Associations between early maladaptive schema domains of parents and their adult children: The role of defence styles

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Abstract
Although existing research recognized the associations between early maladaptive schemas (EMSs) of parents and their adult children, the mechanisms that underpin these associations were not fully understood. Therefore, the purpose of the current study was to explore the role of defence styles (DSs) on the associations between two EMS domains (Disconnection/Rejection and Impaired Autonomy) of parents and their adult children. Two hundred and fifteen families (i.e., mother, father, and their adult children) participated in the study. Both parents and their adult children were asked to complete Young Schema Questionnaire-Short Form (YSQ-SF) and Defence Style Questionnaire (DSQ) to assess their EMS domains and DSs. According to the results of the current study, there were significant associations between Disconnection/Rejection and Impaired Autonomy EMS domains of parents and their adult children, and these associations were mediated by only immature DS of parents and their adult children in a serial mediation model. These results contributed to our understanding of the associations between EMS domains of parents and their adult children through immature DSs. Moreover, our findings highlighted the importance of synthesizing the concepts of different theories to enhance our understanding of mental representations in families.

KEYWORDS
defence styles, disconnection/rejection, early maladaptive schemas, immature defence style, impaired autonomy, neurotic defence style

1 | ASSOCIATIONS BETWEEN EARLY MALADAPTIVE SCHEMA DOMAINS OF PARENTS AND THEIR ADULT CHILDREN: THE ROLE OF DEFENCE STYLES

Over the past century, with the pioneering work of the theoreticians such as Klein (1980), Winnicott (1965), Kernberg (1975), Sullivan (1954), and Kohut (1971), the importance of the relationships between self and others on personality organization rather than biological drives has come into prominence in psychoanalytic theory. In contrast to differentiating features, their theories (e.g., object relations theory, interpersonal theory, and self-psychology theory) have shared common aspects which focus on interpersonal relationships, internalization of these relationships as mental representations, and the influence of these mental representations on the perceptions of self, others, and relationships (Glickauf-Hughes et al., 1996). All these theoreticians recognized the significance of early experiences in the formation of mental representations, asserting that sensitive, affirming, responsive, and predictable interactions with children ensure the development of healthy and adaptive representations. On the other hand, they would become disturbed and dysfunctional as a result of cold, unpredictable, unresponsive, and abusive interactional patterns (Edwards & Arntz, 2012).

The main assumptions of the mentioned theories regarding to mental representations are similar to those of schema theory which is influenced by psychodynamic theorizing (Young et al., 2003). In
schema theory, “early maladaptive schemas (EMSs)”, which are defined as dysfunctional emotional and cognitive representations developed in childhood/adolescence, determine how we think, feel, and respond to our environment and they are triggered by life events that remind conditions contributing to the development of EMSs (Young et al., 2003). When they become active, strong negative emotions such as anger, fear, and anxiety are evoked, and in severe cases, they underlie in the development and maintenance of psychological disorders such as depressive disorders (Calvete et al., 2005; Halvorsen et al., 2010; Renner et al., 2012), anxiety disorders (Calvete et al., 2015; Kwak & Lee, 2015; Pinto-Gouveia et al., 2006), and personality disorders (Jovev & Jackson, 2004; Nordahl et al., 2005; Petrocelli et al., 2001; Shorey et al., 2013). In schema theory, 18 EMSs (e.g., abandonment/instability, vulnerability to harm and illness, dependence/incompetence, and emotional deprivation) are classified into five EMS domains according to related unmet core emotional needs: Disconnection/Rejection, Impaired Autonomy, Impaired Limits, Other-directedness, and Overvigilance and Inhibition.

1.1 Associations between EMSs of parents and their children

In addition to early negative life experiences and emotional temperament, EMSs develop as a result of unmet core emotional needs including secure attachment, autonomy, freedom to express needs and emotions, spontaneity, and realistic limits (Young et al., 2003). Moreover, it is emphasized that parents have an important role in fulfilling the core emotional needs of their children (Young et al., 2003). Although several studies investigated the role of parents (Harris & Curtin, 2002; Zafropoulou et al., 2014) in the development of EMSs, very little is currently known about the associations between EMSs of parents and their children. For example, one study (Mack et al., 2016) examined the relationships between EMSs of parents and their adult daughters and sons. They found that although EMSs of mothers such as defectiveness and vulnerability to harm and illness and EMSs of fathers such as defectiveness and self-sacrifice were associated with EMSs of their daughters, pessimism EMSs of mothers and vulnerability to harm and illness EMS of fathers were associated with EMSs of their sons. Despite the fact that it was a comprehensive study investigating all of EMSs within families, the sample size of the study was quite low for the generalizability of the results. In another study, Beigi and Askari (2016) examined 50 patients with personality disorders and their parents in terms of their EMSs and they reported that EMSs of parents predicted EMSs of their adult children such as emotional deprivation, vulnerability to harm and illness, and defectiveness. However, there were some inadequacies related to reporting of the statistical analysis (e.g., lack of correlations and coefficients) in the study, which makes it difficult to interpret the results.

Moreover, a few studies have investigated through which mechanisms parents’ EMSs lead to their children’s EMSs. Sundag et al. (2018) analysed the data from 60 dyads of parents and their adult children and concluded that there were significant associations between EMSs of parents and their adult children, which are also mediated through overcompensation coping style of parents and perceived adverse parenting of their adult children. In another study, Gibson and Francis (2019) examined the mediator role of parenting style on the intergenerational transfer of EMSs using 39 mother–adult daughter dyads. Despite significant associations between EMSs of mothers and their adult daughters, the mediator role of parenting style was not found to be significant. They concluded that in addition to parenting styles, there might be some other factors explaining the transmission of EMS, suggesting a replication of the study with additional and alternative variables. More recently, Zeynel and Uzer (2020) recruited data from 179 mother–late adolescent child dyads and they found that when father involvement was low in child-rearing practices, adverse childhood experiences mediated the relationship between EMSs in Disconnection/Rejection domain of mothers and their late adolescent children. Although those studies investigated the associations between EMSs of parents and their adult children and possible mediating or moderating variables, there is still very little scientific understanding of the contributing factors that might explain these associations.

Schema theory is an integrative theory that combines principles of several psychological theories and therapy models (i.e., cognitive–behavioural, Gestalt, attachment, object relations, constructivist, and psychoanalytic schools), and the concepts of schema theory and psychodynamic theory are frequently noted to be interrelated (Edwards & Arntz, 2012). However, there are relatively few studies examining those relationships (e.g., Jacobs et al., 2019). Therefore, in

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**Key Practitioner Message**

- Disconnection/Rejection and Impaired Autonomy EMS domains of parents are associated with the same EMS domains of their adult children.
- Immature DSs of parents and their adult children mediate the associations between Disconnection/Rejection and Impaired Autonomy EMS domains of parents and their adult children.
- EMSs and immature DS of parents may prevent their children from fulfilling the core emotional needs, probably leading to developing immature defense style and schemas.
- Schema therapy interventions that benefit the entire family system and focus on both EMSs and DSs can improve the psychological functioning of children.
- Synthesizing the concepts of different theories enhances our understanding of mental representations in families.
the current study, we aimed to investigate the mediator role of a psychodynamic concept (i.e., defence styles) in contributing to the associations between EMSs of parents and their adult children.

1.2 EMSs and defence styles of parents and their children

Defence mechanisms are defined as unconscious mental processes protecting individuals from excessive emotional states triggered by external and internal sources (Cramer, 1998, 2000). These mechanisms arise in response to sudden psychic danger and conflict and help individuals to regulate cognitive, emotional, and physiological responses to threat (Cramer, 2015). Based on their contribution to the psychological functioning and adaptation, in the frequently used self-rated instruments, they are classified into three defence styles (DSs), namely, immature, neurotic, and mature (Andrews et al., 1993). Although mature DS (a cluster of defence mechanisms such as suppression, sublimation, and humour) allows awareness of psychological states and protects psychological integrity, immature (a cluster of defence mechanisms such as projection, denial, and rationalization) and neurotic DSs (a cluster of defence mechanisms such as displacement, reaction formation, intellectualization) distort the perceptions of self, others, and the environment and result in long-term problems in biopsychosocial functioning (Cramer, 2015).

In contrast to extensive theoretical background and empirical research in psychoanalytic theory, far too little attention has been paid to DSs in schema theory. Walburg and Chiaramello (2015) reported that whereas Disconnection/Rejection, Impaired Autonomy, and Impaired Limits EMS domains predicted the use of immature DS, Other-directedness and Overvigilance and Inhibition EMS domains predicted the use of neurotic DS, respectively. Moreover, in attachment theory, which emphasizes the role of internal working models of the self and others (Bartholomew & Horowitz, 1991; Bowlby, 1973), attachment style is recognized to be an antecedent to DSs (e.g., Besharat & Khajavi, 2013; Laczkovics et al., 2020) in determining effects of the parental behaviour. More specifically, according to the study conducted with abusive parents (Cramer & Kelly, 2010), it was reported that the preoccupied, fearful, and dismissive attachment style of parents was associated with excessive use of denial, identification, and projection defence mechanisms, respectively. Moreover, the authors suggested that parents’ identification with their punitive parents results in abusive behaviours towards their children; excessive use of denial leads to underestimating the harm that they caused to their children, and projection provides a justification for their abusive behaviours (Cramer & Kelly, 2010). Additionally, Porcerelli et al. (2016) found that disavowal defensive functioning of parents, which corresponds to immature DS in self-rated DS instruments, was linked to ignorance of the needs of toddlers and thus being unable to respond to their proximity seeking behaviours consistently. Specifically, the researchers reported that mothers frequently using defence mechanisms such as denial, projection, and rationalization were inclined to deny the emotional needs of their children, unable to offer emotional support after separation, and attribute evil intentions to the reactions of their children (Porcerelli et al., 2016). Moreover, a recent work investigating the effect of maternal self-critical and dependent personality structures on mother–child interaction suggested that self-critical mothers were staying more disconnected from their children due to perceiving the infant as a threat to their independent self and that dependent mothers displayed excessive emotional responsiveness due to their own neediness to emotional supplies (Beebe & Lachmann, 2017). Furthermore, during the period of adolescence, whereas self-critical mothers interacted with their children punitively, dependent mothers related to them by impeding their autonomy (Thompson & Zuroff, 1998). Although the role of defence mechanisms was not directly investigated in these studies, the behavioural pattern of the self-critical and dependent parents towards their children quite is likely to overlap with the characteristic of defence mechanisms depicted in the Blatt’s (1974, 2008) model of personality focusing on self-criticism and dependency personality dimensions. Given that EMSs (Walburg & Chiaramello, 2015), attachment styles (Cramer & Kelly, 2010), and self-criticism and dependency personality structure predict the use of immature and neurotic DSs which are associated with the quality of the parenting practises (Cramer & Kelly, 2010; Porcerelli et al., 2016), the maturity of DSs might be a factor explaining the associations between EMSs of the parents and their children.

Due to the fact that there is an interest in psychoanalytic theories in terms of shifting from one-person psychology to two-person psychology (Blatt, 2008), in addition to DSs of parents, it is important to examine DSs of children to be able to understand their manner of responding to unmet needs. For instance, Kohut (1971), within the theory of self-psychology, suggested that intrapsychic structures are formed as a result of “transmuting internalization” which is defined as the internalization of the pieces of the selfobject (a function of caregiver) after they are changed and reassembled by children (Baker & Baker, 1987). More specifically, it is asserted that psychological survival of children is ensured in the presence of empathically responsive selfobjects who meet mirroring (feelings of being admired), idealization (forming idealized images of others), and twinnship (feelings of similarity and connectedness to family) needs. However, the repeated failures of caregivers in empathic responsiveness are reciprocated by their children with either chronic hunger for selfobject experiences or denial of the needs and avoiding selfobject experiences (Kohut & Wolf, 1978). That is, when parents fail to fulfill selfobject needs, children do not only passively internalize selfobject experiences but also develop a way of responding which may imprison themselves to the disorders of self throughout the lifespan (Banai et al., 2005). In this way, it might be assumed that defensive way of children in wading off their anxiety might have an influence on not only developing but also maintaining EMSs. A few empirical studies supported this assumption thoroughly. For instance, Tondar et al. (2017) found that immature DS was a predictor of self-criticism, whilst neurotic DS was a predictor of dependency in adults. Moreover, in the study conducted by Campos et al. (2011), both self-criticism and dependency were predicted by “turning against self” defences which correspond
to directing aggressive impulses towards the self. Although it is clear that representational world emphasizing self-criticism or dependency have their origins in the early years of life, DSs maintain their presence through the life span (Blatt, 2008). Additionally, Weinstock (1967) suggested that the use of denial, repression, projection, and displacement is associated with modelling parental behaviour such as indifference to stress and avoidance of conflict, feelings of inadequacy and immature behaviour, brutality, and restrictive behaviours, respectively. Another study also supported these findings by reporting positive correlations between psychological and defensive functioning of mothers and their children (Wolmer et al., 2001). That is, the way of responding might be influenced by parental behaviours and parental defensive patterns. Based on these findings, it is difficult to draw conclusions about the role of DS on the development of EMSs in childhood. However, due to the fact that DSs are emphasized to be related to schema coping styles which leads to perpetuation of EMS from childhood to adulthood (Dadomo et al., 2016; Jacobs et al., 2019) and are predictors of representational world emphasizing self-criticism or dependency in the adulthood (Campos et al., 2011; Tondar et al., 2017), they may at least play a role on perpetuating EMSs throughout the lifespan after they are acquired as a result of the negative interactions with the caregivers.

In sum, although it is well documented across several theories that mental representations of parents and their children are associated (Sundag et al., 2018; Thompson & Zuroff, 1998; Wolmer et al., 2001), the factors explaining these associations have not defined clearly yet. However, the literature suggests that parental mental representations give rise to behaving defensively in the interactions with children (Besharat & Khajavi, 2013; Lazkovics et al., 2020) and those defences not only result in unmet needs of their children but also are modelled by their children as a way of warding off anxiety (Weinstock, 1967). Furthermore, on the one hand, the defences help children cope with negative feelings in childhood; on the other hand, they do it at the cost of unmet needs and disorders of the self throughout life (Banai et al., 2005). Therefore, it is possible that DSs of both parents and their adult children play a role in the associations between EMSs of parents and their adult children.

1.3 | Current study

All in all, although some research has been carried out on the factors playing role in the associations between EMSs of parents and their adult children (Gibson & Francis, 2019; Sunday et al., 2018; Zeynel & Uzer, 2020); prior research to date has not yet determined the mediator role of DSs on these associations. Thus, the purpose of the present study was to investigate the mediator role of immature and neurotic DSs of parents and their adult children on the associations between EMS domains of parents and their adult children in a serial mediation model. Given that immature and neurotic DSs of children were affected by parental care, control, and autonomy (Besharat & Khajavi, 2013; Finzi-Dottan & Karu, 2006; Lindblom et al., 2016), their mediator role was examined by including Disconnection/Rejection and Impaired Autonomy EMS domains, which were associated with emotionally depriving and controlling parenting (Haugh et al., 2017). The importance and originality of this study are that it explores, for the first time, the role of a psychodynamic concept on the associations between EMS domains of parents and their adult children by using a relatively large sample size and taking not only maternal but also paternal factors into account respectively.

2 | METHODS

2.1 | Participants

The data were collected from 215 families (i.e., mother, father, and their adult children) living in different cities located in Turkey. Adult children consisted of 149 females and 66 males. The ages of adult children were ranged from 18 to 38 years (M = 20.82 SD = 2.71), the ages of mothers were ranged from 37 to 71 years (M = 48.38 SD = 5.15), and the ages of fathers were ranged from 38 to 71 years (M = 52.08 SD = 5.55). All adult children were university graduates or above. Amongst mothers, 33 (15.5%) were primary school graduates, 21 (9.9%) were secondary school graduates, 75 (35.2%) were high school graduates, and 72 (38.5%) were university graduates or above. Amongst fathers, 11 (5.2%) were primary school graduates, 23 (10.8%) were secondary school graduates, 53 (24.9%) were high school graduates, and 123 (57.7%) were university graduates above.

2.2 | Measures

2.2.1 | Young Schema questionnaire-short form 3

The Young Schema questionnaire-short form 3 (YSQ-SF3) is a self-report questionnaire developed by Young (2005) in order to assess EMSs. The scale includes 90 items rated on a 6-point scale ranging from 1 (“completely untrue of me”) to 6 (“describes me perfectly”), corresponding to 18 EMSs and 5 EMS domains. The Turkish adaptation study demonstrated adequate validity and reliability of the scale in an adult sample and confirmed its factor structure as follows: 14 EMSs and 5 EMS domains: Disconnection/Rejection (emotional deprivation, emotional inhibition, social isolation/mistrust, and defectiveness), Impaired Autonomy (enmeshment/dependence, abandonment, failure, pessimism, and vulnerability to harm); Unrelenting Standards (unrelenting standards and approval seeking), Other-directedness (self-sacrifice and punitiveness), and Impaired Limits (entitlement/insufficient self-control) (Soygüt et al., 2009). Cronbach’s alpha coefficients were 0.76 for Disconnection/Rejection, 0.81 for Impaired Autonomy, 0.53 for Unrelenting Standards, and 0.60 for Other-directedness. In the present study, Cronbach’s alpha coefficients were 0.88 for Disconnection/Rejection and 0.89 for Impaired Autonomy EMS domains. Both parents and their adult children completed the YSQ-SF3.
2.2.2 | Defence style questionnaire

The defence style questionnaire (DSQ-40) is a self-report questionnaire developed by Andrews et al. (1993) to assess DSs of the individuals. The scale consists of 40 items rated on a 9-point scale ranging from 1 ("strongly disagree") to 9 ("strongly agree") and yields scores of 20 defence mechanisms. These defence mechanisms are also categorized into three DSs, namely, mature, neurotic, and immature. The Turkish adaptation of the DSQ-40 conducted by Yılmaz et al. (2007) supported its three-factor structure: Mature (sublimation, humour, anticipation, and suppression), neurotic (undoing, pseudo-altruism, idealization, and reaction formation), and immature DS (acting out, denial, devaluation, displacement, dissociation, autistic fantasy, isolation, passive aggression, projection, rationalization, somatization, and splitting). In the Turkish adaptation study, Cronbach's alpha coefficients were 0.70 for mature, 0.61 for neurotic, and 0.83 for immature DS. Cronbach's alpha coefficients were found to be 0.84 for immature and 0.61 for neurotic DS in the present study. Both parents and their adult children completed the DSQ-40.

2.3 | Procedure

The study was approved by Başkent University Scientific Research and Application Ethics Committee. Snowball sampling was used to recruit adult children participants. Three questionnaire sets were provided for each adult child, mother, and father triads. Adult children were asked to complete the questionnaire and to deliver their parents other two questionnaires which were provided in an envelope. They were asked to return the questionnaires in the same way to the research team after the completion. A total of 285 questionnaire sets were distributed, and 215 of them were able to be received by researchers. All participants were informed about the aim of the study with informed consent. Also, it was made clear to participants that their participation would be on a voluntary basis and no payment or award would be provided to them.

2.4 | Data analysis

First, Pearson correlation analysis was used to examine the associations between EMS domains (i.e., Disconnection/Rejection and Impaired Autonomy) and DSs (i.e., immature and neurotic) of parents and their adult children. Second, in order to test the mediation models, a series of serial multiple mediator analyses (Model 6) was conducted using the PROCESS macro for SPSS (Hayes, 2018). EMS domains of parents were entered into the model as the independent variable, EMS domains of their adult children as the dependent variable, and DSs of parents and their adult children as the serial mediators, respectively. In the analyses, 2,000 bootstrap resamples, and 95% percentile confidence intervals (CI) were utilized. According to this procedure, if the values of CI do not include zero, the indirect effect is significant (Hayes, 2018). In all of the analyses, we adjusted for the effect of the age difference between parents and children and reported the standardized values.

3 | RESULTS

3.1 | Descriptive and bivariate analyses

To estimate correlation coefficients amongst the study variables, a correlation analysis was conducted. The results are presented in Table 1.

3.2 | Serial multiple mediator models

Considering significant correlations, eight serial mediation analyses were conducted using mother-child and father-child dyads to examine the relationships between EMS domains (i.e., Disconnection/Rejection and Impaired Autonomy) and DSs (i.e., immature and neurotic) of parents and their adult children. First, we tested the first serial mediation model in Figure 1, which suggests that Disconnection/Rejection EMS domain of parents leads to Disconnection/Rejection EMS domain of their children, mediated through DSs of parents and their children. The effect of Disconnection/Rejection EMS domain of mothers on Disconnection/Rejection EMS domain of their adult children was significant ($\beta = 0.35$, $t = 5.37$, $p = 0.0000$). The indirect effect of Disconnection/Rejection EMS domain of mothers on Disconnection/Rejection EMS domain of their adult children, first through immature DS of mothers and then through immature DS of their adult children, was also significant ($\beta = 0.10$, $SE = 0.03$, CI [0.041, 0.151]). Similarly, results revealed a significant effect of Disconnection/Rejection EMS domain of fathers on Disconnection/Rejection EMS domain of their adult children, first through immature DS of fathers and then through immature DS of their adult children, was also significant ($\beta = 0.09$, $SE = 0.04$, CI [0.001, 0.178]). Neither neurotic DS of parents nor neurotic DS of adult children emerged as significant mediators.

Second, in the other serial model depicted in Figure 2, Impaired Autonomy EMS domain of mothers was significantly associated with Impaired Autonomy EMS domain of their adult children ($\beta = 0.37$, $t = 5.82$, $p = 0.0000$). The indirect effect of Impaired Autonomy EMS domain of mothers on Impaired Autonomy EMS domain of their adult children, first through immature DS of mothers and then through immature DS of their adult children, was also significant ($\beta = 0.10$, $SE = 0.03$, CI [0.046, 0.161]). Similarly, Impaired Autonomy EMS domain of fathers was significantly associated with Impaired Autonomy EMS domain of their adult children, first through immature DS of fathers and then through immature DS of their adult children, was also significant ($\beta = 0.27$, $t = 4.02$, $p = 0.0001$). The indirect effect of Impaired Autonomy EMS domain of fathers on Impaired Autonomy EMS domain of their adult children, first through immature DS of fathers and then through immature DS of their adult children, was also significant ($\beta = 0.06$, $SE = 0.03$, CI [0.001, 0.088]).
Neither neurotic DS of parents nor neurotic DS of adult children emerged as significant mediators.

Additionally, we also examined whether parents’ Disconnection/Rejection EMS domain was associated with adult children’s Impaired Autonomy EMS domain (or vice versa) which worked through the pathways of first DSs of parents and then DSs of their adult children by conducting four more serial mediation models. The effect of Disconnection/Rejection EMS domain of mothers on Impaired Autonomy EMS domain of their adult children was significant ($\beta = 0.34$, $t = 5.23$, $p = 0.0000$). The indirect effect of Disconnection/Rejection EMS domain of mothers on Impaired Autonomy EMS domain of their adult children, first through immature DS of mothers and then through immature DS of their adult children, was also significant ($\beta = 0.08$, $SE = 0.02$, CI $[0.033, 0.128]$). Similarly, results revealed a significant effect of Disconnection/Rejection EMS domain of fathers on Impaired Autonomy EMS domain of their adult children ($\beta = 0.26$, $t = 3.83$, $p = 0.0002$). The indirect effect of Disconnection/Rejection EMS domain of fathers on Impaired Autonomy EMS domain of their adult children, first through immature DS of fathers and then through immature DS of their adult children, was also significant ($\beta = 0.07$, $SE = 0.04$, CI $[0.001, 0.145]$). Neither neurotic DS of parents nor neurotic DS of adult children emerged as significant mediators.

Lastly, Impaired Autonomy EMS domain of mothers was significantly associated with Disconnection/Rejection EMS domain of their adult children ($\beta = 0.24$, $t = 3.65$, $p = 0.0003$). The indirect effect of Impaired Autonomy EMS domain of mothers on Disconnection/Rejection EMS domain of their adult children was significant ($\beta = 0.08$, $SE = 0.02$, CI $[0.033, 0.128]$).

### TABLE 1  Correlations between EMS domains and DSs of parents and their adult children

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<td>Parents</td>
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<td>1. DR</td>
<td>-</td>
<td>0.75**</td>
<td>0.21**</td>
<td>0.64**</td>
<td>0.20**</td>
<td>0.26**</td>
<td>0.11</td>
<td>0.20**</td>
<td>46.12(48.32)</td>
<td>15.78(16.31)</td>
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<td>2. IA</td>
<td>0.70**</td>
<td>-</td>
<td>0.29**</td>
<td>0.62**</td>
<td>0.16*</td>
<td>0.27**</td>
<td>0.19**</td>
<td>0.23**</td>
<td>60.49(55.55)</td>
<td>20.72(17.73)</td>
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<td>3. NE</td>
<td>0.10</td>
<td>0.25**</td>
<td>-</td>
<td>0.46**</td>
<td>0.01</td>
<td>0.01</td>
<td>0.30**</td>
<td>0.14*</td>
<td>37.63(34.55)</td>
<td>10.87(10.29)</td>
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<td>4. IMMA</td>
<td>0.56**</td>
<td>0.59**</td>
<td>0.34**</td>
<td>-</td>
<td>0.11</td>
<td>0.16*</td>
<td>0.21**</td>
<td>0.26**</td>
<td>85.08(79.49)</td>
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<td>Adult children</td>
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<td>5. DR</td>
<td>0.35**</td>
<td>0.24**</td>
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<td>-</td>
<td>0.64**</td>
<td>0.04</td>
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<td>46.56</td>
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<td>6. IA</td>
<td>0.34**</td>
<td>0.37**</td>
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<td>0.64**</td>
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<td>0.15*</td>
<td>0.55**</td>
<td>64.94</td>
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<td>7. NE</td>
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<td>0.09</td>
<td>0.43**</td>
<td>0.16*</td>
<td>0.04</td>
<td>0.15*</td>
<td>-</td>
<td>0.29**</td>
<td>35.60</td>
<td>9.57</td>
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<td>8. IMMA</td>
<td>0.22**</td>
<td>0.20**</td>
<td>0.20**</td>
<td>0.36**</td>
<td>0.59**</td>
<td>0.55**</td>
<td>0.29**</td>
<td>-</td>
<td>92.33</td>
<td>26.11</td>
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Note: The values bold and/or in parentheses are for fathers.
Abbreviations: DR: Disconnection/Rejection; DS, defence style; EMS, early maladaptive schema; IA: Impaired Autonomy; IMMA: Immature; MA: Mature, NE: Neurotic.
* $p < 0.05$. ** $p < 0.01$. 

![FIGURE 1  Serial mediation model of the association between disconnection/rejection early maladaptive schema (EMS) domain of parents and adult children. * $p < .05$, ** $p < .01$, *** $p < .001$. Note: The values in the parentheses are for fathers. The path from parents’ schemas to children’s schemas refers to the total effect](image-url)
Rejection EMS domain of their adult children, first through immature DS of mothers and then through immature DS of their adult children, was also significant ($\beta = 0.12$, SE = 0.03, CI [0.059, 0.181]). Similarly, Impaired Autonomy EMS domain of fathers was significantly associated with Disconnection/Rejection EMS domain of their adult children ($\beta = 0.16$, $t = 2.37$, $p = 0.0188$). The indirect effect of Impaired Autonomy EMS domain of fathers on Disconnection/Rejection EMS domain of their adult children, first through immature DS of fathers and then through immature DS of their adult children, was also significant ($\beta = 0.08$, SE = 0.04, CI [0.004, 0.156]). Neither neurotic DS of parents nor neurotic DS of adult children emerged as significant mediators. All these results suggest that DSs of both parents and their adult children emerged as significant mediators in the associations between EMS domains of parents and their children.

**FIGURE 2** Serial mediation model of the association between impaired autonomy early maladaptive schema (EMS) domain of parents and adult children. *p < .05, ***p < .001. Note: The values in the parentheses are for fathers. The path from parents’ schemas to children’s schemas refers to the total effect

4 | DISCUSSION

Although a few studies were carried out to determine the mechanisms underlying the associations between EMSs of parents and their children (Gibson & Francis, 2019; Sundag et al., 2018; Zeynel & Uzer, 2020), a systematic understanding of the factors contributing to these associations is still lacking. Therefore, the purpose of this study was to evaluate the mediator role of immature and neurotic DSs in the associations between Disconnection/Rejection and Impaired Autonomy EMS domains of parents to their adult children. This study advances our knowledge on these associations by including immature and neurotic DSs of parents and their adult children as serial mediator variables and considering not only maternal but also paternal DSs and EMS domains. The results of the current study suggested that the indirect effect of Disconnection/Rejection and Impaired Autonomy EMS domains of mothers on the same EMS domains of their children through first immature DS of mothers and then through immature DS of their adult children was significant. Whilst the same pattern was also observed for father–child dyads, the mediator role of neurotic DSs was significant neither for mother–child dyad nor father–child dyad.

Our findings from this study suggested that there was an association between Disconnection/Rejection EMS domain of parents and Disconnection/Rejection and Impaired Autonomy EMS domains of their adult children. Moreover, these associations were mediated by immature DSs of parents and their adult children. This finding broadly supports the work of other studies linking Disconnection/Rejection EMS domain of parents with Disconnection/Rejection and Impaired Autonomy EMS domains of their adult children (Zonnevijlle & Hildebrand, 2019) and might be explained by the fact that parental upbringings may influence the responsiveness to the needs of their children (Assel et al., 2002). In other words, individuals with EMSs in Disconnection/Rejection EMS domain are mostly grown up in cold, rejecting, unstable, and abusive families so that they have difficulties in forming secure, nurturing, and compassionate relationships with others (Young et al., 2003). When they become parents, their introjections may give rise to emotional stress in their adult life, probably resulting in experiences of difficulties in displaying warmth, interest, and flexibility towards their children (Assel et al., 2002). According to self-psychology, repeated failures in empathically responsive parentings and problems with meeting mirroring selfobject need can be antecedent to not only low self-worth but also deficiencies in self-esteem, assertiveness, and autonomy of children (Baker & Baker, 1987). That is, lack of empathic responsiveness towards the children could not only deprive them from affective bonding but also inhibit their autonomy strivings (Baker & Baker, 1987) and as a result clear the way for
the development Disconnection/Rejection and Impaired Autonomy EMS domains. Moreover, as the current study suggested, immature DS which is frequently used by an individual with EMSs in this domain (Walburg & Chiaramello, 2015) may be one of the factors preventing parents from forming a satisfying relationship with their children. In other words, due to the frequent use of immature DS, parents may avoid emotional involvement with their child (denial), abuse them in times of conflict (acting out), or project their own malevolent intentions onto their children (projection) (Cramer & Kelly, 2010; Porcercelli et al., 2016), and as a result, they play a vital role in the development of Disconnection/Rejection and Impaired Autonomy EMS domains of their children. Furthermore, since children need to maintain a pattern of attachment to their caregiver and to survive in neglecting and abusive families, they use immature defence mechanisms excessively such as denial, dissociation, and identification like their parents (Blizard & Bluhm, 1994; Finzi et al., 2003). Although defensive functioning improves with age and cognitive development (Cramer, 2015), stressful experiences and overuse of immature defence mechanisms in childhood increase the reliance on immature DS in adulthood (Cramer & Block, 1998). Thus, in adulthood frequent use of immature DS may result in distorted perceptions such as defining themselves and others with completely evil or perfect characteristics (splitting) (Prunas et al., 2019), ignoring abusive behaviours of others (denial) (Blizard & Bluhm, 1994) and experiencing somatic complaints and seeking concern of others (somatization) (Blatt, 2008). Given that these mechanisms might contribute to the continuation of EMSs (Arntz & Jacob, 2013) frequent use of immature DS in the lifespan might imprison individuals to their EMSs by preventing themselves from meeting their core emotional needs.

To the best of our knowledge, this is the first study to specifically investigate explanatory mechanisms in the associations between Impaired Autonomy EMS domain of parents and Disconnection/Rejection and Impaired Autonomy EMS domains of their adult children. Our findings suggested that there were associations between Impaired Autonomy EMS domain of parents and Disconnection/Rejection and Impaired Autonomy EMS domains of their adult children, mediated by immature DS of parents and their adult children. These associations might be explained by the fact that unsatisfied autonomy, competence, and relatedness needs of parents increase psychological control in the interactions with their children (Soenens & Vansteenkiste, 2010). That is, as parents feel less autonomous and needy due to their own Impaired Autonomy EMS domain, they may undermine self-confidence need of their children. As such, their children may experience difficulties in functioning independently, separating themselves from others (especially from parental figures), and performing competently, which may lead to the development of EMSs in the same domain (Young et al., 2003). On the contrary, it is known that problems in autonomy develop as a result of either overly satisfied or unsatisfied dependency needs (Young et al., 2003). Therefore, in some of the circumstances in which caregivers’ dependency need was unfulfilled because of an emotionally unresponsive family environment, parents may focus on their own dependency needs whilst ignoring the feeling of others (Kertzman, 1980). Moreover, in a meta-analysis assessing the link between interpersonal dependency and child abuse, it was reported that dependency is one of personality traits leading to abuse of children (Bornstein, 2005). That is, a family environment in which either helplessness of children and/or their autonomous acts may threaten parents with Impaired Autonomy EMS domain might be eligible for the development and maintenance of EMSs in Disconnection/Rejection EMS domain. Considering that Impaired Autonomy EMS domain and the frequency of using immature defence mechanisms are positively correlated (Walburg & Chiaramello, 2015), in accordance with the present results, immature DS of parents may play a role in the associations between EMSs of parents and EMSs of their adult children. By way of illustration, parents with Impaired Autonomy EMS domain may underestimate their capacity to function autonomously (denial); they may overestimate vulnerability and incompetence of their children (projection and devaluation) or punish them for the acts threatening parental dependency (acting out). Due to distorted representations about themselves and their children, they may display controlling and overprotective parenting practises (Grolnick, 2003). Further, a recent study conducted with 4-month old infants suggested that when children are exposed to intrusive parenting practises, they learn to regulate their emotions defensively (Beebe et al., 2012) and frequently use lower-level defence mechanisms such as denial and projection (Cramer & Gaul, 1988). This result is in line with the current finding that in addition to immature DS of parents, immature DS of their adult children played a role in the associations between Impaired Autonomy EMS domain of parents and Disconnection/Rejection and Impaired Autonomy EMS domain of their adult children. Even though immature DS may have protected children from excessive emotions (Cramer, 1991), using the same defence mechanisms frequently in adulthood can give rise to self-alienation, withdrawal, and distorting relations with others (Cramer, 2015), which may contribute to the perpetuation of EMSs in these domains.

Further, one of our objectives was to investigate the associations between mother–adult children and father–adult children EMSs and the role of DSs on these associations separately. Our findings suggested that Disconnection/Rejection and Impaired Autonomy EMS domains of both mothers and fathers were associated with EMS domains of their children. More importantly, the role of immature DSs in these associations was the same for both mother–child and father–child dyads. Although there is a predominance of studies focusing on the role of maternal rather than the paternal factors on the psychosocial development of children (Phares & Compas, 1992), few studies have shown that EMSs of both fathers and mothers have been linked to EMSs of their children. For instance, in accordance with the present results, Mack et al. (2016) reported that defectiveness, enmeshment, subjugation, and vulnerability to harm and illness EMSs of fathers and defectiveness, vulnerability to harm, and pessimism EMSs of mothers were associated with a variety of EMSs of their children. Moreover, the role of father–child interactions on the development of EMSs was found to be similar to that of mother–child interactions (Monirpoor et al., 2012). Specifically, it was reported that the quality of father–child interaction (especially care, positive affect, and overprotection)
predicted EMSs of their children (Monirpoor et al., 2012). In addition, due to the fact that the use of defence mechanisms may be determined by gender role orientations rather than biological sex (Lobel & Winch, 1986), it is possible to expect an observed similarity between mother–child and father–child dyads in terms of the mediator role of immature DS. Taken together, the results of the current study further support the idea that both maternal and paternal factors contribute to the associations amongst EMSs in families. However, further studies are required to develop a full picture of which maternal and paternal factors (e.g., possible mediator or moderator variables) contribute to these associations.

Additionally, this study did not find a significant mediator role of neurotic DS of parents and their adult children in the associations amongst their EMS domains. There are several possible explanations for this result. First, in the study conducted by Carvalho et al. (2019), whereas neurotic DS was associated with dependence and mood instability personality traits which correspond to EMSs in Disconnection/Rejection and Impaired Autonomy domains, it had the highest correlation with self-sacrifice personality trait. In addition, three of the four defence mechanisms in neurotic DS (i.e., reaction formation, pseudo-altruism, and idealization) were classified into self-sacrificing DS in an alternative grouping of defence mechanisms (Bond, 2004). It is, therefore, possible that parents and children using neurotic defence mechanisms may be focusing on the needs of others whilst ignoring their own needs and contributing to the associations on other EMS domains of the parents and their adult children (e.g., Other-Directedness) rather than Disconnection/Rejection and Impaired Autonomy which are associated with unfulfilling secure attachment and autonomy needs. Second, in contrast to immature DSs, prior research suggested that neurotic DSs had mixed positive and negative associations with psychological disorders (Flannery & Perry, 1990; Sinha & Watson, 1999), and they are regarded as neither healthy nor unhealthy (Vaillant, 2012). Thus, they might be ineffective in the associations of EMSs domains in families until a certain level. Lastly, as discussed by Flannery and Perry (1990), there are a small number of items in neurotic DS subscale in the self-rated instruments, which may make it difficult to assess the role of neurotic DS in the empirical studies.

4.1 | Limitations and future directions

There are several limitations of the current study. First, the design of the study was cross-sectional, which makes it impossible to infer causal relationships. Considering that EMSs are open to change throughout the lifespan (Young et al., 2003) and might be affected by other factors (school life, romantic relationships, losses, etc.), future studies might use longitudinal methods to better understand the influential mechanisms in the associations between EMSs of parents and their adult children. Second, although there might be drawbacks of self-report DS measures (Davidson & MacGregor, 1998), the results of this study relied on the data gathered from self-rated items. In future studies, using different assessment approaches such as observer-rated instruments and clinical interviews simultaneously may enhance our understanding of DSs and their influence on the associations between EMSs of parents and their children. Another limitation may be the relatively low Cronbach’s alpha value of neurotic DS due to possibly a small number of items. Finally, the age at which an individual becomes a parent could be important for the associations of cognitive beliefs or schemas in families and should be taken into consideration in future studies.

Parallel with the findings in the current study, although parental personality characteristics and interactions with parents influence personality organization of children (Sroufe et al., 2005), it can be biased to evaluate these interactions as a unidirectional transmission. Instead, representational world of an individual develops as a result of a “co-created” process (Beebe & Lachmann, 2017), influenced by nature and nurture, and develops throughout the lifespan (Sameroff, 2010). Moreover, in addition to characteristics of family environment and perceived parenting, according to schema theory, EMSs develop as a result of temperament, early life experiences, and unmet core emotional needs (Young et al., 2003). Therefore, in future studies, to better understand the associations between EMSs of parents and their children, assessing other factors including unmet core emotional needs, temperament, traumatic life events, and the context in which a child is grown up might shed more light on our understanding of these associations.

4.2 | Conclusions and implications

In spite of its limitations, this study provided further evidence for the associations between Disconnection/Rejection and Impaired Autonomy EMS domains of parents and their children and emphasized the mediator role of immature DS in these associations. Since unmet core emotional needs are crucial for the development of EMSs (Young et al., 2003), one should interpret the present results by considering the detrimental role of EMSs and immature DS on emotional need satisfaction of the next generation. In other words, whereas EMSs and immature DS of parents might prevent them from meeting the emotional needs of their children during childhood, the immature DS of the next generation might interrupt their own emotional need satisfaction throughout adulthood. However, more information on the role of EMSs and immature DS in fulfilling core emotional needs would help us to establish a greater degree of accuracy on this matter.

The current study might guide clinicians to develop parenting education programmes emphasizing the associations between EMSs and DSs of parents and their children. In these programmes, the contribution of parental EMSs and their ways of warding anxiety to the development and maintenance of EMSs of their children can be emphasized. Due to the fact that this study showed the predictor role of EMSs and DSs of fathers on EMSs and DSs of their children, aiming to educate not only mothers but also fathers (i.e., father involvement) in parental education programmes might be beneficial for both parents and their children. Additionally, these findings,
whilst preliminary, imply that children do not passively introject EMSs of their parents; on the contrary, there are some factors belonging to both parents and their children in developing and maintaining EMSs. Thus, both researchers and clinicians should consider EMSs as co-created constructs in their research and practises. Furthermore, this study revealed the associations between the concepts of psychodynamic theory and schema theory and confirmed how the theoretical background regarding to these concepts overlap across theories and enrich each other. Therefore, similar to the escalation of integrative therapies to enhance success of treatments in the last decades (Norcross et al., 2016), synthesizing the concepts of different theories may improve our understanding of mental representations in families.

**COMPLIANCE WITH ETHICAL STANDARDS**

**RESEARCH INVOLVING HUMAN PARTICIPANTS AND/OR ANIMALS**

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

**INFORMED CONSENT**

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

**AUTHOR CONTRIBUTIONS**

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Cemre Karaarslan and Ibrahim Yigit. The first draft of the manuscript was written by Dilay Eldogan, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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**CONFLICT OF INTEREST**

The authors declare that they have no conflict of interest.

**ETHICS APPROVAL**

Approval was obtained from the ethics committee of Başkent University. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

**DATA AVAILABILITY STATEMENT**

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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