. However, intergenerational analyses indicate that when fathers are primary caregivers, there is both greater coherence and stronger intergenerational impact (Sójtá & Strzelecki, 2023; Shi *et al.*, 2024). Future

research should further investigate the *Good Enough Parenting* construct, in which multiple parenting styles coexist through overlapping effects, from the perspective of gender differences and their relationship with specific emotions (Azevedo *et al.*, 2025) on early maladaptive schemas.

The third recommended theme – schema therapy in relation to mental health – is reflected in the second conclusion of this study. The longitudinal impact of parental emotion socialisation strategies on adolescents' physical and emotional health is not direct but mediated by maladaptive schemas. There is substantial evidence regarding the influence of early maladaptive schemas on mental health (Bruysters & Pilkington, 2023; Bär *et al.*, 2023; Thimm & Chang, 2022; Ahnberg *et al.*, 2024; Nicol *et al.*, 2020; Amiri Pijakelai *et al.*, 2024; Maher *et al.*, 2022) and physical health (Vieira *et al.*, 2023; Slepecky *et al.*, 2017; Ghassempour *et al.*, 2022; Amiri Pijakelai *et al.*, 2024). While schemas may be transmitted intergenerationally (Sójta & Strzelecki, 2023), parents' schemas do not directly affect children's psychosocial constructs. Our findings are consistent with previous research showing that early maladaptive schemas mediate the relationship between early emotional experiences shaped by parents and emotional health (Basso *et al.*, 2019; Mullinax & Turner, 2024), physical health, including chronic pain (Salari *et al.*, 2022), and even adolescents' social adaptation (Shi *et al.*, 2024).

However, emotion regulation mechanisms, like the competing mediator, do not mediate the relationship between childhood emotional socialisation and adolescent health. In literature, the Hypervigilance and Inhibition domain has a mediated influence through emotion regulation and self-compassion mechanisms (Amiri Pijakelai *et al.*, 2024). Other studies identified expressive suppression as a mediator between the Disconnection and Rejection domain and heart-health-related behaviours (Amiri Pijakelai *et al.*, 2024), psychopathological symptoms (Kelley *et al.*, 2019), and between schemas and emotional overeating and obesity (Obara-Golebiowska, 2025).

The third conclusion, aligned with the same research recommendation, highlights specific early maladaptive schemas that mediate the relationship between early emotional experiences and health. We observe the dominance of schemas belonging to the Disconnection and Rejection domain. The mediating role of this domain has been demonstrated in studies examining depressive symptoms (Basso *et al.*, 2019) and even adult romantic attachment style (Mullinax & Turner, 2024). The Abandonment schema is validated in two mediation contexts: the relationship between maternal fear socialisation and physical health, respectively emotional health.

The fourth conclusion invalidated the moderating effect of emotion regulation strategies in the relationship between early maladaptive schemas and health. The results are in accord with others studies that identified that cognitive reappraisal did not influence the relationship between emotional/biological reactivity and either form of anxiety symptoms, and also that expressive

suppression did not moderate the effects of any type of reactivity on any internalizing symptoms (Shapero *et al.*, 2016) or that resilience – but not emotion regulation – moderates both the relationships between ideal self-discrepancy and depression and undesired self-discrepancy and depression (Gürçan-Yıldırım & Gençöz, 2022). A possible explanation is that emotion regulation strategies intensify emotional activation when schemas are activated. Another explanation could be related to the use of strategies of emotion regulation like trait or abilities (Shapero *et al.*, 2016). In this case, data collection was based on self-report measures, without an experimental context that would allow such activation and an objective measure of the emotional impact. As a future perspective, it would be interesting to explore the moderating role of other variables (*e.g.* resilience, sense of confidence) in the relationship between family context and a healthy life that could provide interventions in the academic context.

Although we did not identify significant mediation relationships between fathers' emotion socialisation strategies and health, literature reports gender differences: maternal invalidation in childhood affects adult emotional distress only through emotional schemas as mediators, whereas paternal invalidation continues to have a direct effect on distress in adulthood, even after accounting for emotional schemas (Sebastião *et al.*, 2025).

This study also has several limitations: first, it is a cross-sectional design, which limits causal inferences between studied variables; second, it would be beneficial to include other age groups (*e.g.*, adults) to extend generalizability; and third, health could be measured using physiological indicators that more accurately capture actual health status.

As a future direction, in line with the same recommendations of the executive board of the International Society of Schema Therapy (Pilkington *et al.*, 2023), with an 86% prioritization rate, we aim to design a study identifying the *impact of mechanisms of change on treatment outcomes*. This includes developing an expressive writing intervention program based on the model proposed by Neff (2003b, 2016), which conceptualises self-compassion across three bipolar dimensions: emotional (self-kindness *versus* self-judgment), cognitive (common humanity *versus* isolation), and attentional (mindfulness *versus* over-identification). Self-compassion has already been integrated into various intervention programs, such as Compassion-Focused Therapy (CFT), Mindful Self-Compassion (MSC), and Self-Compassion for Healthcare Communities (SCHC), targeting diverse populations (clinical, non-clinical, adolescents, adults, healthcare workers), (Dreisoerner *et al.*, 2021).

Through this intervention approach, we aim to relate expressive writing techniques to two schema therapy modes: the Vulnerable Child mode, which requires the expression of fear and sadness in a safe context without interference from the Critical Parent or Demanding Parent modes, combined with classical expressive writing and a self-compassion component. This integration is necessary to develop new behaviour and attitudes, and positive character traits, enabling

individuals to relate differently to reality from a Healthy Adult mode. Ultimately, we aim to integrate the validated variables and relationships into a positive health model by Huber that considers capacities and resources related to six dimensions: bodily functions, mental functions, spiritual dimension, quality of life, social participation and daily functioning (Bodryzlova & Moullec, 2023). If we consider the social and economic impact of health, we would take the Dynamic Model of Health Assets into account that positions positive health at the intersection of individual characteristics, actions oriented to a better self and to a better world, informal and institutionalized support and the environment (Bodryzlova *et al.*, 2025). In addition, a positive health means antecedents (individual factors, social/contextual factors) and positive consequences (individual, relational and contextual/ organizational sphere) which propagates in spatial and temporal context (Carvalho *et al.*, 2022).

In conclusion, the present descriptive approach, which identified key *psychological nodes*, namely, significant mediators between early emotional experiences and physical and emotional health-combined with an intervention approach based on expressive writing with self-compassion and positive expressive writing, will contribute to the development of a positive health model integrating core schema therapy modes the Healthy Adult and the Creative Child from a personal adapted perspective. These findings would help the practitioners initiate protocols by preventing the development of early maladaptive schemas, and by building healthy alternatives with social, economic, organizational and educational implications.

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