

MOTHER-CHILD ATTACHMENT SECURITY AND SYMPTOMS OF DEPRESSION IN MIDDLE CHILDHOOD

^aMÁRIA HALAMOVÁ, ^bMARTA POPELKOVÁ

*Department of Psychological Sciences
Faculty of Social Sciences and Health Care, Constantine the
Philosopher University in Nitra
Kraskova 1, 949 74 Nitra, Slovak Republic
email: ^amaria.baratova@ukf.sk or m.halamova9@gmail.com,
^bmpopelkova@ukf.sk*

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Abstract: This study examined the role of mother-child attachment security in the development of children's depressive symptoms in middle childhood. The quality of attachment was assessed in a sample of one hundred and thirty-nine 9-12 year-old children using self-report questionnaire Security Scale (version for mother). Depressive symptoms were measured by Children's Depression Inventory. When child's sex and age were controlled for, mother's availability was a particularly important predictor of lower levels of depression and the majority of symptoms, whereas mother's reliance was not. Findings are further discussed within the context of normative changes in attachment in middle childhood and previous research on associations between attachment and internalizing problems.

Keywords: attachment, availability, reliance, middle childhood, depression

1 Introduction

The most frequent behavior problems in childhood and adolescence can be categorized in two broad categories, namely internalizing and externalizing problems. Internalizing problems (in general) are inner directed and present with symptoms that are related to overcontrolled behaviors (In-Albon, 2012). Internalizing symptoms refer to feelings of loneliness, anxiety and depression. Family factors, including attachment, are particularly important for explaining the origins of these behavior problems.

Attachment theory emphasizes the importance of attachment relationships in shaping an individual's views of him- or herself and the world around them. Attachment is referred to as a long-lasting affective bond between a child and a caregiver that provides the child with feelings of security, comfort and support (Liebermann et al., 1999). The quality of attachment relationships reflected in terms of psychological expected availability of the attachment figures and reliance on their help stems from early interactions with the caregivers. Attachment theorists claim that early family experiences that are dysfunctional, through insensitive or non-responsive parenting lead to the development of insecure attachment, whereas attachment security is fostered by sensitive care and consistently responsive caregivers (Bowlby, 2010).

Attachment theory also suggests that greater positive and fewer negative individual's outcomes are related to secure attachment. The quality of attachment relationship is considered to be a factor that may influence emotion regulation difficulties and subsequent problems. Internalizing problems may result from actual or threatened loss of attachment relationships. According to Bowlby (2013), securely attached children use the attachment figure as a secure base from which to explore and to return in times of distress. Further, they perceive their caregivers as available, responsive and reliable. In contrast, insecurely attached children perceive their caregivers as unavailable and unresponsive and cannot rely on their help in times of distress. Therefore, insecurely attached children are more susceptible to developing feelings of fear, anxiety and depression due to the lack of the confidence in their caregivers' ultimate accessibility (Bowlby, 2013). When the child is confident that the attachment figure is readily accessible, he/she will be less prone to feel anxious, lonely or depressive than the child who is uncertain what to expect from the caregiver.

According to attachment theory, the quality of attachment relationships has a continuing effect on patterns of adaptation

(Bowlby, 2012). Associations between maternal attachment relationships and internalizing behaviors (in general) throughout a lifespan are well established. Evidence linking the quality of attachment relationship to internalizing problems suggests that there is the main effect of attachment security (Dallaire, Weinraub, 2007). More specifically, recent studies indicated that securely attached children, adolescents and adults, compared to those with insecure attachments, show lower levels of internalizing symptoms (internalizing problems were conceptualized as a broad category of symptoms including anxiety, loneliness, depressive feelings etc.) (see Brumariu, Kerns, 2010; Deklyen, Greenberg, 2008; Dozier et al., 2008, for reviews).

However, Brumariu and Kerns (2010) postulated that attachment security is more consistently related to symptoms of depression or anxiety than to global internalizing symptoms. According to depression, links with the quality of attachment relationships are well documented only in the developmental period of adolescence and adulthood (Brumariu, Kerns, 2010; Dozier et al., 2008). In particular, insecurity in attachment relationships was associated with higher prevalence of non-clinical and clinical levels of depression in adolescents and adults (Bifulco et al., 2002; Constantino et al., 2013; Kullick, Petermann, 2013).

Our understanding of the role of mother-child attachment security in the development of depressive symptoms in middle childhood is limited, however, as relatively few empirical studies exists. Many symptoms of depression do not become prevalent until later middle childhood (9/10-12 years of age). That is why in the period of middle childhood, global internalizing problems are assessed, instead of specific forms of emotional maladjustment, including depression.

Recent research indicates that associations between secure attachment and depression in middle childhood are similar to those found for adolescents and adults. In particular, researchers found that higher levels of security in mother-child attachment relationships are related to lower levels of depression in 8-12 year-old children (Brenning et al., 2011; Brumariu, Kerns, 2010; Gullone et al., 2006). The current study attempts to replicate and extend these findings. Given the theoretical and empirical links between insecurity and internalizing behaviors, we expect children with secure attachment to be less prone to the development of depression.

Of particular relevance to the present study is the very limited investigation of the role played by perceived availability of the attachment figure and perceived reliance on the attachment figure's help in adjustment of children in middle childhood. Indeed, research examining the influence of these crucial components of attachment on the development of internalizing behaviors is almost totally non-existent. One notable exception is Richaud de Minzi's (2006) study. Her study involved the sample of 1019 children between 8 and 12 years of age and examined the relationship between attachment, parenting, self-competence, loneliness and depression. Her findings revealed that mothers' and fathers' availability and reliance protected children from internalizing problems. Children who perceived their parents as available and relied on their help felt less lonely and depressive. Further research investigating whether perceived availability and reliance predict the development of internalizing problems is needed. Thus, in the present study, we investigated children's perceptions of mothers' availability and reliance as predictors of symptoms of depression.

1.1 The present study

In summary, attachment security is considered to be the important factor of psychological development throughout the lifespan. Secure attachment relationships support adjusted behavioral strategies and healthy emotional development,

whereas insecurity is related to greater negative outcomes. However, there is the lack of empirical evidence linking the quality of attachment relationships to specific forms of emotional maladjustment, especially symptoms of depression, in the developmental period of middle childhood.

Therefore, the focus of the current report is on the links between concurrent mother-child attachment and internalizing problems in the sample of Slovak children in middle childhood. Building on the work of others (Brenning et al., 2011; Brumariu, Kerns, 2008; Gullone et al., 2006; Richaud de Minzi, 2005), we investigated the role of perceived attachment security in prediction of symptoms of depression at school age, accounting for children's characteristics – age and gender.

Though other studies examined associations between attachment and internalizing problems in middle childhood, the present study is an improvement over previous studies in a number of ways. First, internalizing problems are not conceptualized in general. We focus specifically on behaviors relating to depression to better isolate depression from more general withdrawn and somatic symptoms and from more general feelings of inferiority, inadequacy or negativism. Second, in addition to examining depression in children in general, specific emotional, behavioral and social symptoms are examined. Third, main effects of the key aspects of attachment (perceived availability of mother and perceived reliance on mother's assistance in situations of distress) are investigated.

2 Method

2.1 Participants and procedure

The sample consisted of 139 children in 4th, 5th and 6th grade, 72 males and 67 females. The mean age of children was 10.79 (range 9-12 years). The sample was recruited from elementary schools in Nitra region. Parental permission was obtained for participation.

2.2 Measures

The *Security Scale* (Kerns et al. 2006) is a self-report questionnaire designed to assess children's perceptions of security in parent-child relationships in middle childhood. Children are presented statements about two types of children and asked to choose which type of children they are more like and to indicate the strength of endorsement (really true or sort of true). Each item is scored on a four-point scale. Items on the Security Scale tap the following dimensions – key components, of attachment representation in middle childhood: availability of the attachment figure (perceiving parent as available) and reliance on the attachment figure (seeking or valuing parental help in times of stress). The subscale items scores for Availability and Reliance are averaged to produce single scores on continuous dimensions. Higher scores reflect children's perceptions of greater reliance on parents or greater availability of parents. Slovak version of the Security Scale displayed adequate levels of validity and reliability (Barátová, Popelková, 2015). Children completed the items only for mother. Alphas obtained for Availability and Reliance subscales in this sample were $\alpha = .70$ and $\alpha = .71$, respectively.

The *Children's Depression Inventory – CDI* (Kovacs, Slovak version Preiss, 1998) is a self-report instrument designed to measure depression in childhood and adolescence. The child is asked to endorse the one of three descriptions that best applies to him or her during the last 2 weeks. Responses are scored on the 0-2 scale. Items are divided into 5 subscales: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia and Negative Self-esteem. Items scores are summed so that higher score indicates greater frequency and severity of depressive symptoms. The total depression score is derived by summing all items scores. The psychometric properties of the CDI are adequate. Alphas reported for the present sample ranged $\alpha = .78$ - .81.

2.3 Statistical Analysis

SPSS (The Statistical Package for Social Sciences) version 21.0 was used for computing descriptive statistics, correlations and six separate hierarchical regression analyses with CDI total depression score and subscale scores as dependent variables. The relevant assumptions of this statistical analysis were met. According to previous research, child's age and gender were included as control variables on step 1. As a block on step 2, mother-child attachment security – Availability and Reliance subscales scores were entered. Significant changes in amount of variance accounted for (ΔR^2) are noted and significant predictor variables are noted with asterisks next to the standardized regression coefficient (β). In addition, the effect size Cohen's f^2 is presented – values of .02, .15 and .35 are considered small, medium and large effects, respectively (Cohen, 1992).

3 Results

Descriptive statistics (means and standard deviations) for all variables are presented in Table 1. All variables are distributed normally.

Correlation analyses revealed that higher levels of availability and reliance were related to lower levels of overall depression, $r = -.416$, $p < .01$ and $r = -.224$, $p < .05$, respectively, and negative self-esteem, $r = -.478$, $p < .01$ and $r = -.207$, $p < .05$, respectively. Further, correlations revealed that higher levels of availability were related to lower levels of negative mood, $r = -.235$, $p < .01$, ineffectiveness, $r = -.309$, $p < .01$ and anhedonia, $r = -.248$, $p < .05$, whereas higher levels of reliance were related to lower levels of interpersonal problems, $r = -.288$, $p < .01$. Other correlations between availability and reliance and the CDI subscales were small in magnitude or nonsignificant. In addition, the subscales of the Security Scale were moderately correlated, $r = .543$, $p < .01$.

Table 1: Descriptive statistics of variables used in the present study

Variable	M	SD
1. Availability	3.37	.53
2. Reliance	3.25	.35
3. Total depression score	10.27	6.31
4. Negative Mood	2.04	1.79
5. Interpersonal Problems	.74	.88
6. Ineffectiveness	1.76	1.62
7. Anhedonia	3.24	2.31
8. Negative Self-esteem	1.78	1.21

Note: M – mean, SD – standard deviation

The results of the analyses regressing depression and negative mood are summarized in Table 2, the results of the analyses regressing interpersonal problems and ineffectiveness in Table 3 and the results of the analyses regressing anhedonia and negative self-esteem in Table 4.

When predicting depression in general, the overall model was significant and accounted for 19.2% of variance in depression. When gender and age were entered into the regression equation in step 1 as control variables, they explained 1.8% (ns) of variance. The addition of mother-child attachment security (step 2) predicted depression significantly, $\Delta F(2,134) = 14.417$, $p < .001$, $f^2 = 0.22$, with mother's availability predicting uniquely, $\beta = -.341$, $p < 0.001$. That is, the more children perceived their mother as available, the less depression they reported.

When predicting specific symptoms, final models were significant and overall variance explained by predictors ranged 9.9 – 23.1%. When age and gender were controlled for (step 1), attachment security (step 2) predicted depression symptoms significantly, accounting for additional 10.2% of variance in negative mood, $\Delta F(2, 134) = 7.830$, $p < .01$; 9.8% of variance in interpersonal problems, $\Delta F(2, 134) = 7.361$, $p < .01$; 7.0% of variance in ineffectiveness, $\Delta F(2,134) = 5.390$, $p < .01$; 8.9% of variance of anhedonia, $\Delta F(2,134) = 6.641$, $p < .01$; and 21.4% of variance of negative self-esteem, $\Delta F(2,134) = 18.624$, $p < .01$.

.001. The effect sizes ranged from $f^2 = .08$ to $f^2 = .29$ and were small to medium in magnitude.

Both attachment security variables had significant zero-order correlations with analyzed symptoms, but their partial effects in full models were different. Mother's availability predicted four categories of depressive symptoms – negative mood, $\beta = -.331$, $p < .01$; ineffectiveness, $\beta = -.209$, $p < .01$; anhedonia, $\beta = -.235$, $p < .01$; and negative self-esteem, $\beta = -.447$, $p < .001$. On the other hand, mother's reliance predicted only symptoms related to interpersonal problems, $\beta = -.221$, $p < .01$. The results indicate that children who viewed their mother as available reported less symptoms associated with negative mood, anhedonia, ineffectiveness and negative self-esteem, whereas children who perceived their mother as reliable reported less interpersonal difficulties.

Table 2: Hierarchical regression analyses predicting children's overall depression and negative mood

Predictor	Depression		Negative mood	
	ΔR^2	β	ΔR^2	β
Step 1.				
Control variables	.018		.019	
Age		.135		-.033
Gender		-.014		.135
Step 2.				
Attachment security	.174***		.102**	
Availability		-.140		-.011
Reliance		-.341***		-.327**
Overall R^2	.192***		.121**	

Note: gender – 0 = male, 1 = female, β – standardized regression coefficient, ΔR^2 – changes in amount of variance accounted for, R^2 – coefficient of determination, ** $p < .01$; *** $p < .001$

Table 3: Hierarchical regression analyses predicting children's interpersonal problems and ineffectiveness

Predictor	Interpersonal problems		Ineffectiveness	
	ΔR^2	β	ΔR^2	β
Step 1.				
Control variables	.002		.051*	
Age		.039		.193*
Gender		.018		-.127
Step 2.				
Attachment security	.098**		.070**	
Availability		-.221*		-.098
Reliance		-.145		-.209*
Overall R^2	.100**		.122**	

Note: gender – 0 = male, 1 = female, β – standardized regression coefficient, ΔR^2 – changes in amount of variance accounted for, R^2 – coefficient of determination, * $p < .05$; ** $p < .01$

Table 4: Hierarchical regression analyses predicting children's anhedonia and negative self-esteem

Predictor	Anhedonia		Negative Self-esteem	
	ΔR^2	β	ΔR^2	β
Step 1.				
Control variables	.010		.017	
Age		-.018		.110
Gender		.100		-.077
Step 2.				
Attachment security	.089**		.214***	
Availability		-.110		-.061
Reliance		-.235*		-.447***
Overall R^2	.099**		.231***	

Note: gender – 0 = male, 1 = female, β – standardized regression coefficient, ΔR^2 – changes in amount of variance accounted for, R^2 – coefficient of determination, * $p < .05$; ** $p < .01$; *** $p < .001$

3 Discussion

The purpose of this study was to examine concurrent associations between mother-child attachment security and depression among children in the developmental period of middle childhood. Two major findings derived from the study. First, the evidence converged to indicate that secure attachment to mother is related to lower frequency and intensity of symptoms of depression in school-aged children. Second, perceived maternal availability seems to be more relevant for the development of internalizing problems in middle childhood than seeking mother's proximity in stressful situations.

An additional unique aspect of the present investigation is the use of the Security Scale questionnaire for the assessment of attachment security. Given limited instruments and measures to assess attachment during the post-infancy- pre-adolescent period, our findings provide valuable construct validity evidence for the Slovak version of this tool.

Overall associations provided in our study seem to be in agreement with foreign longitudinal and cross-sectional studies showing links between attachment and internalizing problems. Evidence linking attachment to internalizing symptoms, including depression, suggests that there is the main effect of attachment security (Brumariu, Kerns, 2010). Results of this study indicate that secure attachment relationship with mother may protect children in middle childhood against the development of depressive behavior. Children, who were insecurely attached, reported higher levels of depression and related symptoms than children who were securely attached. Secure attachment towards mother was associated with lower scores on symptoms and signs of depression. Results suggest that secure attachment representations continue to influence children's adjustment in positive ways beyond infancy. Security and stability in the mother-child relationship promotes the development of adequate coping, regulation and interpersonal strategies, whereas the lack of the secure base creates feelings of depression, inadequacy and sadness. Therefore, emotional maladjustment may be a consequence of children experiencing caregivers' unavailability and unresponsiveness.

Results indicate that perceived availability might play the unique role in the development of symptoms of depression. When demographics were controlled for, mother's availability predicted lower levels of depression and symptoms associated with negative mood, ineffectiveness, anhedonia and negative self-esteem, whereas mother's reliance did not. Higher reliance on mother's help contributed only to less interpersonal problems. Findings are in line with normative developmental changes in the attachment behavioral system that have been reported earlier in the literature (Kerns, 2008; Kerns et al., 2006; Lieberman et al., 1999). In middle childhood, the set goal of the attachment system shifts from proximity to availability of the attachment figure, including open communication, responsiveness to attachment needs and accessibility of the caregiver (Bowlby, 2010). Further, empirical evidence suggests that parental commitment, rather than parental assistance, remains crucial in the period of middle childhood. Kerns et al. (2006) and Lieberman et al. (1999) found that sixth graders reported relying on their parents less than did third graders. Results of these studies indicate that perceptions of utilization but not availability decline with age. The maintenance of the attachment figure's physical proximity is less essential in older children due to increased physical and mental capacities such as improved capacity for reasoning ability, self-reflection and regulation or greater attention to psychological traits and states (Lieberman et al., 1999). Children in middle childhood develop better coping strategies and become more capable and less dependent on parents; therefore, they might need to rely on their assistance less often over time. In accord with our findings, children's expectations and beliefs about attachment figures – perceived availability of the caregiver, affect the development of maladjustment importantly, whereas attachment figures' proximity and utilization do not seem to be the crucial factors of adaptive behavior beyond infancy.

In addition, although the effect sizes we report are small to medium, they are nevertheless important. It is important to notice that current etiological models of the development of internalizing problems, including depression, are complex and involve numerous factors and influences. Avanci et al. (2012) found several potential psychosocial variables associated with depression in childhood: poor relationship with parents, high frequency of victimization, externalizing behavior problems and negative family life events such as parental divorce, financial problems or serious health problems. Another study showed that children's depressive symptoms are predicted by numerous community, demographic, familial and personal factors (Dallaire et al., 2008). These findings suggest that parent-child relationships, other aspects of the family context and child characteristics are potential risk factors that might account for depression in middle childhood simultaneously. Multiple risk factors and possible interactive effects may be further examined.

When interpreting the results of this investigation, it is important to be aware of certain limitations. First, the measures of both the mother-child relationship security and depression are based on only the child's perspective. In future studies, it would be beneficial to gather reports from children as well as from significant others. Second, the nature of the sample should be considered in interpreting the findings. Participants of this study were from a community sample; therefore, factors related to depression may differ for children with the diagnosis of depression disorders.

In conclusion, the present study provided evidence that mother-child attachment relationship contributes to the development of depression in middle childhood. It is important to note that children's perception of mother's availability was related to lower levels of overall depression and the majority of symptoms, whereas reliance was not. Feelings of security connected with mother's expected emotional support seem to be more essential for child's psychological development than mother's practical help and assistance. As the next step, it will be necessary to examine other factors (e. g. emotion regulation) which may explain these effects.

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