International adoption

Influence of attachment and maternal monitoring style in the emergence of behavioural problems in adolescence in relation to age at adoption

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Summary

Adolescence is a particularly sensitive period for adoptees in regard to psychological, social, and physical transformations, particularly for children adopted from abroad. Past studies highlighted that age at adoption could have an effect on child development. Through our research on 350 internationally adopted adolescents in Quebec we show that the intensity of attachment behaviours to mothers, as well as maternal monitoring style, may have an impact on the emergence of behavioural problems in adolescence.

Key words: adoption; adolescence; attachment; parental monitoring style; behavioural problems

Introduction

Recent studies have shown that international adoption has an impact on emotional and social development in adolescence, specifically in regard to attachment and separation processes [1, for a review]. There is some evidence of the role of preadoptive environment, age at adoption and attachment problems as risk factors for behavioural problems in adolescence [2].

Most abandoned and then adopted children have experienced a number of adverse factors [3] that may influence their adjustment [4, 5, 6] and the parent-child relationship. Some of these factors are pre- or perinatal (stress, malnutrition or disease of the mother), whereas others occur after birth (e.g., persistent malnutrition, discontinuities of caretaking or of adequate stimulation, poor medical care [7, 8]). These adverse factors appear predominant for internationally adopted children from countries where war, poverty, disease and famine prevail, often cumulative with negative attitudes toward unwanted pregnancy, single parenthood, and international adoption [9, 2]. All of these factors may have long-term implications for the lives of both adopted children and their adoptive parents.

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Adolescence represents an especially critical period for adopted children, due to a variety of physical and cognitive changes [9]: having been adopted may constitute a risk factor for psychological development when social identity and filiation are questioned [9, 2].

Overall, the literature reports that behavioural problems tend to increase in adolescence in adopted children [8, for a review]. Behavioural problems are more frequent in adopted adolescents than in non-adopted peers [10–16]. While externalising behavioural problems prevail [17, 18, 9], some studies also found increased internalising problems among adolescent adoptees [19, 13, 15, 20], and two meta-analyses showed a larger number of total behaviour problems [9, 8].

The effect of age at adoption on behavioural problems

A late adoption frequently implies a long time spent in institutions in poor living conditions [21, 22], and increases the risk of being subjected to adverse circumstances with potentially long-term consequences [23, 24]. Howe showed that infants adopted after six months of age were more at risk of developing later behavioural problems [25]. Rutter found that children adopted between 6 and 24 months presented more cognitive impairments at six years of age than children adopted sooner [26]. Gunnar et al. found that children adopted from institutions after 24 months of age were at increased risk of attention, thought and social problems at school age [2].

The effect of age at adoption on parent–child attachment

Poor affective life conditions before adoption may influence the development of emotional regulation and later social adaptation [27]. Indeed, institutional rearing environments may not provide the environmental input that promotes selective attachment relationships [28].

Most adoption professionals emphasise the importance of attachment in the emotional well-being of internationally adopted children [29–31]. Whereas children adopted within the first 6 months of life tend to show normative

patterns of attachment with their adoptive parents [32, 33], those adopted beyond the age of 6 to 12 months may be at risk for attachment problems and developmental difficulties [34, 35]. O'Connor et al. have found that the duration of deprivation was associated with a lower rate of secure attachment in adopted children and a higher rate of atypical patterns of insecure attachment (whereas the typical forms of insecure attachment did not seem to be affected by deprivation) [28]. Consequently, the earlier the child is adopted, the less he/she is at risk of developing negative patterns of attachment [27]. In spite of these results, there is no firm evidence yet regarding a sensitive period beyond which risks would be dramatically increased.

Consequences in adolescence of disrupted parent–child attachment

Attachment is related to the capacity for self-reliance, emotional regulation and the development of social competence [36]. Although attachment seems to be relatively stable along childhood, changes may occur at adolescence due to distancing from parents [37]. Zimmermann and Grossmann showed that adolescents with positive representations of interpersonal relationships were more socially competent and more accepted among peers [38]. Adolescents with less positive representations or insecure attachment have been shown to present more hostility, to be often on their own, to present more eating problems and substance abuse [39, 38], anxiety, distress, depressive symptoms, suicidal [40] and criminal behaviour [41, 42]. Indeed, when expanding their social network many adolescent adoptees may find it difficult to establish selective bonds with others, leading to social loneliness and feelings of helplessness [24, 36].

Rosnati and Marta showed that the quality of the relationship with the adoptive parents can be predictive of affective and behavioural problems among adolescents [43]. Verissimo and Salvaterra showed that the quality of mothers' attachment representations ("attachment scripts") can predict the attachment security of the adopted child; age at adoption did not affect the predictive effect [44]. These results point up the influence of mothers' representations of attachment on caregiving behaviours, and on the ways in which these behaviours shape the relationship with the child. In spite of these results, it should be mentioned that most adopted children are able to establish secure bonds with their adoptive parents. In other words, the quality of attachment does not strictly depend on having experienced a continuous relationship from birth, and adopted children may recover from early deprivation.

The influence of parental monitoring on behavioural problems

Parenting practices have been shown to influence the onset and persistence of behavioural problems in children and adolescents [45–48]. Campbell, Pierce, Moore et al. found high levels of maternal negative control at 4 years old to predict externalising problems at 9 years [49]. Other studies evidenced a link between parental practices and behavioural problems, delinquency, and academic performance [50–55]. Patterson and Bank showed that children who were closely monitored by their parents were less likely to be involved in delinquent activities [47]. Kerns et al. found that children's and parents' perception of a secure attachment relationship were related to parental monitoring [50].

Concerning adopted children, Dishion & McMahon showed that, during infancy, high levels of control by the adoptive parents predicted antisocial behaviour at adolescence [56]. Reciprocally, a lack of parental control has been highlighted as a strong predictor for antisocial personality in adoptees [57]. Patterson, Reid & Dishion showed that inappropriate parental supervision may encourage the adolescent to spend more time with his/her delinquent peers [58]. Rothbaum and Weisz found a relationship between adopted children's externalising problems and close parental control [59]. A meta-analysis evidenced a link between close parental control and child anxiety in adopted children [60].

Many authors have linked high levels of parental monitoring to less delinquency or antisocial behaviour [53, 51, 55], less risky behaviours [61], less substance use [62], and fewer deviant friends [63, 57]. The way parents monitor their children also has an influence on their behaviour. A tracking style has been linked to poor adjustment, lower self-esteem, more depressive symptoms and a poorer parent-child relationship [64]. A study run in 2000 by Kerr and Stattin separated parental monitoring into three different behaviours: child disclosure, parental solicitation, and parental control. Their results showed that child disclosure is the strongest indicator of adjustment, of a better parent-child relationship, better self-esteem and fewer depressive symptoms.

Aim of the study

The literature shows an association between the emergence of behavioural problems in adopted adolescents and a wide range of factors. In the present study we will examine the influence of different categories of age at adoption, intensity of child attachment behaviours and maternal monitoring style on behavioural problems.

Method

Participants

Families taking part at this study are all Canadians. They adopted a child from abroad between 1985 and 2002, and were contacted in the context of a survey conducted by Tessier et al. [27] with the help of the International Adoption Secretaryship in Quebec. Ninety percent of the files collected in the survey (questionnaires sent by post; return rate: 44%) were complete enough to be included in the analysis. For the present report we retained only adolescents aged between 12 and 18 years at the time of the study (N = 350, 186 girls and 164 boys). The sample has been split

Table 1
Participants' age means and SD (years).

N	<6 m 83	6–12 m 52	12–24 m 43	>24 m 172	TOT 350
Age at the time of the study	13.5 (1.4)	13.6 (1.3)	14.1 (1.8)	14.4 (1.8)	14.4 (1.9)
Mother's age at adoption	34.7 (3.9)	37.1 (4.1)	35.7 (4.6)	39.5 (6.2)	37.6 (5.7)
Father's age at adoption	37.1 (3.7)	38.3 (3.8)	37.1 (4.2)	40.4 (5.7)	38.5 (5.3)

into four groups in respect of age at adoption. Age cut-points refer to important developmental steps as described by the attachment theory [see 65, 66]: 1) before 6 months (attachment "in the making"), N = 83; 2) from 6 to 12 months ("clear-cut" attachment), N = 52; 3) from 12 to 24 months, N = 43; and 4) after 24 months, N = 172 (table 1).

Instruments

Attachment behaviour questionnaire
The questionnaire of Kerns et al. [50] was used to assess how the parents describe their adolescents' attachment behaviours and their intensity. This instrument includes 10 questions on how the parents perceive the interaction with their child and, more specifically, about their attachment relationship with their child (i.e., "I am often angry with my child." or "I encourage my child to talk about his problems."). Responses are provided on a Likert-type scale ranging from 1 (very unlike me) to 5 (very like me). The total score is obtained by adding up the ten items, regarding reversal scales. The higher the total score, the more the adolescents' attachment behaviours are close to security. Very low scores are correlated with poor attachment security.

Parental Monitoring Questionnaire [64]

The Parental Monitoring Questionnaire is composed of 15 items separated into three factors regarding the potential sources of information about adolescents' daily activities: child disclosure (the child talks to his parents in a spontaneous way about things that upset him), parental solicitation (parents ask the child about what he did at school, etc.) and parental control. For *Child disclosure*, mothers answer in a five-point response scale questions such as "Does your child tell you how school was when he gets home?" or "Is your child very secretive about what he does during his free time?" Alpha reliabilities were 0.80. The two month test-retest correlation was 0.70. Concerning *Parental solicitation*, items are like "In the last month, did you talk with your child about his/her friends?" or "In the last month, how often did you start a conversation with your child about his free time?" The alpha reliability is 0.70 and the test-retest correlation 0.84. *Parental Control* was measured by five questions such as "Has your child to ask for your permission to stay out late?" or "Does your child need to ask you before he can decide with his friends what they will do on Saturday?" The alpha reliability was 0.78, and the test-retest reliability was 0.82.

Child Behaviour Checklist [67]

The parental-report of the *Child Behaviour Checklist* (French version) was used to evaluate the behavioural problems of the adopted adolescents. This is a 113 items questionnaire. Items scores range 0 to 2; eight scales are computed by summing up items: anxiety/depression, somatic problems, social withdrawal, aggressive behaviour, rule-breaking behaviour, attention problems and thought problems, and into three global scales: internalising (regrouping items from the anxiety/depression, social withdrawal and somatic problems scales), externalising (aggressive behaviour, rule-breaking behaviour, thought problems) and total score (all items) of behavioural problems.

Results

We evaluated the number of reported behavioural problems of the 12–18 y.o. participants (N = 350), in regard to age at adoption (see *table 2*).

These results show a significant difference between the groups of adolescents adopted before six months and after 24 months regarding behavioural problems in most scales of the CBCL: more behavioural problems are reported by parents of adolescents adopted late. For the *attention prob-*

Table 2
CBCL Behaviour problems scales related to age at adoption.

	Anxiety/ depression	Social problems	Withdrawal	Attention problems	Rulebreaking behaviour	Somatic complaint	Thought problems	Aggressive behaviour	Total score	Internalising score	Externalising score
<6 m	3.03[a]	2.00[a]	2.09[a]	2.95[a, b]	2.12[a]	1.53	1.73	5.37[a]	16.60[a]	6.66[b]	7.49[c]
6–12 m	4.40	3.15	2.76	4.28[c]	2.25[b]	1.59	1.84	6.80	20.35	7.95	9.05
12–24 m	3.57	2.64	2.78	5.69[b]	2.78	1.78	1.83	6.52	20.84	8.96	9.30
>24 m	4.58[a]	3.86[a]	3.30[a]	6.11[a, c]	4.54[a, b]	1.50	2.19	8.51[a]	25.89[a]	9.38[b]	13.05[c]

[a, b, c] Significant post hoc difference <0.05 between groups with the same index

Table 3
Attachment scores related to age at adoption.

	Attachment
<6 m	0.28[a]
6–12 m	0.02
12–24 m	0.14
>24 m	–0.16[a]

[a] Significant post hoc difference p <0.005 between scores with the same index

Table 4
Linear regressions, attachment predicting behavioural problems.

	R^2	F	β	p
Anxiety/depression	0.03	10.60	–0.17	0.001
Social problems	0.11	44.84	–0.34	0.000
Withdrawal	0.10	39.17	–0.32	0.000
Attention problem	0.14	55.99	–0.37	0.000
Rule-breaking behaviour	0.24	110.45	–0.49	0.000
Aggressive behaviour	0.18	77.17	–0.43	0.000
Thought problems	0.08	33.51	–0.30	0.000
Somatic complaints	0.02	6.86	–0.14	0.009
Total score	0.20	86.03	–0.45	0.000
Internalising problems	0.07	25.19	–0.26	0.000
Externalising problems	0.23	104.32	–0.48	0.000

Table 5
Parental monitoring style related to age at adoption.

	Parental solicitations	Parental control	Child disclosure
<6 m	38.02[a, b]	23.54	15.58
6–12 m	37.30	22.97	15.12
12–24 m	36.20[b]	22.85	14.94
>24 m	35.83[a]	22.37	14.28

[a, b] Significant difference p <.01 between scores with the same index post hoc

Table 6
Linear regression of behavioural problems on maternal solicitations.

	R^2	F	β	p
Social problems	0.03	11.4	–0.18	0.001
Anxiety/depression	0.00	2.46	–0.08	ns
Withdrawal	0.07	26.8	–0.27	0.000
Attention problem	0.06	21.1	–0.24	0.000
Rule-breaking behaviour	0.23	103.5	–0.48	0.000
Aggressive behaviour	0.07	28.8	–0.27	0.000
Thought problems	0.04	12.9	–0.19	0.000
Somatic complaints	0.00	3.24	–0.09	ns
Total score	0.11	40.6	–0.32	0.000
Internalising problems	0.03	11.4	–0.18	0.001
Externalising problems	0.15	58.1	–0.38	0.000

lem and the *rule-breaking behaviour* scales there is also a difference between having been adopted in the first year of life versus later.

We then evaluated the relationship between attachment and age at adoption. Again we found a significant difference between groups of adolescents adopted before six months and after 24 months *(table 3)*: having been adopted after the second year of life seems to be a risk factor regarding attachment, as reported by the mother.

We assessed the relationship between behavioural problems and the attachment index (linear regression on the whole sample). We found a significant relationship between these two variables (see *table 4*). For each scale of the CBCL we found that poor attachment to the mother could predict an increase in behavioural problems. For *rule-breaking behaviour*, the *CBCL total score* and the *externalising problems* scales, one fifth to nearly one quarter of the variance is explained by attachment behaviours (both domains reported by the mother).

We assessed the influence of age at adoption on parental monitoring style *(table 5)*. We found age at adoption to significantly affect the *parental solicitations*. Indeed, when the child has been adopted earlier, mothers report more *solicitation style* than when the child has been adopted later. For *child disclosure* and *parental control*, age at adoption was not found to have an influence.

For the next step, we calculated the influence of parental monitoring style on behavioural problems in adopted adolescents *(table 6)*. As there were no significant results for *child disclosure* and *parental control*, we did not report it on the table.

For almost all CBCL scales (except somatic complaints and anxiety/depression), *parental solicitations* have a significant influence on behavioural problems. The influence is especially important for rule-breaking behaviour: nearly a quarter of the total variance is explained by *parental solicitations*, in the sense that the more the mother asks her child about him/herself, the less the child presents behavioural problems.

Finally, we evaluate two models in which *maternal solicitations* and attachment were considered as moderating variables regarding the association between age at adoption and CBCL. We found that *maternal solicitations style* moderated the link between age at adoption and aggressive behaviour ($\beta = 0.175$, $t = 1.92$, $p < 0.05$); between age at adoption and CBCL total scores ($\beta = 0.186$, $t = 2.07$, $p < 0.05$); and lastly between age at adoption and externalising behaviours ($\beta = 0.169$, $t = 1.85$, $p < 0.05$). It indicates that parental monitoring through child solicitation could be a protective factor between age at adoption and behavioural problems. For the second model, with attachment as a moderation variable, we found no significance.

Discussion

Our results show that age at adoption represents a strong indicator of the emergence of behavioural problems in adolescence (at least as reported by the mothers). As we were expecting, the later the child is adopted, the more he/

she is at risk of presenting a large number of problems, especially during the critical period of life which is adolescence. Indeed, having been adopted later means a long time spent in institutions, in poor living conditions which may not provide adequate stimuli to promote healthy development. At the opposite end of the scale, having been adopted before six months may constitute a protective factor regarding behavioural problems in adolescence.

Age at adoption also seems to influence attachment to the mother. It is likely that when the child is adopted later, probably because of the time spent without a specific attachment figure, it is more difficult for him/her to establish a selective attachment [68]. According to the attachment theory, selective attachments form during the second semester of life. Beyond the second semester the child exposed to inadequate care and poor stimulation may form undifferentiated relationships (reactive attachment disorder, DSM-IV) and if some children may restore a differentiated relationship after adoption [69], some difficulties may subsist. Low parental solicitations in the case of a child adopted later could also reflect the poor attachment quality and the lack of communication between the adoptive mother and the child. These seem particularly right for children adopted after 24 months in contrast to those adopted before 6 months.

Concerning behavioural problems, our results show that attachment and parental monitoring style are clearly related to the emergence of problems in adopted adolescents. Indeed, the more the child is attached to her/his mother and the more she talks to him/her about him/her, the less he/she will develop behavioural problems. Many studies showed the importance of parental supervision and attachment as a protective factor against behavioural problems and psychopathology, particularly in adolescence.

Our last result shows a moderating role of maternal monitoring style between age at adoption and aggressive, externalising, and total scores of problems. It seems so, that high maternal solicitations may attenuate the impact of late adoption. In contrast, attachment seems to be influenced by age at adoption, which means that it is really difficult to establish secure bonds with a child adopted after 24 months. It is also possible that the behaviour and the emotional capacities of the child, affected by a long time spent in institutions, may directly affect how others treat the child and have an impact on the emergence of behavioural problems [70].

On the whole, having been adopted after 24 months may constitute a risk factor regarding behavioural problems in adolescence. Through these results we also highlight the importance of the parent-child quality of the attachment relationship and maternal monitoring style and frequency as protective factors against the emergence of behavioural problems in adopted adolescents. Of course, an important limitation on these results is that attachment, parenting practices and behavioural problems are only reported by mothers.

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