Chapter

Parenting and Sibling Relations in Predicting the Development of Personality Traits

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Abstract

The impacts of sibling relationship quality during childhood are largely unexplored in predicting the development of internalising and externalising behaviour problems. Syntheses of research into sibling relations point out the overlapping influential factors that cause variations in sibling relationships during childhood, such as child temperament, family constellation variables and the parent-child relationship, indicating that the construct of sibling relationship quality is derived from the coherence of four trajectories: (a) sibling behaviour and interactions, (b) family emotional climate, (c) parental management and the parent's interactions with siblings and (d) sibling structural features. Noting that the impacts of childhood sibling relations on the development of personality traits are unexplored directly in the literature, this chapter has critically appraised the fragmented psychological and social patterns of personality traits across developmental, behaviour and sibling literature, highlighting the interrelationships between these trajectories to conclude a tentative theoretical conceptualisation of how parental behaviour and childhood sibling relationships affect child maladjustment outcomes related to predicting developmental personality traits. A further conjecture has been suggested that the quality of parent-child relationships and childhood sibling relationships can be a significant moderator for developmental personality traits, conceptualising risk and resiliency factors for developing callous-unemotional (CU) behaviours in the parent-child-siblings network. Future empirical research is a warranted endeavour to evaluate the tentative conclusions.

Keywords: sibling, child, adjustment, personality traits, callous-unemotional, development, attachment, parent-child relationship

1. Introduction

Personality traits are defined as complex, multifaceted constructs, expressed in affectively cold, interpersonally deceptive, behaviourally reckless and often overtly antisocial behaviour [1]. Personality traits have long been conceptualised as consisting of two broad facets: on the one hand, an affective-interpersonal facet encompassing such traits as lack of empathy, grandiosity and superficial charm, and on the other hand, a behavioural-lifestyle facet encompassing irresponsible, antisocial and impulsive behaviours. In behaviour research, the two facets of personality traits have shown different correlates with internalising and externalising behaviour

problems, pointing out fear, anxiety and depression as main correlates with personality traits in youth and adulthood. Fundamental research highlighted that abnormal or deficient emotional responding is considered to be the key measure for personality traits across development [2]. Empirical evidence has also indicated that the increase or decrease in personality traits across development is associated with similar changes in contextual, behavioural and individual problems [3].

From a developmental point of view, psychopathic traits can have a patent impact on individuals' development through predisposing, precipitating, perpetuating and predictive risk factors that include the characteristics of the individual (i.e. neuropsychological deficits, autonomic irregularities and temperamental traits) as well as the characteristics of the individual's social context (i.e. peer rejection, family dysfunction, neighbourhood disorganisation and family socioeconomic status) [4]. Notably, research has documented the increased prevalence of personality traits in the general population, youth in particular [5, 6]. The relevant literature identified these traits through adult measures underscored by the criteria proposed for a callous-unemotional (CU) specifier to conduct disorders in DSM-5 [7]. The evidence in research demonstrated that stability subtypes of CU behaviours in children and adolescents represent developmental precursors of adult personality traits [8–10], defining CU behaviours in children as a circumscribed facet of adult personality traits associated with a persistent pattern of behaviour that reflects lack of empathy, lack of remorse and shallow or deficient affect [10]. However, the literature specific to assess the heterogeneity of distinct aetiologies and developmental pathways to CU behaviours is sparse [11, 12]. The existing research partially explains the association of personality traits with developmental theoretical assertions, which informs our understanding of the deficits in the ability to form close interpersonal attachments over the individual's lifespan [5, 13].

Notably, recent theories point out that the affective-interpersonal facet might result from an inborn deficit, whereas the behavioural-lifestyle facet might be more under the influence of environmental risk factors like neglecting or abusive parenting [14]. Whereas such theorising remains somewhat speculative and is in need of rigorous empirical testing, there is a preliminary evidence in support of a differential aetiology underlying the affective-interpersonal and behavioural-lifestyle facets. Bowlby's theory of parent-child attachment paved the way for scientific studies to explore the significant implications of the early disruptions in attachment relationships to explain affectionless traits [12]. For theoretical and empirical purposes, attachment approaches suggest that attachment disorganisation is a potential marker of vulnerability to later mental health disorders, and the construction of the attachment framework is commonly used to assess underlying interpersonal mechanisms through developmental trajectories that can predict the development of personality traits. Across developmental and behaviour research, Fearon et al. conducted a meta-analysis to examine the significance of how insecure and disorganised attachments increase the risk for externalising problems [15]. Critically, evidence depicted that CU behaviours are not immediately related to avoidant attachment representations; nevertheless, insecure attachment representations evoke conduct problems that show a robust association with CU behaviours [12, 13, 15]. Accumulative research has identified that deficits in fear recognition and dysfunction of empathy processing are particularly prevalent with research utilising measures of CU behaviour [16]. Relevant longitudinal studies have contributed to emphasise the influence of the reciprocal process between the parent and child to imply the predictive impact that delineates individuals' chances to positive or negative consequences [14].

Relatedly, research has demonstrated that quality of sibling relationships are correlated with individual's personality development and psychosocial adjustment,

including the development of interpersonal and social skills, language skills, skills in conflict management and resolution throughout the entire lifespan [17–32]. Sibling relations are conceptualised as the children's first social networking experience with relatively same-age individuals, and therefore, can serve as the base of building ideas about their own abilities and self-worth through modelling and learning new skills or behaviour from one another [33]. Sibling relationships are defined in literature as ranging from being close and harmonious to distant and conflicted [34]. The quality of sibling relationships encompasses coherent structures related to sibling social support, overall relationship satisfaction, closeness, the degree of reliability and responsibility to which the sibling serves as a role model [17–37]. In light of the evidence across developmental and behaviour literature, it is therefore essential to track the dynamics unfolding reciprocal interactions with the family unit, including parent-child and sibling-sibling dynamics, in order to interpret multidimensional disorganised or disoriented behaviours as indicators of collapsed behavioural strategies across development.

Simultaneously, given that the reciprocal impacts of sibling relationships during childhood are unexplored in research related to personality traits, this chapter suggests to appraise the theoretical and empirical trajectories of regulation and child emotional functioning within the wider sphere of parent-child relationships and sibling relationships, highlighting syntheses of sibling research indicating the developmental trajectories of child adjustment within constructs of sibling behaviour and interactions, family emotional climate, parental management and the parent's interactions with siblings and sibling structural features.

2. Regulation, attachment and child emotional functioning

Affect regulation is defined as the process of initiating, sustaining, modulating or changing the occurrence, intensity or duration of internal feeling states and emotion-related physiological processes [38]. Simpson and Belsky suggested that emotion regulation strategies are evolutionary adaptive as they guide the child's capacity to cope with various rearing environments [39]. In attachment infancy studies, a large amount of existing interdisciplinary data suggested that attachment communications are critical to the development of structural right brain neurobiological system, encompassing processes of emotion, stress modulation, self-regulation and thereby the functional origins of the bodily based implicit self [40]. In this context, the theoretical implications of cognitive antecedents and correlates of emotions in affect regulation are highly interrelated [40, 41]. Adding, the central role of affect regulation in child development corresponds with the developmental and neurobiological notions of differential susceptibility [40]. Hence, Schore and Schore proposed a profoundly developmental approach conceptualising the *Regulation Theory* as an amalgam of Bowlby's attachment theory, updated internal object relations theories, self-psychology and contemporary relational theory [40]. This notion takes into regard the individual's subjective trajectory of emotional growth as well as contextual influences, including differences in family dynamics and cultural variations [40, 42]. Notably, the developmental pathway in middle and late childhood years underlie the expanding roles of family, social community and other environmental factors [42, 43]. Children at this age group enter the 'age of reason' by developing their own identity through processes of more flexible thinking, self-awareness and identifying and understanding others' feelings or emotional states [43]. Nevertheless, little attention has been given to assessing regulation during the middle and late years of childhood [43].

According to Brumariu, parent-child attachment offers a meaningful context for emotion socialisation [43]. The theoretical link between parent-child attachment and affect regulation underlies the child's ability to activate positive or negative responses to emotionally provoking situations [43]. In this context, securely attached children internalise effective emotional regulation strategies within parental attachment relationships and have the ability to successfully employ adaptive emotion regulation strategies in other relationships, such as with siblings and friends [40, 43]. In contrast, insecure attached children are conceptualised in three patterns: (a) ambivalently attached children depict a hyper-activating stance of affect regulation by a heightening display of negative emotions, ostensibly in an effort to gain attention due to their low confidence and negative expectations of their parents and other people [43, 44]; (b) avoidantly attached children depict a hypo-activating stance of affect regulation by a minimising display of negative emotions, ostensibly through emotional suppression or deactivation as defence mechanisms to cope with attachment figures who cannot tolerate attachment behaviours [40, 44] and (c) finally, disorganised attached children miss the opportunity to learn how to mitigate their distress due to their coping with caregivers' alternating patterns of hostile behaviour, role-reversing, misattuned affect and/or detachment [45], therefore, these children lack the appropriate development of emotional regulation strategies [40, 43].

The empirical links between parent-child attachment and child affect regulation mainly evaluate child emotional functioning in four aspects: (a) emotion understanding/awareness of the self and others; (b) emotional experiences and expressions within or outside the parent-child relationship; (c) ways of regulating emotions/coping strategies and (d) and the overall broad construct of emotion regulation [43]. Evidence-based research demonstrated that the quality of parent-child attachment relationship is a key environmental determinant to child affect regulation and adjustment [40, 43]. Bakermans-Kranenburg and van IJzendoorn, Pluess and Belsky and Belsky pointed out the significant role of parental influences, including parenting skills in children's susceptibility [46–48]. In this context, forming secure parental attachment, encompassing characteristics of relational engagement, parental supervision, acceptance and support allow the child to develop secure and safe experiences with the parent, and in turn, a secure attachment bond can promote positive child emotional functioning and reduce behavioural problems [40, 41]. In contrast, insecure parental attachments underlie parent-child distress and predict internalising and externalising problems during childhood development [40, 43, 49].

3. Sibling relations

3.1 Sibling behaviour and interactions

Sibling relationships encompass patterns of emotionally charged interactions that are defined by strong, uninhibited reactions of positive, negative and sometimes ambivalent dimensions [29–35]. The language used in sibling interactions is translated by researchers into positive and negative dimensions of their behaviour [29–35]. Positive dimensions encompass 'prosocial' characteristics in sibling interactions, including verbal affection, sharing, comfort and cooperation, whereas negative dimensions encompass 'agonistic' characteristics, including commands, insults, teasing, struggles over objects and physical aggression [34]. There is evidence that quality of sibling interactions is associated with internalising and externalising behaviours, links found contemporaneously and over time [31, 50–52]. Research indicated that variations in how siblings behave and react towards one another are

derived from different aspects of the individual's beliefs, personality, sociocognitive processing, emotional functioning and adaptation [17–28, 31, 32, 37].

3.2 Family emotional climate

Brody, Stoneman and McCoy, Furman and Giberson and Minuchin suggested that there are interdependent influences among dyads (subsystems) within the family system [36, 52, 53]. Modry-Mandell, Gamble and Taylor defined family emotional climate by the impacts of family emotional expressiveness, parental agreement and children's exposure to conflict within the family system on the sibling relationship quality [31]. Cummings and Smith suggested that anger and conflict are a salient feature of the emotional climate of the home from the perspective of the children [44, 54]. Given the consensuses link provided in research between conflict within the family system and child maladjustment, evidence corroborates the interactional system perspective by Cicirelli [20], involving three subsystems within the family context by the correspondence between the positive and negative dimensions of the parent-parent interactions, parent-child interactions and the sibling-sibling interactions [31, 51, 55, 56].

In this context, sibling relationships are conceptualised as more positive and warm in families that consist of a positive/secure relational pattern, whereas sibling relationships are prone to conflict, hostility and aggression in family systems that are exposed to threatening/insecure relational patterns (i.e. distressed or conflictual parent-child relationship and interparental conflict) [31, 55]. To further elaborate, Cummings indicated that children exposed to interparental conflict exhibit greater levels of distress and behavioural problems and show higher sensitivity to subsequent angry expressions by their parents than non-exposed children [31, 57]. Moreover, Brody indicated that parent-child relationships that involve harsh parenting and unresolved anger underlie children to develop behavioural styles, emotional regulation strategies and cognitions that motivate sibling conflict and poor adjustment outcomes [31, 51]. Hence, the interactional and reciprocal influences between subsystems of the family system can exacerbate problems in children's emotional functioning and adaptation by children approaching sibling disputes with anger-focused coping strategies and aggressive behaviour [34, 57].

3.3 Parental management and sibling relationship quality

Garcia et al., Modry-Mandell, Gamble and Taylor and Query and Mahoney suggested that there is a direct link between negative sibling relationships and child behaviour problems [31, 34, 55]. Researchers have indicated that increased indices of externalising behaviour (i.e. aggression, attention problems and emotional negativity) between siblings may undermine the individual's well-being and predict greater conflicts and negative interactions between the siblings [29]. Noting that there are interactional and reciprocal influences between subsystems of the family system, the level of distress within the sibling relationship is a significant risk factor related to child behaviour problems in children living with distressed families [34, 55]. Thus, due to the limited social, cognitive and emotional competence of the child to adjust externalising behaviour, parental intervention is a merit to facilitate conditions conductive for co-constructing positive interactions between siblings and to prevent a developmental pattern of hostile sibling relations that threaten the emotional climate of the family [29, 34, 55]. Research suggested three management strategies for parental interventions: (a) anticipatory intervention, (b) interactive intervention and (c) directive intervention (Howe, Aquan-Assee and Bukowski). Research indicated that the construct of these interventions

partially depends on sibling structure, however, the overall effectiveness of these interventions is closely related to the quality of parental time and attention during parent-child interaction [30, 38].

In this context, it is essential that the quality of parental management strategies conveys fairness and equality in the parent-child interactions [15]. The magnitude of parent-child interaction can underlie parental differential treatment among siblings [15, 48–50]. Research strongly emphasised the link between parental differential treatment, child temperament and the quality of sibling relationships [33, 48, 49]. From a developmental perspective, children's perceptions of the warmth and intimacy of their sibling relationship is strongly associated with sibling disclosure and emotional understanding [30, 35]. Hobson and Manke found that older siblings reported less warmth and closeness and a higher level of conflict within sibling relationships under conditions of less perceived fairness [33]. Dunn et al. suggested that parental time and attention is closely related to family's social-economic status and the parent's psychosocial factors, and in turn, this association has shown effect on the level of closeness, warmth and intimacy among sibling [27, 28]. Hence, syntheses of research indicate direct and indirect influences of environmental factors related to child's perceptions and beliefs towards the parent-child interactions and the quality of the sibling relationship [17–29, 31, 32, 36].

3.4 Sibling structural features: age, gender and family size

A noteworthy feature indicated through observational studies in sibling relationships is the reciprocity of positive and negative interactions between siblings [34]. Reciprocity is defined as the link between behaviour frequencies of older and younger siblings [34]. Longitudinal research following children from preschool, middle childhood to early adolescence emphasised the change of child adjustment (i.e. internalising and externalising problems) in sibling relationships [27, 28, 52]. The influence of the family interactional system on the child's characteristics and behaviour and cognitive development is well documented [17–28, 31, 32, 37]. According to Cicirelli, the attention and responsiveness between subsystems in the home is held to be dependent on sibling structural features (i.e. age and age gaps between siblings, number of siblings and the gender composition of siblings) to the extent that cultural norms and family values prescribe certain roles for a given sibling position [21].

Bigner and Cicirelli suggested that children's perceptions of sibling power and function depended on sibling structure features [20, 58]. Cicirelli (1967–1978) emphasised on the efficiency of the educative aspect and problem-solving behaviour through the family communication and interaction pattern in sibling structure [17–22]. Most studies conducted by Cicirelli (1967–1993) indicated that older sisters were more effective teachers of younger siblings than were older brothers [17–25]. The importance of this finding implies three significant inferences: (a) the direct and indirect dyadic impacts of the mother-child relationship on child adjustment within sibling-sibling interactions; (b) the degree of reliability and responsibility given to older sisters and (c) there is a link between positive and effective mother-child interactions and the sibling structure (the gender of the older sibling) [17–26]. Family size showed no effect in the family interactional system [17–22].

4. Discussion

Taken together the appraisal of research into child development, behaviour and sibling relations, syntheses of the accumulative research correspond with literature

related to developmental personality traits, suggesting that CU behaviours are malleable to a certain degree and are largely influenced by the environmental cues in the child's psychosocial context across the child's development [8, 59–62]. The juxtaposition of the child and his/her environment has shown evidence to change in problem behaviour over time by targeting parental reflexive behaviour and response towards child problem behaviours as the milestone. However, it is also believed that parents and siblings are cause of the interpersonal affect that can lead to problem behaviour. From a developmental perspective, insecure parental relationships and conflict or negative sibling relations can hinder internal developmental factors such as emotional regulation, cognitive appraisals and coping responses, and thus, constitute limitations in the child's representations and ability to control mental and emotional processes. Immaturity in these areas may either protect or exacerbate reactions towards proximal factors through diminished means of coping [42].

In terms of influence on the child adjustment, Simpson and Belsky highlighted that emotional regulation strategies are evolutionary adaptive as they guide the child's capacity to cope with various rearing environments [39]. Schore and Schore pointed out that the central role of affect regulation in child development corresponds with the developmental and neurobiological notion of *differential susceptibility* [40]. Parenting skills and management are viewed as reciprocal processes going between the parent and children, including the positive and coercive processes which happen bidirectionally. Parents' problem parenting is an action that is causing the child's/children's problem behaviour. Poor parenting is viewed as a reaction from the parents towards the child's problem behaviour, by responding in a harsh manner or passively reacting to the child's/children's problem behaviour. Parents unable to communicate effectively with their child/children reflect a lacking ability in intellectual functioning or reasoning ability related to the problem behaviours. The short- and long-term impacts related to poor parenting in parent-child relationships expand to the child's networking and social relations with siblings, motivating problem behaviours from the child's own kind of personality. Simultaneously, rather than being affected by their environment, children with CU behaviours are changing their environment.

5. Tentative conclusions and future directions

Substantively, parental relationships and sibling relationships are interconnected by which involve variables that may evoke proximal risk factors, therefore, may underlie considerable moderators of heterogeneity in symptoms of subsequent maladaptive behaviour affecting the child's social and interpersonal functioning. Looking close across developmental and behavioural research, this chapter suggests that CU behaviours may be moderated through the intersubjectivity in parent-child and sibling-sibling interactions. Corresponding to Bandura's social learning theory (SLT), there are two specific processes to explain parental and siblings' reciprocal behaviours: verbal instruction and modelling [63]. Noting that the reciprocal social learning processes embedded in parental and sibling relationships have not been investigated extensively, fragmented psychological and social evidence leading to child adjustment across the literature are consistent with how Bandura states that 'internal personal factors and behavior … operate as reciprocal determinants … [as] people's expectations influence how they behave and the outcomes of their behavior change their expectations' ([63], p.195). Hence, this chapter suggests further empirical work to investigate the roles of *interaction* and *communication* in parent-child and sibling relations as key mechanisms for developing CU behaviours during childhood underlying *child's susceptibility* in defining the quality of the child's social and emotional learning experiences.

A further conjecture suggests the power of resiliency embedded in the parent-child and sibling bond by corresponding to Deater-Deckard et al., defining resilience in childhood as 'typical development in the face of adverse circumstances that propel others to deleterious outcomes … genes and environments work together in promoting optimal development under nonoptimal conditions' ([64], p. 49). This conceptual implication of resiliency underlies the notion of adaptability to adversity in parent-child and sibling relations evident across the literature. Pointing out that Rutter emphasised on the risk and protective *mechanisms* and *processes* in the developmental process of resiliency rather than identifying risk and protective factors [64, 65], it is therefore apposite to further investigate the developmental nature of 'resiliency' conveyed through intersubjective social and emotional competence in the parent-child-siblings' network.

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References

[1] Hare RD, Neumann CS. The Role of antisociality in the psychopathy construct: Comment on Skeem and Cooke. Psychological Assessment. 2010;**22**(2):446-454

[2] Patrick C, Bradley M, Lang P, Mineka S. Emotion in the criminal psychopath: Startle reflex modulation. Journal of Abnormal Psychology. 1993;**102**(1):82-92

[3] Fanti KA, Panayiotou G, Lombardo MV, Kyranides MN. Unemotional on all counts: Evidence of reduced affective responses in individuals with high callous–unemotional traits across emotion systems and valences. Social Neuroscience. 2016;**11**(1):72-87

[4] Frick PJ, White SF. Research review: The importance of callous-unemotional traits for developmental models of aggressive and antisocial behavior. Journal of Child Psychology and Psychiatry. 2008;**49**(4):359-375

[5] Alzeer SM, Michailidou M, Munot M, Kyranides M. Attachment and parental relationships and the association with psychopathic traits in young adults. Personality and Individual Differences. 2019;**151**

[6] Carter R, Neumann CS, Callahan JL, Wang CD. Psychopathic Traits and Insecure Attachment Patterns in Community-Based Subgroups. Denton, Texas: University of North Texas; 2014

[7] Berg J, Lilienfeld S, Reddy S, Latzman R, Roose A, Craighead L, et al. The inventory of callous and unemotional traits. Assessment. 2013;**20**(5):532-544

[8] Frick PJ. Extending the construct of psychopathy to youth: Implications for understanding, diagnosing, and treating antisocial children and adolescents. Canadian Journal of Psychiatry. 2009;**54**:803-812

[9] Kyranides M, Fanti N, Katsimicha K, Georgiou A. Preventing conduct disorder and callous unemotional traits: Preliminary results of a school based pilot training program. Journal of Abnormal Child Psychology. 2017;**46**(2):291-303

[10] American Psychiatric Association-APA. DSM-5 Development: Q 02.1 Callous and Unemotional Specifier for Conduct Disorder. Arlington: American Psychiatric Publishing; 2012

[11] Larstone R. An attachment perspective on callous and unemotional characteristics across development. In: Handbook of Personality Disorders: Theory, Research, and Treatment. 2nd ed. New York City: The Guilford Press; 2018. pp. 324-336

[12] Pasalich DS, Dadds MR, Hawes DJ, Brennan J. Attachment and callous-unemotional traits in children with early-onset conduct problems. Journal of Child Psychology and Psychiatry. 2018;**53**(8):838-845

[13] Pasma D. Assessing the relation between attachment and psychopathic traits in a sample of adolescents: Is it mediated by delinquency? [ProQuest dissertations and theses]. Canada: University of New Brunswick; 2008

[14] Skeem JL, Cooke DJ. One measure does not a construct make: Directions toward reinvigorating psychopathy research—Reply to Hare and Neumann. Psychological Assessment. 2010;**22**(2):455-459

[15] Fearon R, Bakermans-Kranenburg M, Van IJzendoorn M, Lapsley A, Roisman G. The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. Child Development. 2010;**81**(2):435-456

[16] Lethbridge E. Callous-Unemotional Trait Modulation of the Neurological Processing of Empathy and Emotion. PQDT—Global. UK: Sheffield Hallam University; 2015

[17] Cicirelli VG. Sibling constellation, creativity, IQ, and academic achievement. Child Development. 1967;**38**(2):481-490

[18] Cicirelli VG. The effect of sibling relationships on concept learning of young children taught by child teachers. Child Development. 1972;**43**:282-287

[19] Cicirelli VG. Relationship of sibling structure and interaction to younger sib's conceptual style. Journal of Genetic Psychology. 1974;**125**:37-49

[20] Cicirelli VG. Effects of mother and older sibling on the problem-solving behavior of the younger child. Developmental Psychology. 1975;**11**(6):749-756

[21] Cicirelli VG. Sibling structure and intellectual ability. Developmental Psychology. 1976;**12**(4):369-370

[22] Cicirelli VG. The relationship of sibling structure to intellectual abilities and achievement. Review of Educational Research. 1978;**48**(3):365-379

[23] Cicirelli VG. Feelings of attachment to siblings and well-being in later life. Psychology and Aging. 1989;**4**(2):211-216

[24] Cicirelli VG. Relationship of personal–social variables to belief in paternalism in parent caregiving situations. Psychology and Aging. 1990;**5**(3):458-466

[25] Cicirelli VG. Attachment and obligation as daughters' motives for caregiving behavior and subsequent effect on subjective burden. Psychology and Aging. 1993;**8**(2):144-155

[26] Cicirelli VG. Sibling Relationships across the Life Span. New York: Plenum Press; 1995

[27] Dunn J, Slomkowski C, Beardsall L. Sibling relationships from the preschool period through middle childhood and early adolescence. Developmental Psychology. 1994;**30**(3):315-324

[28] Dunn J, Slomkowski C, Beardsall L, Rende R. Adjustment in middle childhood and early adolescence: Links with earlier and contemporary sibling relationships. Journal of Child Psychology and Psychiatry, and Allied Disciplines. 1994;**35**(3):491-504

[29] Howe N. Predicting normative and problematic family pathways to the transition to siblinghood: Commentary on Volling et al.'s monograph. Monographs of the Society for Research in Child Development. 2017;**82**(3):184-195

[30] Howe N, Aquan-Assee J, Bukowski W. Predicting sibling relations over time: Synchrony between maternal management styles and sibling relationship quality. Merrill-Palmer Quarterly. 2001;**47**(1):121-141

[31] Modry-Mandell K, Gamble L, Taylor W. Family emotional climate and sibling relationship quality: Influences on behavioral problems and adaptation in preschool-aged children. Journal of Child and Family Studies. 2007;**16**(1):59-71

[32] Riggio H. Measuring attitudes toward adult sibling relationships: The lifespan sibling relationship scale. Journal of Social and Personal Relationships. 2000;**17**(6):707-728

[33] Hobson R, Manke B. The relation between parental differential treatment and sibling relationship quality in a multi-ethnic sample. [ProQuest dissertations and theses]. TX, USA: University of Houston; 2002

[34] Query L, Mahoney A. The quality of family relationships in the prediction of child behavior problems. [ProQuest dissertations and theses]. OH, USA: Bowling Green State University; 2000

[35] Howe N, Aquan-Assee J, Bukowski W, Lehoux P, Rinaldi C. Siblings as confidants: Emotional understanding, relationship warmth, and sibling self-disclosure. Social Development. 2001;**10**(4):439-454

[36] Minuchin P. Families and individual development: Provocations from the field of family therapy. Child Development. 1985;**56**:289-302

[37] Frank T, Curtis R, DeRose L, Mendelsohn R, Primeggia, S. "Do they ever really leave the nest?" Sibling relationships across the lifespan: An investigation of the variables influencing the positive and negative aspects of sibling relationships throughout time. [ProQuest dissertations and theses]. NYC, USA: Adelphi University, The Institute of Advanced Psychological Studies; 2013

[38] Eisenberg N. Introduction. In: Damon W, Eisenberg N, editors. Handbook of Child Psychology: Vol 3. Social, Emotional and Personality Development. 5th ed. New York: Wiley; 1998. pp. 1-24

[39] Simpson JA, Belsky J. Attachment theory within a modern evolutionary framework. In: Cassidy J, Shaver P, editors. Handbook of Attachment. 2nd ed. New York, NY: Guilford Press; 2008. pp. 131-157

[40] Schore J, Schore A. Modern attachment theory: The central role of affect regulation in development and treatment. Clinical Social Work Journal. 2008;**36**(1):9-20

[41] Schore A. Affect Regulation and the Origin of the Self. Mahweh, NJ: Erlbaum; 1994

[42] Dwyer K. The meaning and measurement of attachment in middle and late childhood. Human Development. 2005;**48**(3):155-182

[43] Brumariu L. Parent–child attachment and emotion regulation. New Directions for Child and Adolescent Development. 2015;**148**:31-45

[44] Cassidy J. Emotion regulation: Influences on attachment relationships. In: Fox NA, editor. The Development of Emotion Regulation: Biological and Behavioral Considerations. Monographs of the Society for Research in Child Development, 59 (Serial No. 240). Oxford, UK: Wiley; 1994. pp. 228-249

[45] Madigan S, Bakermans-Kranenburg MJ, van Ijzendoorn MH, Moran G, Pederson DR, Benoit D. Unresolved states of mind, anomalous parental behavior, and disorganized attachment: A review and meta-analysis of a transmission gap. Attachment & Human Development. 2006;**8**(2):89-111

[46] Bakermans-Kranenburg MJ, van IJzendoorn MH. Gene-environment interaction of the dopamine D4 receptor (DRD4) and observed maternal insensitivity predicting externalizing behavior in preschoolers. Developmental Psychobiology. 2006;**48**:406-409

[47] Pluess M, Belsky J. Differential susceptibility to parenting and quality child care. Developmental Psychology. 2010;**46**(2):379-390

[48] Belsky J. Theory testing, effect-size evaluation, and differential susceptibility to rearing influences: The case of mothering and attachment. Child Development. 1997;**68**:598-600

[49] Belsky J, Steinberg L, Draper P. Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of

socialization. Child Development. 1991;**62**(4):647-670

[50] Brody GH, Stoneman Z. Sibling relationships and their association with parental differential treatment. In: Hetherington EM, Reiss D, Plomin R, editors. Separate Social Worlds of Siblings: The Impact of Nonshared Environment on Development. Hillsdale, NJ: Erlbaum; 1994

[51] Brody GH, Stoneman Z, Burke M. Child temperaments, maternal differential behavior and sibling relationships. Developmental Psychology. 1987;**23**:354-362

[52] Brody G, Stoneman Z, McCoy J. Associations of maternal and paternal direct and differential behavior with sibling relationships: Contemporaneous and longitudinal analyses. Child Development. 1992;**63**(1):82

[53] Furman W, Giberson R. Identifying the links between parents and their children's sibling relationships. In: Shulman S, editor. Close Relationships and Socioemotional Development. Norwood, NJ: Ablex; 1995

[54] Cummings EM, Smith D. The impact of anger between adults on siblings' emotions and social behavior. Journal of Child Psychology and Psychiatry. 1993;**34**:1425-1433

[55] Garcia MM, Shaw DS, Winslow EB, Yaggi KE. Destructive sibling conflict and the development of conduct problems in young boys. Developmental Psychology. 2000;**36**:44-53

[56] Grych JH, Fincham FD. Marital conflict and children's adjustment: A cognitive-contextual framework. Psychological Bulletin. 1990;**108**:267-290

[57] Cummings EM. Coping with background anger in early childhood. Child Development. 1987;**58**:976-984

[58] Bigner J. A Wernerian developmental analysis of children's descriptions of siblings. Child Development. 1974;**45**(2):317-323

[59] Kimonis ER, Frick PJ, Barry CT. Callous-unemotional traits and delinquent peer affiliation. Journal of Consulting and Clinical Psychology. 2004;**72**(6):956-966

[60] Kerr M, Van Zalk M, Stattin H. Psychopathic traits moderate peer influence on adolescent delinquency. Journal of Child Psychology and Psychiatry. 2012;**53**(8):826-835

[61] Van Zalk MHW, Van Zalk N. Violent peer influence: The roles of self-esteem and psychopathic traits. Development and Psychopathology. 2015;**27**(4 Pt 1): 1077-1088

[62] Greenberg MT, Speltz ML, DeKlyen M. The role of attachment in the early development of disruptive behavior problems. Development and Psychopathology. 1993;**5**(1-2):191-213

[63] Bandura A. Social Learning Theory. Englewood Cliffs, NJ: Prentice Hall; 1977. p. 49

[64] Deater-Deckard K, Ivy L, Smith J. Resilience in gene-environment transactions. In: Handbook of Resilience in Children. Boston, MA: Springer US; 2005. pp. 49-63

[65] Rutter M. Resilience: Some conceptual considerations. Journal of Adolescent Health. 1993;**14**:626-631