Cognitive Therapy and Research (2019) 43:737–747
https://doi.org/10.1007/s10608-018-09994-3

ORIGINAL ARTICLE

Intergenerational Transfer of Early Maladaptive Schemas in Mother–Daughter Dyads, and the Role of Parenting

Madeline Gibson[1] · **Andrew J. P. Francis**[1]

Published online: 2 January 2019

Abstract

Expanding limited research on the origins of early maladaptive schemas, this study investigated relations between parental (mother) schemas and parenting styles with child (adult daughter) schemas using cross-sectional methodology. One hundred women (aged 18–88) participated in the study and 39 matched mother–daughter dyads were analysed. The Young Schema Questionnaire, Depression Anxiety and Stress Scale, Parental Bonding Instrument and Parental Authority Questionnaire were used to assess individual schemas, parenting styles from the daughters' perspective, and depression as a mood-state control variable. Mother schemas predicted a range of daughter schemas. There was also evidence of direct transference ('selective internalisation') of some schemas between mothers and daughters. Daughter schemas were associated with parenting styles. In particular, high authoritative parenting predicted lower levels of daughter schemas and high overprotective parenting predicted higher levels of daughter schemas. There was no firm evidence that authoritative parenting mediated the relationship between mother and daughter schemas in this domain. The major limitations of this study are the cross-sectional design and relatively small sample. In conclusion, mother maladaptive schemas and style of parenting predict daughter schemas. The results provide support for interpersonal, intergenerational influences on schema development. In highlighting the possible intergenerational sources of maladaptive core beliefs, this research may open new avenues of therapist–client dialogue.

Keywords Cognitive schema · Intergenerational · Early maladaptive schema · Parenting style · Development

Schemas are an individual's firmly held 'core beliefs' about the world, themselves and others that are carried throughout life (Riso et al. 2006; Young et al. 2006). Since maladaptive schemas can have significant detrimental impact on mental health (Jovev and Jackson 2004; McGinn et al. 2005), it is important we understand the developmental sources of these core beliefs. However, little is known about how an individual's core beliefs are influenced within interpersonal relationships and, in particular, by the schemas of others. Questions of whether there are familial similarities, or whether parental schemas impact the development of their children's schemas, remain largely unexplored. Certainly, understanding the origin of thought processes and recurring themes can put individuals in control of positive self-change (Young et al. 2006) and potentially help to ameliorate negative developmental influences. The purpose of this study, using cross-sectional methodology, was to examine relationships between maladaptive schemas reported independently by mothers and their daughters, and the possible mediating role of (child-reported) parenting styles in that relationship.

✉ Andrew J. P. Francis
andrew.francis@cairnmillar.edu.au

[1] Cairnmillar Institute, 291 Tooronga Road, Hawthorn East, VIC 3123, Australia

Early Maladaptive Schemas as Pathways to Pathology

The term 'schemas' was first introduced by Piaget (1936) to describe the cognitive models children use to conceptualise and predict events occurring in their environment; and the construct was extensively elaborated by Beck (1967) in the context of cognitive therapy. Young et al. (2006) subsequently coined the term Early Maladaptive Schemas (EMSs) to describe dysfunctional or *maladaptive* core beliefs that developed from childhood into adulthood; identifying 18 such schemas, as measured through the Young Schema Questionnaire (YSQ) (Young and Brown 1994). EMSs can be about others, such as 'Abandonment', which involves the belief that others' support and connection is unstable or unreliable, or it can be about

the self, such as the schema 'Unrelenting Standards' which involves the feeling that one must meet very high internalised standards of behaviour and performance (see Young 2012, for detailed descriptions).

The family plays a significant role in childhood development generally (Maccoby 1992), and potentially (as detailed later) in the development of core beliefs. In schema theory, Young and colleagues propose the experiences a child has with primary caregivers, and the way in which basic needs are fulfilled, leads to the development of particular schemas. They suggest EMSs develop from four kinds of early life experience: (1) toxic frustration of needs (e.g. lack of love), (2) traumatisation (e.g. child is harmed), (3) autonomy or limits not met (e.g. indulged or over protected), and (4) selective internalisation or identification (e.g. adopting and identifying with how a parent feels or behaves). Not only are these experiences similar to the outcomes described in parenting style categories (see Baumrind 1991), but also importantly suggest another developmental pathway that may facilitate EMS transference and concordance: selective internalisation or identification with parental characteristics. In schema theory, schemas are self-confirmatory by nature and are thus posited to develop, strengthen and persist from childhood through to adulthood, despite their potential dysfunctionality (Young et al. 2006).

Cornerstone to cognitive models of psychopathology, EMSs have been implicated in the development of a range of adult mental health disorders. For example, across several studies, McGinn et al. (2005) and Cukor and McGinn (2006) examined retrospective reports of childhood abuse and negative parenting from depression and anxiety outpatients as old as 65 years. Support was found for elevated schemas in adulthood as significant mediators of the relationships between adverse childhood experience and adult pathology; emphasising the importance of cognition as a 'pathway' through which child experiences may lead to adult pathology. Similarly, Carr and Francis (2009, 2010) examined the role of EMSs as mediators between retrospectively-reported negative parenting or childhood maltreatment on the one hand and adult levels of borderline or avoidant personality disorder symptomology on the other; results indicating a significant and important pathway from childhood adversity to adult pathology, mediated by maladaptive core beliefs. These findings highlight the importance of understanding further the extent and processes through which core beliefs (particularly dysfunctional ones) are developed through parent–child interactions.

Influence of Parenting Styles on Child Schema Development

In the absence of longitudinal data, the impact of family context on individual schema development is revealed through cross-sectional studies showing associations between (retrospectively reported) parenting styles received during childhood and EMSs reported later in life. Studies consistently demonstrate parenting styles incorporating warmth, support, and positive attachments tend to be associated with lower EMS scores in participants, whilst parenting styles lacking these attributes are associated with elevated EMSs (Carr and Francis 2010; Specht et al. 2009; Wright et al. 2009; Harris and Curtin 2002; Kooraneh and Amirsardari 2015; Leung et al. 2000; Muris 2006; Shah and Waller 2000; Thimm 2010; Turner et al. 2005; Wright et al. 2009; Zafiropoulou et al. 2014).

Across these studies, low parental care, high overprotection, and high neglect were most commonly associated with the schemas of defectiveness/shame, vulnerability to harm, subjugation, self-sacrifice, and insufficient self-control (Harris and Curtin 2002; Leung et al. 2000; Muris 2006; Shah and Waller 2000; Specht et al. 2009; Thimm 2010; Tuner et al. 2005; Wright et al. 2009); although there is variability in which specific EMSs relate to parenting styles, suggesting additional contributing factors are involved. The current study proposes that one such additional factor may be the parent's own EMSs, as active during the child's development.

Impact of Parental Core Beliefs on Their Own Parenting Styles

Since EMSs persist into adulthood, and comprise of strongly held relational themes, EMSs of parents might be expected to impact the relationship with their child. Parenting involves communication, both direct and indirect, to the child concerning values and beliefs about the self and others (Maccoby 2015). Therefore, it is hypothesised here, that parental EMSs may be communicated to a child (and influence their development) through parenting practices which, in turn, reflect at some level the parent's own EMS profile.

There are no published reports exploring possible relationships between parental EMSs and their own parenting styles; although there is a well-developed literature examining the relationship between attachment and parenting. The attachment construct, broadly, bears some concordance with EMSs insofar as both are based on a theoretical frame in which individuals maintain internal working models (IWMs) of the 'self and others' that guide behaviour and cognitions throughout life. Further, both theories emphasise the role of parent–child interactions and fulfilment of core emotional needs in psychological development (Bowlby 1973; Young et al. 2006). Given this conceptual overlap between attachment and EMSs, and in the absence of prior studies examining relationships between EMSs and parenting styles, we suggest that studies on attachment may provide a

reasonable guide for developing inferences about parenting-EMS relationships.

A review by Jones et al. (2015) of over 60 cross-sectional studies found extensive evidence in support of the premise that parents' attachment beliefs were related to their current parenting styles. Secure attachment beliefs in parents were consistently related to positive parenting characteristics and outcomes as rated by self-report and behavioural observations (such as feelings of closeness to their child, warmth, responsiveness, and sensitivity). On the other hand, parents reporting insecure attachment in their own childhood were consistently more likely to display negative parenting characteristics and outcomes with their own children (such as hostility and maltreatment, coldness, separation anxiety, stress, and jealousy towards infant attention).

We suggest that these consistent findings of relationships between parent-reported attachment and parenting styles permit the hypothesis that parental EMSs may also predict subsequent parenting practices, potentially thus influencing the development of particular EMSs in their children. Evidence of, and possible pathways for intergenerational transfer of IWMs, attachment styles and EMSs will now be discussed.

Intergenerational Transmission of Cognitions

Literature on the intergenerational transmission of cognitions is scant, as are studies examining an intergenerational link for EMSs specifically. Brody et al. (1994) provided longitudinal data, collected from 592 families over a 6-year period, to support internalisation of parental values and beliefs (on such topics as marriage, divorce and childbearing) by adolescents; finding that parental warmth predicted congruence. A number of studies have also demonstrated consistency across parent and child attachment styles (Besser and Priel 2005; Kilmann et al. 2009; Mikulincer and Florian 1999; Obegi et al. 2004; Cook 2000; van Ijzendoorn 1992). For example, Besser and Priel (2005) undertook a study of the attachment styles in 300 women across three generations (with 100 participants in each generation). They found moderate, significant, and positive correlations across generations for the continuance of attachment security or insecurity.

There are only two published studies specifically examining whether an intergenerational link might also be present for EMSs, and which therefore provide direct empirical background for the current study. A recent study on EMS transgenerational transference conducted in Poland (Macik et al. 2016), found a pattern between parent and (adult) child EMSs. However, the relationship was not of direct transference; children did not necessarily repeat their parent's maladaptive schemas. Instead, daughters developed corresponding and complementary EMSs of their mothers towards similar themes. For example, the mother Failure schema was strongly related ($r = 0.82$, $p < .01$) to the daughter schema Approval Seeking. The mother schema vulnerability to harm was strongly associated with the daughter schema dependence/incompetence ($r = 0.84$, $p < .01$). However, the sons showed a relationship in reverse. The sons developed schemas that were oppositional to their mothers'; the relationships were largely negatively correlated. Father–son dyads showed the least amount of significant correlations. Despite these interesting and unique findings, the study was conducted with only 20 families (each with a daughter, son, mother and father) thus the sample is too small for confident conclusions to be drawn. Descriptive statistics on schema scores were also not given, so it is unknown how the group scored across the different schemas and whether this was influential in the results.

The other published study examining an intergenerational link between parent and child EMSs was conducted in Iran (Beigi and Askari 2016). This study utilised a clinical sample of 50 adults with personality disorders, and both parents. Parents' schemas predicted 52% of the variation in their child's schemas, similar in strength and direction to that of intergenerational attachment styles. However, this study failed to report numeric descriptions of individual EMS relationships between parent and child, making interpretation difficult. The authors noted the child group scored highly on the schema Unrelenting Standards and suggested it might have something to do with Iranian parenting styles, which they characterised as commonly 'strict and demanding'. The authors suggested the inclusion of a parenting style questionnaire for future research.

Current Study

In summary, research exploring intergenerational patterns in cognition suggest a relationship between parent and child core beliefs; although the two studies specifically examining intergenerational patterns in EMSs are methodologically limited. We have argued that (1) parental practice plays an influential role in the development of EMSs (e.g. Zafiropoulou et al. 2014) and (2) parenting styles may at least be partially based on the parents' own schemas. Therefore, in the current study we test whether parental EMSs may be related to child EMSs through parenting styles.

Given the paucity of prior research in this area and to avoid over-complication of results we elected to focus only on the mother–daughter dyad in this initial study as previous research showed stronger intergenerational relationships in EMSs (Macik et al. 2016), parental practices and EMSs (Zafiropoulou et al. 2014), attachment models (Obegi et al.

2004) and in overall psychopathology (Connell and Goodman 2002) between mothers and daughters, compared to other familial dyads.

The current study, therefore, aims to partially replicate and extend the study by Macik et al. (2016) by analysing the potential mediational role of parenting styles in relationships between mother and daughter EMSs, in order to further understand the process of EMS development. Based on previous findings, and using a cross-sectional methodology, it is hypothesised that (1) there will be significant positive relationships between mother and (adult) daughter EMSs, although (given the paucity of previous research) this hypothesis is somewhat exploratory with respect to the nature of the associations which will be observed. Additionally, (2) parenting styles will be significantly associated with both mother and daughter EMSs. Specifically, authoritative parenting and high care will negatively correlate with mother and daughter EMS scores, whilst authoritarian parenting and high overprotection will positively correlate with mother and daughter EMS scores. Finally, it is hypothesised that (3) parenting styles will mediate the relationship between mother and daughter EMSs.

Method

Participants

A total of 100 women residing in Australia completed the survey, including 43 mothers and 57 daughters. Of the total participants only 41 mothers and daughters were matched pairs. The mothers' ages ranged from 44 to 88 (M = 55.74, SD = 8.75). The daughters' ages ranged from 18 to 69 (M = 26.28, SD = 9.33). All mother and daughter pairs were biologically related. Sixty-eight percent of participants identified Australia as their country of origin, 18% were from New Zealand, and the remainder originated from 14 other countries.

Measures

Participants completed a survey comprising of four published scales and basic demography questions. Both mothers and daughters completed the Young Schema Questionnaire (YSQ-S3) short form, which is an Early Maladaptive Schema inventory designed by Young and Brown (2003) that assesses 18 individual schemas across five domains:

- Disconnection/rejection: 'Abandonment/Instability', 'Mistrust/Abuse', 'Emotional Deprivation', 'Defectiveness/Shame', 'Social Isolation/Alienation'.
- Insufficient autonomy/performance: 'Dependence/Incompetence', 'Vulnerability to Harm or Illness', 'Enmeshment/Undeveloped Self', 'Failure'.
- Impaired limits: 'Entitlement/Grandiosity', 'Insufficient Self-Control and/or Self-Discipline'.
- Other Directedness: 'Subjugation', 'Self-Sacrifice', 'Approval-Seeking/Recognition-Seeking'.
- Overvigiliance/Inhibition: 'Negativity', 'Emotional Inhibition', 'Unrelenting Standards' and 'Punitiveness'.

The third edition short form, is a 90 item self-report questionnaire with a 6-point Likert scale. There are five items per schema scale, giving a possible score range of 5–30. Cronbach alpha's have been reported to range between 0.94 and 0.97 (Bayrami et al. 2012). An example of an item from this scale is "I do not feel capable of getting by on my own in everyday life." There is good evidence for the reliability and validity of the YSQ-S3 (Dobson 2009). In this study, Cronbach alpha's ranged between 0.48 and 0.91, with a mean of 0.76. The only subscale with an alpha below 0.6 was Dependence (0.48). On further inspection, this was found to be due to a single item on the scale which, when removed, raised the reliability to 0.76.

Both mothers and daughters also completed the Depression Anxiety and Stress Scale short form (DASS-21). The self-report DASS was developed by Lovibond and Lovibond (1995) and includes three subscales that measures the participant's depression, anxiety and stress. The short form contains 21 questions rated by participants on a 4-point Likert scale; higher scores indicating higher symptom levels. There are 7 items per subscale, giving a possible subscale score range of 0–21. An example of an item from this scale is "I found it hard to wind down." The DASS-21 is reported to have suitable construct validity and a Cronbach's alpha of 0.88 overall (Henry and Crawford 2005). The DASS-21 was included to enable statistical control for mood, since high scores of current distress can bias scores on the YSQ (Stopa and Waters 2005). In this study, the Cronbach alpha's for depression, anxiety and stress subscales were 0.83, 0.78 and 0.76 respectively.

In addition, the daughters completed two parenting style questionnaires. The Parental Authority Questionnaire (PAQ), and the Parental Bonding Instrument (PBI) were used to provide a multifaceted assessment of mothers' parenting attributes. The PAQ focuses on attitudes and the PBI on behaviours. The PAQ (Buri 1991) contains 30 self-report questions on a 5-point Likert scale. This measure assesses parenting on three subscales based on Baumrind's parenting styles (1991): authoritative, authoritarian, and permissive. *Authoritative* style consists of parents who set reasonable expectations and boundaries, are caring, and give sufficient attention is given to the child's needs. *Authoritarian* parenting sets unreasonable boundaries with low warmth and security; and *Permissive* has

too few boundaries, but still provides warmth. There are 10 items per subscale, giving a possible score range of 10–50. An example of an item from this scale is "As I was growing up my mother did not allow me to question any decision she made." Validity of the PAQ has been supported by psychologists and psychiatrists and test–retest reliability is reported at 0.77–0.86 for mothers, and internal reliability between 0.74 and 0.85 (Buri 1991). In this study, the Cronbach alpha's for permissive, authoritarian and authoritative subscales were 0.79, 0.92 and 0.93 respectively.

The PBI (Parker et al. 1979) is a 25 item self-report measure on a 4-point Likert scale. PBI assesses parenting as having high or low care and over-protection, in both mothers and fathers; only mother data was utilised in this study. It is considered both reliable and valid (Parker et al. 1979); with stable long-term reliability (Wilhelm and Parker 1990). The mother care subscale has 12 items with a possible range of 0–36. The mother over-protection subscale has 13 items with a possible range of 0–39. An example of an item from this scale is "[my mother] Seemed emotionally cold to me." Additionally, studies support the PBI as independent of mood (Gerlsma et al. 1993), and consistent with comparisons of independent rater interviews (Parker et al. 1979; Parker and Lipscombe 1981). In this study, the Cronbach alpha's for mother care and over-protection subscales were 0.94 and 0.78 respectively.

Procedure

Project procedures were approved by the Cairnmillar Institute Human Research Ethics Committee. The study was advertised on a flyer distributed around several universities in Melbourne as well as on Facebook, where Australian and New Zealand women 18 and over were specifically targeted. Non-dependent colleagues and friends of the researchers were also approached and invited to participate and snowball recruitment. Participants followed a web link to the Plain Language Statement and provided informed consent before completing an online survey. The mothers and daughters undertook independent questionnaires created using SurveyMonkey (San Mateo, California). Individual responses were anonymous and confidential; participants could withdraw their participation at any point during completion of the survey. In order to determine which mothers and daughters were related, but to maintain anonymity, participants created and recorded a unique code that they share only with their own mother or daughter.

Results

Screening Outliers and Testing Assumptions

All analyses were conducted in SPSS v21 (IBM corporation, Armonk, New York). The data was screened for missing values, outliers, and assumption criteria. There were three groups, daughters (n = 57), mothers (n = 43), and matched pairs (n = 41; included only mothers and daughters who were matched by code). One case in the daughter group (without a mother match) had missing values and was removed. There were no missing cases in the matched pair group. In the matched group skewness and kurtosis ranged from − 1.58 to 1.92 and − 1.20 to 5.98, respectively. However, the analyses were considered to be robust against violations of normality (Norman 2010).

Potential confounding impact of depression on relationships between other study variables was controlled for through the identification and removal of outliers (two standard deviations from the mean or more) from further analysis. This procedure led to the removal of three daughter cases. All three cases were classified by the DASS in the upper end of the category: 'extremely severe depression'; with the final mean for DASS depression being 4.42 (SD = 3.53) for mothers and 3.21 (SD = 2.82) for daughters. YSQ subscale mean scores for mothers ranged between 8.62 and 17.55 ($M = 12.39$, SD = 4.6); for daughters mean subscale scores ranged between 2.04 and 4.95 ($M = 10.23$, SD = 4.1).

Relationship Between Mother and Daughter EMSs

There were significant relationships between some mother and daughter EMSs. Pearson's product correlations are presented in Table 1. To improve readability only significant ($p < .05$) correlations are displayed. Associations between mother and daughter schemas were all positive and of medium effect size (Cohen 1992). In particular, daughters' subjugation and approval seeking schemas from the other-directness domain (a domain which groups schemas that are related to a stifling of one's own emotions and desires for others' emotions and desires) were most clearly linked to overall mothers' schemas. Whilst mothers' schemas in the disconnection/rejection domain (which groups schemas that are related to a frustration/deprivation of needs regarding love, attention, connection and acceptance) contained the largest number of associations with daughters' schema scores. In particular, mothers' abandonment and mistrust/abuse were most consistently related to daughters' schemas. In regard to a possible transference relationship (i.e. where there is concordance between mothers and daughters on an individual schema), the schemas abandonment, social isolation, enmeshment, subjugation and approval seeking, were each significantly associated between mothers and daughters.

In order to determine if these correlations were due to factors other than familial relatedness, mothers were randomly assigned to non-related daughters and the correlation analysis was re-run. There were only three significant correlations obtained. Of those, two were in a negative direction;

Table 1 Pearson's correlation coefficients between mother and daughter early maladaptive schemas

Daughters' schemas	Mothers' schemas																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DR																		
1. Abandonment	0.35																	
2. Mistrust/abuse	0.33											0.37						
3. Emotional deprivation																		
4. Defectiveness/shame																		
5. Social isolation	0.35		0.36	0.36	0.38							0.41						
IAP																		
6. Dependence																		
7. Vulnerability to harm		0.40																
8. Enmeshment							0.35	0.41*								0.34		
9. Failure																		
IL																		
10. Entitlement		0.35											0.44*					
11. Insufficient self-control																		
OD																		
12. Subjugation	0.32	0.39	0.34	0.35						0.40		0.37			0.40	0.38		
13. Self-sacrifice								0.36										
14. Approval-seeking	0.32	0.37		0.36	0.33		0.43*			0.37				0.32	0.32	0.40		
OVI																		
15. Emotional inhibition		0.32											0.39					
16. Negativity	0.36	0.42*								0.32			0.36					
17. Unrelenting standards								0.32		0.33			0.45*					
18. Punitiveness																		

$N = 39$ pairs. Mother schema numbers match to the daughter schemas on the left column. EMS domains: *DR* disconnection/rejection, *IAP* impaired autonomy/performance, *IL* impaired limits, *O-D* other-directedness, *OVI* over vigilance/inhibition. All correlations significant at $p < .05$; *$p < .01$

substantiating the meaningfulness of the relationships found in the actual data.

Relationship Between Parenting Styles and EMS

Significant associations between daughter perceptions of parenting and daughter schemas are shown in Table 2. Overall, perceived authoritative and high-care parenting styles were associated with lower levels of EMSs in daughters, whilst authoritarian, permissive and high-overprotective parenting was associated with higher EMS scores in daughters. The majority of these relationships occurred within the Disconnection/Rejection schema domain and were associated with lower authoritative parenting.

Some significant relationships were observed between mothers' schemas and parenting styles reported by daughters. Relationships were mainly observed within the disconnection/rejection domain and related to lower authoritative parenting: emotional deprivation $r(37) = -0.32$, $p < .05$; social isolation $r(37) = -0.32$, $p < .05$; emotional inhibition $r(37) = -0.50$, $p < .01$; punitiveness $r(37) = -0.33$, $p < .05$. The mothers' schema, emotional Inhibition was most strongly associated to all parenting styles, specifically with higher levels of authoritarian parenting ($r(37) = 0.39$, $p < .05$) and lower levels of authoritative ($r(37) = -0.50$, $p < .01$), permissive ($r(37) = -0.33$, $p < .05$) and high-care parenting ($r(37) = -0.45$, $p < .01$).

Parenting Styles as Mediator Between Mother and Daughter EMS Relationships

Rather than test all possible relationships, an analysis strategy for mediations based on theoretically meaningful patterns observed in the correlation matrices was considered. Correlational analyses indicated consistent relationships between authoritative parenting and schemas in the disconnection/rejection domain. As such, mediation analysis was conducted with mothers' schemas from this domain as the predictor variable, daughters' schemas from the same domain as the outcome variable, and authoritative parenting as the mediator. Daughters' subjugation schema was also included for analysis due to the similar correlations found with the disconnection/

Table 2 Pearson's correlations between parenting styles and daughter early maladaptive schemas

Daughters' schemas	Authoritarian	Authoritative	Permissive	Care	OP
DR					
1. Abandonment		−0.32			
2. Mistrust/abuse					0.30
3. Emotional deprivation		−0.48*		−0.36*	0.32
4. Defectiveness/shame		−0.39*		−0.34	0.39*
5. Social isolation		−0.38*			
IAP					
6. Dependence		−0.45*		−0.59*	0.35
7. Vulnerability to harm					0.32
8. Enmeshment	0.35*				
9. Failure		−0.30		−0.37*	0.35
IL					
10. Entitlement			0.29*		
11. Insufficient self-control					
O-D					
12. Subjugation	0.29	−0.45*		−0.30	0.43*
13. Self-sacrifice					0.35*
14. Approval-seeking					
OVI					
15. Emotional inhibition		−0.32		−0.30	
16. Negativity		−0.30			0.40*
17. Unrelenting standards					
18. Punitiveness					

$N = 53$. *OP* overprotection. EMS Domains: *DR* disconnection/rejection, *IAP* impaired autonomy/performance, *IL* impaired limits, *OD* other-directedness, *OVI* over vigilance/inhibition

All correlations significant at $p < .05$; *$p < .01$

rejection domain and authoritative parenting. Nonparametric bootstrapping was used to test these relationships as recommended for small samples (Preacher and Hayes 2004). Analysis was undertaken using Process version 16.3 in SPSS.

Based on 10,000 bootstrapped samples the results indicated that the mothers' Emotional Deprivation schema indirectly predicted daughters' defectiveness/shame schema through its effect on authoritative parenting (unstandardised indirect effect = 0.112). This relationship was considered significant at $p < .05$ as the 95% bias corrected confidence intervals for the indirect effect did not capture zero (0.001–0.415). However, the r-squared effect size was not statistically significant, $r^2 = 0.015$, 95% BC CI [−.019, 0.217], as such it cannot be confidently concluded that the indirect effect was greater than zero or 'no effect'. Authoritative parenting did not significantly mediate any of the other selected mother and daughter schema pairings.

Discussion

Dysfunctional core beliefs, arising from negative developmental experiences, have been implicated as mediatory pathways to mental health problems in adulthood, including anxiety, depression and personality disorders (Carr and Francis 2009, 2010; Cukor and McGinn 2006; McGinn et al. 2005). Whilst there is good evidence for an influence of poor parenting and early abuse on the development of EMSs (e.g. Carr and Francis 2010; Zafiropoulou et al. 2014), there has been little exploration of the impact of parental EMSs themselves on child schema development. Therefore the purpose of this study, using cross-sectional methodology, was to evaluate relationships between mother and daughter EMSs, and the potential mediating influence of parenting styles in these relationships. Our

study has extended previous research on intergenerational transfer of schemas by including parenting style measures, testing for mediation, and involving English-speaking participants.

Supporting the first hypothesis, mother EMSs predicted daughter EMSs in conceptually meaningful patterns. The nature of these relationships are discussed further. The second hypothesis was partially supported insofar as, in accord with previous research, 'negative' maternal parenting styles predicted higher levels of EMSs in their daughters. Mothers' EMSs also correlated with their own parenting style (as reported by their daughters), although these relationships were few in number; thus partially supporting the second hypothesis. There was insufficient evidence to confidently confirm the third hypothesis of a mediational role for parenting styles in the relationships between mother and daughter schemas.

The Relationship Between Mother and Daughter EMSs

Conceptually meaningful relationships were observed between mother and daughter EMSs. Mother schemas representing all domains were significantly associated with higher levels of daughter other-directedness (OD) domain schemas. This broad-based 'response' of daughter OD schemas to elevated mother schemas accords with suggestions by Young et al. (2006) that typically a child's status in the family is based on 'conditional acceptance' in which the child seeks approval and subjugates their own needs to that of the most important significant other in their life. This imperative is, perhaps, more acutely felt and responded to when the significant other expresses higher levels of an EMS. Also apparent from the correlation matrix is the broadly-based 'response' of daughter schema domains to mother disconnection/rejection (DR) domain schemas; suggesting that mother schemas from the DR domain may be more influential compared to others. Again, this may be expectable given the elements of withholding, abusive, cold and rejecting family origin characterising the DR domain (Young et al. 2006). However, whilst EMSs are formed in childhood, and it can therefore be assumed that mother schema development precedes that of their daughters, these associative relationships do not confirm the causal pathway characterised here as a 'response' of daughter schemas to mother schemas. Indeed, it would also be expected that ongoing reciprocal interactions between mother and daughter schemas would continue to occur throughout development and adulthood; potentially further complicating interpretation here.

Of the four early life experiences that are contended to lead to the development of schemas, the theorised process of 'selective internalisation' involves an identification with parent characteristics and might be expected to lead to schema concordance. For this experience, Young and colleagues (2006) give an example of spousal abuse and the possibility of a witnessing child identifying and internalising either the abusive parent's aggression or the other parent's victimisation; in the latter case, leading to the child feeling like a victim themselves. Consistent with this contention, a range of specific schemas were observed to be significantly concordant between mothers and daughters. More broadly, and perhaps more consistently, there were also concordances across schema domains; in particular across the disconnection-rejection domain.

There are clear differences between our own findings and those of Macik et al. (2016). For example, in that study mother schemas of vulnerability to harm, failure, punitiveness and defectiveness/shame quite strongly predicted higher levels of a broad range of maladaptive schemas in their daughters. Additionally, several mother schemas predicted *lower* scores in daughter schemas. These patterns did not appear in our results and no schemas were as strongly correlated or were of a negative direction. Despite the similar age demographics for mothers and daughters between the two studies (notwithstanding an outlier 69 year old daughter in our own sample), there are multiple methodological inconsistencies between the Macik et al. (2016) study and our own that complicate meaningful comparison. For example, the researchers did not account for the possible impact of current emotional distress (e.g. depression) on other variables and relationships, they provided no descriptive statistics, and involved a sample almost half the size of that for the current study. In addition, there are possibly cultural variations between Poland and Australia which could have some influence on family dynamics and mother–daughter relationships. Well-controlled, cross-cultural research is needed to ascertain the basis for these variations between studies.

The Role of Parenting Styles

The role of parenting styles in schema development was assessed in relation to mother and daughter schemas, and in a mediational model. There was support for the hypothesis that lower levels of Care and Authoritative parenting from mothers would be associated with higher levels of EMSs in daughters. Also as expected, higher levels of Authoritarian and Overprotective parenting predicted higher EMSs in daughters. Most daughter EMSs were related to one or more parenting styles, and these findings align well with previous research (e.g. Leung et al. 2000; Harris and Curtin 2002).

There was limited support for the hypothesis that mother schemas would predict their own parenting styles (as reported by their daughters). Although the directions of the relationships were as predicted, only mother schemas of Emotional deprivation, social isolation, emotional inhibition, and punitiveness were significantly associated with

their own parenting style. Whilst preliminary, these results suggest most parenting styles (at least those assessed here) may be relatively independent of mother EMS, i.e. that early schemas show little relationship to parenting styles. Nonetheless, in the relationships that were significant, low levels of mother EMSs predicted an authoritative parenting style, and most of the relationships occurred within the disconnection/rejection domain. The schema emotional inhibition was also significantly associated with most parenting styles which might suggest that the parenting style one adopts is more related to emotional expressivity than schematic beliefs.

Evidence for parenting styles acting as a mediator between mother and daughter EMSs was limited. Only schemas in the disconnection/rejection domain (with the addition of subjugation) and authoritative parenting were analysed for mediation, based on correlational themes observed. The influence of mother emotional deprivation on daughters' defectiveness/shame through authoritative parenting was small and confidence intervals for the unstandardised indirect effect, whilst indicating mediation, came close to zero. No other combination of schemas tested were significantly mediated by authoritative parenting.

Summary of Limitations and Future Directions

An important limitation of the current study is the cross-sectional design, which precludes causal conclusions. Whilst it might be argued that the presence of parental EMSs must necessarily precede and thus influence the development of child EMSs, future research should confirm these findings with longitudinal designs. Additionally, given the relatively small and exclusively female sample, these results should be considered preliminary.

The parent–child relationship is very complicated and 'parenting styles' do not fully represent this relationship. There are additional factors that this study did not take into account such as: perception of closeness, attachment, temperament, generational differences, and history of stressful life events (Grusec 2011). It is recommended future research include additional and alternate variables. To further understand processes of schema transmission a measure of temperament is recommended. It may also be beneficial for future research to utilise a mixed-methods approach to explore in greater depth potential mediators of schema transmission between generations. Moreover, the assessment of parenting styles was subjective. Our sample involved daughters who were aged 18–69 and may vary in their ability to accurately recall childhood, although other studies with similarly aged samples would argue for the reliability of such retrospective reports (e.g. McGinn et al. 2005). It is recommended this study be replicated and expanded to include the influence of other significant family members and gender comparisons.

Conclusions and Implications

Evidence for meaningful, intergenerational associations between mother and daughter EMSs reported here further support theoretical frames and empirical research indicating long-lasting impacts of the early psychosocial environment on developing cognitive structures, through to adulthood. The current results (whilst tempered by the use of a cross-sectional design) would suggest that the mother's own core beliefs, as well as her parenting style, are potentially influential.

Our finding of expected relationships between maternal parenting style and EMSs in daughters is consistent with previous studies, and supports basic premises of Young's schema theory (Young et al. 2006). We have also presented evidence, though limited, for an association between maternal parenting styles and the mother's own core beliefs—a relatively unexplored association, and potentially heuristic for further study and theoretical modelling in this area. Although the hypothesis that parenting style would mediate the relationship between mother and daughter schemas was not supported here the meaningful patterns of intergenerational EMS association observed argue for further testing utilising larger samples and alternate family-related variables as mediators or moderators.

The important role of mother schemas from the disconnection-rejection domain as potential predictors for broadly-based EMS development in daughters is highlighted here, and provides new directions for study and clinical practice. However, the current findings require corroboration, preferably utilising longitudinal designs.

Maladaptive core beliefs represent an ongoing detrimental impact on the mental health of individuals. In highlighting the possible intergenerational sources of maladaptive core beliefs, this research may open new avenues of therapist–client dialogue. Through the collection of family history on parenting styles and possible parental schemas, clinicians may be better informed to assist clients in understanding the origins of debilitating thought processes, toward deconstructing these beliefs and removing cognitive obstacles.

Compliance with Ethical Standards

Conflict of interest Madeline Gibson and Andrew J.P. Francis declare that they have no conflict of interest.

Informed Consent All procedures performed were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Animal Rights No animal studies were carried out by the authors for this article.

References

Baumrind, D. (1991). Parenting styles and adolescent development. *The Encyclopedia of Adolescence, 2*, 746–758.

Bayrami, M., Bakhshipor, A., & Esmaeili, A. (2012). The relationship between coping styles and early maladaptive schemas in disconnection-rejection and over vigilance-inhibition in young's schema model. *Journal of Life Science and Biomedicine, 2*(4), 178–181.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Harper & Row.

Beigi, N. A., & Askari, H. (2016). Interaction of parent-child schemas in different types of personality disorders. *International Journal of Advanced Biotechnology and Research, 7*(4), 1039–1046.

Besser, A., & Priel, B. (2005). The apple does not fall far from the tree: Attachment styles and personality vulnerabilities to depression in three generations of women. *Personality and Social Psychology Bulletin, 31*(8), 1052–1073.

Bowlby, J. (1973). *Attachment and loss, Vol. II, Separation: Anxiety and anger*. New York: Basic Books.

Brody, G. H., Moore, K., & Glei, D. (1994). Family processes during adolescence as predictors of parent-young adult attitude similarity. *Family Relations, 43*(4), 369–373.

Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment, 57*(1), 110–119.

Carr, S., & Francis, A. (2009). Childhood familial environment, maltreatment and borderline personality disorder symptoms in a non-clinical sample: A cognitive behavioural perspective. *Clinical Psychologist, 13*(1), 28–37.

Carr, S. N., & Francis, A. J. P. (2010). Do early maladaptive schemas mediate the relationship between childhood experiences and avoidant personality disorder features? A preliminary investigation in a non-clinical sample. *Cognitive Therapy Research, 34*(4), 343–358.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155.

Connell, A. M., & Goodman, S. H. (2002). The association between psychopathology in fathers versus mothers and children's internalizing and externalizing behavior problems: A meta-analysis. *Psychological Bulletin, 128*, 746–773. https://doi.org/10.1037//0033-2909.128.5.746.

Cook, W. L. (2000). Understanding attachment security in family context. *Journal of Personality and Social Psychology, 78*(2), 285.

Cukor, D., & McGinn, L. K. (2006). History of child abuse and severity of adult depression: The mediating role of cognitive schema. *Journal of Child Sexual Abuse, 15*(3), 19–34.

Dobson, K. S. (Ed.). (2009). *Handbook of cognitive-behavioral therapies*. New York: Guilford Press.

Gerlsma, C., Das, J., & Emmelkamp, P. M. (1993). Depressed patients' parental representations: Stability across changes in depressed mood and specificity across diagnoses. *Journal of Affective Disorders, 27*(3), 173–181.

Grusec, J. E. (2011). Socialization processes in the family: Social and emotional development. *Annual Review of Psychology, 62*, 243–269.

Harris, E., & Curtin, L. (2002). Parental perceptions, early maladaptive schemas, and depressive symptoms in young adults. *Cognitive Therapy and Research, 26*(3), 405–416.

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): Construct validity and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 44*(2), 227–239.

Jones, J. D., Cassidy, J., & Shaver, P. R. (2015). Parents' self-reported attachment styles a review of links with parenting behaviors, emotions, and cognitions. *Personality and Social Psychology Review, 19*(1), 44–76.

Jovev, M., & Jackson, H. J. (2004). Early maladaptive schemas in personality disordered individuals. *Journal of Personality Disorders, 18*(5), 467–478.

Kilmann, P. R., Vendemia, J. M., Parnell, M. M., & Urbaniak, G. C. (2009). Parent characteristics linked with daughter's attachment styles. *Adolescence, 44*(175), 557.

Kooraneh, A. E., & Amirsardari, L. (2015). Predicting early maladaptive schemas using Baumrind's parenting styles. *Iranian Journal of Psychiatry and Behavioral Sciences, 9*(2), e:952. https://doi.org/10.17795/ijpbs952.

Leung, N., Thomas, G., & Waller, G. (2000). The relationship between parental bonding and core beliefs in anorexic and bulimic women. *British Journal of Clinical Psychology, 39*(2), 205–213.

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy, 33*(3), 335–343.

Maccoby, E. E. (1992). The role of parents in the socialization of children: A historical overview. *Developmental Psychology, 28*(6), 1006.

Maccoby, E. E. (2015). Historical overview of socialisation research and theory. In J. E. Grusec & P. D. Hastings, *Handbook of socialization: Theory and research*. New York: Guilford Publications.

Macik, D., Chodkiewicz, J., & Bielicka, D. (2016). Trans-generational transfer of early maladaptive schemas—A preliminary study performed on a non-clinical group. *Personality Psychology, 4*(3), 132–145.

McGinn, L. K., Cukor, D., & Sanderson, W. C. (2005). The relationship between parenting style, cognitive style, and anxiety and depression: Does increased early adversity influence symptom severity through the mediating role of cognitive style? *Cognitive Therapy and Research, 29*(2), 219–242.

Mikulincer, M., & Florian, V. (1999). The association between parental reports of attachment style and family dynamics, and offspring's reports of adult attachment style. *Family Process, 38*(2), 243–257.

Muris, P. (2006). Maladaptive schemas in non-clinical adolescents: Relations to perceived parental rearing behaviours, big five personality factors and psychopathological symptoms. *Clinical Psychology & Psychotherapy, 13*(6), 405–413.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education, 15*(5), 625–632.

Obegi, J. H., Morrison, T. L., & Shaver, P. R. (2004). Exploring intergenerational transmission of attachment style in young female adults and their mothers. *Journal of Social and Personal Relationships, 21*(5), 625–638.

Parker, G., & Lipscombe, P. (1981). Influences of maternal overprotection. *The British Journal of Psychiatry, 138*(4), 303–311.

Parker, G., Tupling, H., & Brown, L. B. (1979). A parental bonding instrument. *Psychology and Psychotherapy: Theory, Research and Practice, 52*(1), 1–10.

Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge & Kegan Paul.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*(4), 717–731.

Riso, L. P., Froman, S. E., Raouf, M., Gable, P., Maddux, R. E., Turini-Santorelli, N., … Cherry, M. (2006). The long-term stability of early maladaptive schemas. *Cognitive Therapy and Research, 30*(4), 515–529.

Shah, R., & Waller, G. (2000). Parental style and vulnerability to depression: The role of core beliefs. *The Journal of Nervous and Mental Disease, 188*(1), 19–25.

Specht, M. W., Chapman, A., & Cellucci, T. (2009). Schemas and borderline personality disorder symptoms in incarcerated women.

Journal of Behavior Therapy and Experimental Psychiatry, 40(2), 256–264.

Stopa, L., & Waters, A. (2005). The effect of mood on responses to the Young Schema Questionnaire: Short form. *Psychology and Psychotherapy: Theory, Research and Practice, 78*(1), 45–57.

Thimm, J. C. (2010). Mediation of early maladaptive schemas between perceptions of parental rearing style and personality disorder symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 41*(1), 52–59.

Turner, H. M., Rose, K. S., & Cooper, M. J. (2005). Schema and parental bonding in overweight and non-overweight female adolescents. *International Journal of Obesity, 29*(4), 381–387.

van Ijzendoorn, M. H. (1992). Intergenerational transmission of parenting: A review of studies in non-clinical populations. *Developmental Review, 12*(1), 76–99.

Wilhelm, K., & Parker, G. (1990). Reliability of the parental bonding instrument and intimate bond measure scales. *Australian & New Zealand Journal of Psychiatry, 24*(2), 199–202.

Wright, M. O. D., Crawford, E., & Del Castillo, D. (2009). Childhood emotional maltreatment and later psychological distress among college students: The mediating role of maladaptive schemas. *Child Abuse & Neglect, 33*(1), 59–68.

Young, J. E. (2012). *Early maladaptive schemas*. Retrieved 2017, from http://www.schematherapy.com/id73.htm.

Young, J. E., & Brown, G. (1994). Young schema questionnaire. In *Cognitive therapy for personality disorders: A schema-focused approach* (pp. 63–76). (Rev. ed., pp. 63–76). Sarasota: Professional Resource Exchange.

Young, J. E., & Brown, G. (2003). *Young Schema Questionnaire—Short Form*. Retrieved 2017, from http://www.schematherapy.com/id53.htm.

Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A practitioner's guide*. New York: Guilford Press.

Zafiropoulou, M., Avagianou, P. A., & Vassiliadou, S. (2014). Parental bonding and early maladaptive schemas. *Journal of Psychological Abnormalities, 3*(1), 1–6. https://doi.org/10.4172/2329-9525.1000110.