
The role of cognitive distortion and parental bonding in depressive symptoms: Exploring the role of family subsystems

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Adolescence is marked by dramatic developmental changes in physical, cognitive, and social-emotional aspects. To date, there is limited information on long-term outcomes that centre on adolescent depression which explores the role of family subsystems. This study investigates the role of psychosocial variables as correlates and antecedents to depressive symptoms among male adolescents. It further explores the impact of parent-child relationship and cognitive distortion to depressive symptoms. A battery of self-report measures was administered to 150 male adolescents. Regression analysis reveals four variables that were linked to adolescent depression. Father overprotection ($\beta = 0.10$) is positively linked to depression among male adolescents, while father care dimension of parent-child relationship is linked to adolescent depression ($\beta = 10.10$). The findings also suggest that as mothers, as mothers exert a degree of psychological control, the high-quality parent-child relationship a son share with his father becomes less of a risk for adolescent aggression. Overall, these outcomes support the improvement of access to adolescent mental health services.

Keywords: adolescent depression, adolescent mental health, cognitive distortion, family subsystems

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BACKGROUND

In recent years, research has examined the role of heightened emotional reactivity and poor regulation on maladjustment during childhood and adolescence. Although much of this research has shown a direct link between high emotional reactivity and maladjustment, there is less research on the ways in which reactivity interacts with contextual factors. Using data from the National Institute of Child Health & Human Development Study of Early Child Care and Youth Development (SECCYD), the current study asks how emotional reactivity in childhood, household chaos, and household income impact changes in emotional and behavioural problems between childhood and adolescence (Shapero & Steinberg, 2013).

Adolescence is also a period which is beset by a number of challenges. For instance, engagement in risk behaviours is more common among adolescents. Engagement in risk behaviours may pose a significant threat to health if involvement spans multiple behaviours. The asset model suggests that contextual aspect of young people's lives, such as factors related to family, school and community, serve as a protective function against health risk behaviours (Brooks, Magnusson, Spencer, & Morgan, 2012). Even though most adolescents are able to cope with such dramatic changes, a large number of them encounter problems and difficulties brought about by such changes; they may develop mental health problems, especially depression (Rushton, Forcier, & Schectman, 2002).

One recent study (Bellis et al., 2017) has also observed that adverse childhood experiences (ACEs) including child abuse and household problems (e.g. domestic violence) increase risks of poor health and mental well-being in adulthood. Factors such as having access to a trusted adult as a child may impart resilience against developing such negative outcomes. How much childhood adversity is mitigated by such resilience is poorly quantified. Here we test if access to a trusted adult in childhood is associated with reduced impacts of ACEs on adoption of health-harming behaviours and lower mental well-being in adults.

While the link between positive ageing and the perception of loneliness has been well-established (Pilao, Relajo, Tubon, & Subida, 2016), it is also well-known that psychological distress during adolescent period of the life span is common experience that may be due to the innumerable changes adolescents face (Ollendick, Seligman, Goza, Byrd, & Singh, 2003). In the UK, there are findings (e.g. Bone, 2016) which illustrate schools can facilitate students' transition, protect them from isolation, boost their emotional well-being, and support their academic confidence, not only increasing their academic attainment but preparing them for life-long learning. This research is not only of value to students but also to teachers, headteachers and governors as well as academics and leaders of further education who lobby for more resilient, competent and buoyant learners. The intersection of these experiences, coupled with other environmental stressors can result in elevated distress, such as anxiety and depression (Rapee, Wignall, Hudson, & Schniering, 2000). These stressors are sometimes manifested in academic performance, such as reading abilities (Relajo, dela Rosa, & Pilao, 2016).

Beck and Gable (2001) defines depression in cognitive terms. It is based on the underlying theoretical assumption that the affection and behaviour of an individual are determined in great measure by the way an individual structures the world. His cognitions are based on attitudes and assumptions developed from previous experiences. The cognitive model states that there are specific concepts to explain the psychological substrata of depression: cognitive triad, schemas, and cognitive errors.

The cognitive triad consists of three main cognitive patterns: (i) patients view themselves negatively; (ii) they interrupt their experiences negatively; and, (iii) they have a negative view of the future. The second component of the cognitive model is the structural organisation of thought which Beck called schema –

relatively stable cognitive patterns that constitute model. Furthermore, Beck and Gable (2001) argue that a schematic interpretation always mediates between experience and emotional responses. A person's negative and distorted cognition in a concrete situation are considered errors in the processing of information, which are also called 'automatic thoughts'. As explained by Berry and Danquah (2016), attachment theory provides a useful framework to inform psychological therapy with adults, but there is a pressing need for further research to empirically demonstrate the 'added value' of an attachment perspective.

Indeed, adolescence is a period where an individual could potentially have a notable experience of self-compassion (Relajo, 2016). There are also numerous studies which have underscored how adolescence is a period when fitting and connecting with others is highly valued; thus, interpersonal conflicts in close relationships can lead to even greater anxiety and depression levels (e.g., Jenkins, Goodness & Buhrmester, 2002). Vast amounts of literature highlight adolescents' need for a sense of belongingness and the importance it plays in their daily relationship. As per the hierarchy attachment model, adolescent-mother attachment outweighed adolescent-father attachment to some extent in predicting adolescents' perceived social interrelationship measures. As per the integration attachment model, significant differences emerged on most social interrelationship measures between the four distinct subgroups: secure attachment to both parents, neither, only father, and only mother (Al-Yagon, Kopelman-Rubin, Brunstein Klomek, & Mikulincer, 2016).

In one study, it has been argued that depressive symptoms were differentially related to eating concerns and depressive symptoms and this may give clues as to which aspects of shame are important in each of the two types of pathology (Gee & Troop, 2003). This emphasise the notion that cognitive distortions are likely to lead to depression in adolescents and the chances are further maximised if they have faulty relationship with their parents. Scher, Ingram, and Segal (2005) explain that cognitive vulnerability is a central concept in cognitive theories of unipolar depression. This idea suggests that negative cognitive factors emerge during stressful situations, and that this cognitive reactivity is critical for the onset, relapse, and recurrence of depression. The number of empirical investigations that model the diathesis-stress nature of cognitive reactivity has substantially increased within the last decade. This review examines this literature, with a focus on priming and longitudinal designs. Extant research supports the concept of cognitive vulnerability to depression among adults, and support is accruing for the validity of this concept among children. Research that examines direct links between cognitive vulnerability and depression onset, relapse, and recurrence and the attachment origins of cognitive vulnerability is also accruing, although at a slower pace.

Meanwhile, domestic violence negatively impacted children's behaviour with their mothers in interactions but did not influence maternal report of problem behaviours, suggesting that the impact of domestic violence begins very early and in the realm of relationships rather than in mental health (Levendosky, Huth-Bocks, Shapiro, & Semel, 2003). Kim and colleagues (2003) found that depressed youths were subject to harsher and less consistent parenting, as reported by both the child and the parent, compared to youths who were not depressed. Using data collected as part of the National Longitudinal Survey of Youth, it has been revealed that mother's use of physical punishment predicted children's depressive symptoms (Eamon, 2002). While prior work has theorised that certain populations may be at increased psychological vulnerability from intimate partner violence (IPV), recent finding indicate that both perpetration and victimisation are associated with increases in depressive symptoms for both men and women, and irrespective of whether these types of violence exposure occurred in adolescence or young adulthood. Cumulative exposure to IPV does not appear to increase depressive symptoms beyond the effect observed for the most recent IPV exposure, but physical maltreatment by a parent does appear to diminish the association between IPV perpetration and depressive symptoms for a small subset (Johnson, Giordano, Longmore, & Manning, 2014).

More recently it has been observed by Guassi Moreira & Telzer (2017) that changes in relationship quality moderated the association between sensation seeking and risk-taking, such that sensation seeking predicted higher risk-taking behaviours during the first semester of college, but only for those who reported increases in relationship quality across the college transition. These results suggest that increased relationship quality may have an inadvertent spill over effect by interacting with sensation seeking to increase risky behaviours.

Interaction between parents and children are determining the quality of parent-child relationship. Negative interactions in a family can lead to blame game. Adolescents may blame their aggressive and depressive behaviours on their parents' rejecting attitude, and parents may excuse their rejecting attitudes on their children's behaviours. But instead of blame, perhaps it is more a question of dysfunctional interactions that are self-perpetuating, negativity begetting negativity as it were. Few studies have examined both maternal and paternal parenting practices in the prediction of child outcomes despite evidence that underscores the salience of fathers throughout their children's development. This study examined the role of the quality of father-child and of mother-child relationships in buffering the influence of ineffective parenting practices on subsequent adolescent aggression.

Measures of parental psychological control, the quality of the parent-child relationship, and youth aggressive behaviour were completed by 163 (49% female) mostly White and Asian adolescents and their parents during the eighth and ninth grades. Paternal psychological control predicted aggression when adolescents perceived low-quality relationships with their mothers. Similarly, maternal psychological control predicted aggression when adolescents perceived low-quality relationships with their fathers. Maternal psychological control was also associated with lower levels of aggression among adolescent males who reported a high-quality relationship with their father. The findings indicate that when one parent exerts psychological control, the low-quality relationship the adolescent shares with the opposite gender parent increases the risk for adolescent aggression (Murray, Dwyer, Knighton-Wisor, & Booth-LaForce, 2014).

In view of the earlier studies, this study sought to identify the role of cognitive distortion and parental bonding in depressive symptoms among male adolescents in a randomised crossover trial. The study also aims to ascertain the extent to which parent-child relationship, specifically father care and mother care; and, father overprotection and mother overprotection differ in the way they contribute to depressive symptoms among adolescents.

METHODS

A total of 150 male adolescents aged 18–19 were selected through random sampling. The educational institution was randomly selected from a list of higher educational institutions in India. The subject chosen for the study were also randomly selected from a class of 40–50 students. All tests were administered in the group of 20–30 students. Stepwise multiple regression analysis was carried out to identify the contribution of cognitive distortion i.e., self-criticism, self-blame, helplessness, hopelessness, and preoccupation with danger. Another factor that was investigated is the parent child relationship which consists of mother care, mother overprotection, father care, and father overprotection – towards depressive symptoms

Survey instrument

Reynolds Adolescent Depression Scale (RADS-2) was developed by William Reynolds (2010) to measure the severity of depressive symptoms in adolescents in clinical settings. The RADS-2 is a brief, 30-item self-report measure that includes subscales which evaluate the current level of an adolescent's depressive symptoms along four basic dimensions of depression: (1) dysphoric mood; (2) anhedonia; (3)

negative self-evaluation; and, (4) somatic complaints. In addition to the four subscale scores, the RADS-2 yields a depression total score that represents the overall severity of depressive symptoms. The reliability and validity of the test is well-established with internal consistency of 0.86, test-retest of 0.80, and validity criterion of 0.83.

Cognitive Distortion Scales (CDS) was developed by John Briere (2000). It measures distorted or negative cognitions and consists of 40 items. Each symptom item is rated according to its frequency of occurrence over the preceding month; using a five-point scale range from never to very often. The five subscales are self-criticism, self-blame, helplessness, hopelessness, and preoccupation with danger. The score on each dimension can be added to 9, which is the total score. The reliability and validity of the test is well-established, with reliability of 0.89 and validity of 0.94.

Parental Bonding Instrument (PBI) was developed by Parker, Tupling and Brown (1979). PBI is a 25-item instrument designed to assess the children's perception to parent-child relationship in terms of parental behaviours and attitudes. The authors identified two variables that are important in developing parent-child bonding: (1) care and, (2) overprotection. Out of 25 items, 12 items measure children's perception of their parents as caring with the opposite end of the spectrum being indifference or rejection, the remaining 13 items assess children's overprotectiveness with the extreme opposite being encouragement and independence. The care subscale allows maximum of 36 and overprotection a score of 39. The scale yields information on four dimensions, namely: mother care, father care, mother overprotection, and father overprotection. The participants' responses are scored on a four-point scale ranging from 'very likely' to 'very unlikely'. Some of the items are reverse scored. The PBI demonstrated high internal consistency with split-half reliability coefficients of 0.88 for care and 0.74 for overprotection. The instrument shows good concurrent validity and correlated significantly well with independently rated judgement of parental care and overprotection.

Statistical analysis

Stepwise multiple regression analysis was carried out to identify the level of variance in dependent variable that could be accounted by the different variables (cognitive distortion dimensions and parent-child relationship dimensions) and the impact of each dependent variable. Total depression scores generated from RADS-2 were taken as the criterion.

RESULTS, INTERPRETATION AND DISCUSSION

As can be gleaned from Table 1, the highest positively contributing dimension is self-criticism ($\beta=0.60$) which was followed by helplessness ($\beta=0.34$), preoccupation with danger ($\beta=0.22$), self-blame (0.14), and father overprotection ($\beta=0.10$). Whereas, father care dimension of parent-child relationship was contributing negatively towards adolescent depression ($\beta=0.10$).

Table 1
Stepwise Multiple Regression Analysis for Adolescent Depression

	R	R ²	R ² Δ	P	β	P
Self-criticism	0.60	0.36	0.36	0	0.60	<0.01
Helplessness	0.67	0.44	0.08	0	0.34	<0.01
Preoccupation with danger	0.68	0.47	0.03	0	0.22	<0.01
Father overprotection	0.69	0.48	0.01	0	0.10	<0.01
Father care	0.70	0.49	0.01	0	0.10	<0.01
Self-blame	0.71	0.50	0.01	0	0.14	<0.01

It was revealed from the table that self-criticism ($\beta=0.60$) is positively contributing to adolescent depression. Self-critical concerns are fuelled by difficulties maintaining a positive, effective sense of self, signalled by fear of failure and excessive need for autonomy and control (Blatt & Zuroff, 1992).

According to Blatt and others (e.g., A. T. Beck), self-definition, or one's sense of self and one's sense of relatedness to others represent core lifespan developmental tasks. This study examined the role of events pertaining to self-definition or relatedness in the development of personality traits from each domain (self-criticism and dependency), and their relationship to the development of depressive and anxiety symptoms. Two hundred seventy-six early adolescents completed a measure of self-criticism and dependency at baseline and again 24 months later, along with measures of depressive and anxiety symptoms. Every three months, participants completed a measure of life events, which were coded as self-definitional or relatedness oriented (80% rater agreement, kappa = .70). Structural equation models showed that self-definitional events predicted increases in self-criticism, which in turn predicted increases in depressive symptoms, whereas relatedness events predicted increases in dependency, although dependency was unrelated to change in symptoms (Kopala-Sibley, Zuroff, Hankin, & Abela, 2015).

Table 1 further suggests that various cognitive distortion dimensions are also contributing towards depression in adolescents. It has been reported that self-reported exposure to stressful life events was associated longitudinally with increased engagement in rumination. In addition, rumination mediated the longitudinal relationship between self-reported stressors and symptoms of anxiety in both samples and the relationship between self-reported life events and symptoms of depression in the adult sample. Identifying the psychological and neurobiological mechanisms that explain a greater propensity for rumination following stressors remains an important goal for future research. This study provides novel evidence for the role of stressful life events in shaping characteristic responses to distress, specifically engagement in rumination, highlighting potentially useful targets for interventions aimed at preventing the onset of depression and anxiety (Michl, McLaughlin, Shepherd, & Nolen-Hoeksema, 2013).

One study (Lecompte & Moss, 2014) has suggested that early intervention with mother-child dyads during this developmental period may promote more adaptive attachment behaviours that could subsequently change the developmental trajectory of these "at-risk" children. Moreover, a special focus might be on improving mother-child interactions, as we know now that disorganised children are likely to have interactions that are characterised by role reversal. In addition, these findings point to the need to work with mothers to help them with their roles as parents to prevent caregiving helplessness, which we know now, along with role reversal, plays an important role in explaining the association between disorganised/controlling attachments and externalising problems in adolescence. These findings will be important for future prevention and intervention efforts.

CONCLUSION

Preoccupation with danger ($\beta=0.22$) as dimension of cognitive distortion is contributing positively towards adolescent depression. Self-blame ($\beta=0.71$) as dimension of cognitive distortion is contributing positively towards adolescent depression. It seems that adolescents give up against the problem and they have no way of dealing with the depression. Depressed adolescents appear to have predominantly cognitive symptoms with negative thought processes such as feelings of self-blame, self-hate, punishment, dissatisfaction and failure. Moreover, because of the digital age, adolescents are facing more stressors. For instance, smartphone ownership was related to more electronic media use in bed before sleep, particularly calling/sending messages and spending time online compared to adolescents with a conventional mobile phone. Smartphone ownership was also related to later bedtimes while it was unrelated to sleep disturbance and symptoms of depression. Sleep disturbance partially mediated the relationship between electronic media use in bed before sleep and symptoms of depression.

Electronic media use was negatively related with sleep duration and positively with sleep difficulties, which in turn were related to depressive symptoms. Sleep difficulties were the more important mediator than sleep duration. The results of this study suggest that adolescents might benefit from education regarding sleep hygiene and the risks of electronic media use at night (Lemola, Perkinson-Gloor, Brand, Dewald-Kaufmann, & Grob, 2015). Previous works show that eliminating these distortions and negative thoughts is said to improve mood and discourage maladies such as depression and chronic anxiety. The process of learning to refute these distortions is known and “cognitive restructuring”.

Father overprotection ($\beta=0.10$) is positively contributing to depression among male adolescents. According to theoretical views, parental overprotection may lead to anxiety by increasing beliefs in dangerousness of the situation and the lack of ability to avoid the danger (Rapee, 1997). Descriptions of parental authority and of the formation of a secure parent-child bond have remained unconnected in conceptualisations about parenting and child development. The parental anchoring function is here presented as an integrative metaphor for the two fields. Parents who fulfil an anchoring function offer a secure relational frame for the child, while also manifesting a stabilising and legitimate kind of authority. The anchoring function enriches the two fields by: (1) adding a dimension of authority to the acknowledged functions of the safe haven and the secure base that are seen as core to a secure parent-child bond, and (2) adding considerations about the parent-child bond to Baumrind's classical description of authoritative parenting (Omer, Steinmetz, Carthy, & Schlippe, 2013).

The results of analysis also suggest the father care is an important predictor depression among male adolescents. Father care dimension of parent-child relationship is contributing negatively towards adolescent depression ($\beta=0.10$). Father's interactions exert a powerful influence on every domain of their children's functioning beginning at infancy.

A meta-analysis was undertaken, including 66 studies, to determine the relationship between father involvement and the educational outcomes of urban school children. Statistical analyses were done to determine the overall impact and specific components of father involvement. The possible differing effects of paternal involvement by race were also examined. The results indicate that the association between father involvement and the educational outcomes of youth overall is significant statistically. Paternal involvement, as a whole, yielded effect sizes of usually just less than .2 of a standard deviation unit. The positive effects of father involvement held for both White and minority children (Jeynes, 2015).

Parents influence their children in similar ways with regard to development of morality, competence in social interactions, academic achievement, and mental health. Fathers' role may be especially important in the psychosocial development of a male adolescent. However, father involvement is of a different nature than mother involvement.

While demographers continue to document the notable changes in family structure that have occurred in recent decades, little is known about the quality of parental investment that children receive across a range of contemporary family types. Employing data from a recent US urban birth cohort, parental investment was examined for children ages 1, 3, and 5 in two key domains: parent-child engagement (across three potential parent figures) and access to economic resources. Overall, it has been revealed that children living with their married biological parents are advantaged in both parental engagement and household income, while children living in other family types are less advantaged in one or both domains. This illuminates how changing family demography is related to parental investments in children, which has implications for public policies designed to support low-income families (Carlson & Berger, 2013).

Overall regression analysis suggests that out of cognitive distortion and parent-child relationship dimensions, self-criticism, hopelessness, preoccupation with danger, father overprotection and self-

blame are contributing positively towards adolescent depression. Father care is negatively contributing to adolescent depression scores. Father care plays an important role in the depression among male adolescents.

Institutional caregiving is associated with significant deviations from species-expected caregiving, altering the normative sequence of attachment formation and placing children at risk for long-term emotional difficulties. However, little is known about factors that can promote resilience following early institutional caregiving. In the current study, we investigated how adaptations in affective processing (i.e., positive valence bias) and family-level protective factors (i.e., secure parent-child relationships) moderate risk for internalising symptoms in previously institutionalised (PI) youth. Children and adolescents with and without a history of institutional care performed a laboratory-based affective processing task and self-reported measures of parent-child relationship security. PI youth were more likely than comparison youth to show positive valence biases when interpreting ambiguous facial expressions. Both positive valence bias and parent-child relationship security moderated the association between institutional care and parent-reported internalizing symptoms, such that greater positive valence bias and more secure parent-child relationships predicted fewer symptoms in PI youth. However, when both factors were tested concurrently, parent-child relationship security more strongly moderated the link between PI status and internalising symptoms. These findings suggest that both individual-level adaptations in affective processing and family-level factors of secure parent-child relationships may ameliorate risk for internalising psychopathology following early institutional caregiving.

It is clear that parent-child relationship and inaccurate thoughts and ideas are important determinants of depressive symptoms among adolescents. Adolescence is a challenging phase of life. However, healthy parent-child relationship can cushion the effects of ruthless biopsychosocial changes of this period. Adolescents need to be educated as to how to make healthy appraisals of events and occurrences within and around them and a healthy parent-child relationship can ensure better psychological health in adolescents.

LIMITATIONS AND FUTURE DIRECTIONS

Although the current investigation provides useful insight for understanding depression which has important implications for dealing positively with the issue of adolescent depression but the study is not free from limitation. The study was only limited to with male adolescents ageing 18-19. Hence, the findings should not be generalised. Moreover, the sample was selected from Delhi City which limits the scope for the generalisation of the findings. The focus of the investigation was on studying the relative contribution of subscales of cognitive distortion (self-criticism, self-blame, helplessness, and preoccupation with danger) and the dimensions of parent-child relationship (mother care, mother overprotection, father care, and father overprotection). However, there are many other variables that might contribute towards adolescent depression which might be studied in the future. This finding calls for the improvement of access to adolescent mental health services.

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