

Onder Embargo

The psychological adaptation of international adult adoptees: post-adoption precursors

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Psychological adaptation was examined in 993 Dutch internationally adopted adults (M= 38 years; 58% female) with a relatively high percentage of pre-adoption adversity, and the international adoptees were compared with their Dutch non-adopted peers and with Dutch domestic adoptees. Psychological adaptation was indicated by internalizing and externalizing problem behavior, and self-esteem. We found that the majority of the international adoptees were well adapted and showed even higher levels of self-esteem than their non-adopted peers from the general population. After controlling for the effects of the pre-adoption adversity, we found that international adoptees who reported a more negative appraisal of relinquishment and adoption, showed more feelings of loss, more negative coping strategies, and less optimal psychological adaptation. Whilst comparing the international and domestic adoptees, we found that the international adoptees showed a more positive appraisal of both relinquishment and adoption than the domestic adoptees. Based on these findings, we suggest that both the appraisal of relinquishment and adoption and feelings of loss play a key role in the psychological adaptation of adoptees. These insights should be used in the preparation of new adoptive parents and helping children to adapt to their new life environment and to prevent problems later in life. Furthermore, in treatment and psychological help, adult adoptees with problems might benefit from reflecting on the feelings of loss towards the biological parents and the feelings towards being relinquished and adopted.

The Netherlands is home to approximately 35,000 international adoptees (Chamon & Juffer, 2013), and have a relatively high number of international adoptees relative to their population. In 2012 a total of 488 international adoptions were realized (Ministry of Justice, 2013). Back in the '60s of the last century the first small group of international adoptees arrived in the Netherlands from Greece. In the '70s international adoption became quite popular and children from all around the world came to the Netherlands to find a family. Now, the first large generation of international adoptees in this country has fully entered adulthood and some have become parents themselves. The effects of adoption on children and adolescents has been a subject of research for several decades now (Palacios & Brodzinsky, 2010; Van IJzendoorn & Juffer, 2006). However, the long-term effects of adoption, especially into adulthood has been studied far less frequent. This study is part of the Sophia Longitudinal Adoption study, that started in 1986 in Rotterdam with the adoptive parents as informants of their adopted children (Verhulst, Van den Ende, & Versluis-Den Bieman, 1990a; 1990b). A few years ago the study was continued in Leiden and onwards indicated as The Next Generation Study. Since 1999, and also in the current study, the adoptees themselves were approached instead of their parents. The current study focuses on the long term effects of adoption by looking at the first generation of international adoptees and examining their psychological adaptation, indicated by problem behavior and self-esteem, and several post-adoption precursors of psychological adaptation. Furthermore, we will also examine the differential outcomes of international and domestic adoptees, and investigate whether the post-adoption precursors might give us more insight in these differential outcomes.

Psychological Adaptation

Research has shown that the majority of adopted children and adolescents are well adjusted. However, a percentage that is larger than that of the general population experiences (psychological) adjustment problems (Juffer & Van IJzendoorn, 2005; Keyes, Sharma, Elkins, Iacomo, & McGue, 2008). For instance, an overrepresentation of adopted children can be found in mental health referrals (Juffer & Van IJzendoorn, 2005) and also during adolescence, adoptees show more psychological problems than their non-adopted counterparts from the general population (Beckett, C., Maughan, B., Rutter, M., Castle, J., Colvert, E., Groothues, C., et al., 2006; Keyes et al., 2008). Two comprehensive meta-analyses have been done by Juffer and Van IJzendoorn (2005, 2007)

focusing on externalizing and internalizing problem behavior and self-esteem, respectively, as outcome variables.

Problem behavior. The meta-analysis of Juffer and Van IJzendoorn (2005) showed that international adoptees indeed experienced more problem behavior, both internalizing and externalizing, than their counterparts from the general population. Of the 98 studies that were selected however, only five included adult adoptees, both domestic and international. In three of these studies differences were found between the adoptees and the general population. Sullivan (1995) found an association between domestic adoption and more disruptive behavior. In a domestic adoption twin study, Smyer (1998) found that the levels of psychological distress (indicated by neuroticism and alienation) of the adopted twin were higher than the levels among the biologically reared twin. However, Smyer points out that the quality of functioning was well within limits. Finally, Borders and Portnoy (2000) stated that, although in most areas adoptees and non-adoptees resembled each other, adoptees reported less social support, had lower self-esteem, showed more depression and received more counseling. However, the effect sizes of these differences were small. Two other studies included in the meta-analyses of Juffer and Van IJzendoorn (2005) reported a gender effect regarding problem behavior. Botvar (1994) found that adopted men showed significantly more problem behavior than men from the general population, whereas adopted women showed significantly less problem behavior than women from the general population. Storsbergen¹, Juffer, Van Son and 't Hart (2010) also examined mental health and self-esteem of a sample of the first generation of international adoptees in the Netherlands, originating from Greece. They found that international adoptees and non-adoptees were comparable on problem behavior, with exception of adopted men showing higher levels of depression. Because the study of Storsbergen and colleagues (2010) is comparable with the current study, it will serve as a reference for the results of the current study. Based on the previous research on adult adoptees, we expected to find higher levels of problem behavior among international adoptees than among the general population, with the highest levels of problem behavior found in adopted men.

Juffer and Van IJzendoorn (2005) also reported a difference in problem behavior between international and domestic adoptees. International adoptees generally are

¹ The dissertation of Storsbergen was included in the meta-analysis of Juffer and Van IJzendoorn (2005). The corresponding article of Storsbergen and colleagues was published in 2010.

adopted at an older age and therefore may have experienced more pre-adoption adversity. Furthermore, because of the racial and cultural differences between themselves and their parents, they were expected to feel more different from their adoptive family than the domestic adoptees. Based on these facts, it was hypothesized that international adoptees would show more problem behavior than domestic adoptees. The opposite was found in the meta-analysis, with domestic adoptees showing higher levels of both internalizing and externalizing problem behavior than international adoptees.

Keyes and colleagues (2008) confirmed these findings in a study that compared both internationally and domestically adopted adolescents to their non-adoptive counterparts from the general population on several psychological disorders. Adoptees showed more problem behavior than non-adoptees, with domestic adoptees showing the highest levels, except on internalizing disorders. Dekker and colleagues (2011) investigated the effects of adoption in a Dutch sample of domestic adoptees and compared them with international adoptees² and individuals from the general population. They partially replicated the findings of Juffer van Van IJzendoorn, with domestically adopted men showing more mental health problems than internationally adopted men and men from the general population. Domestically adopted women, however, did not score significantly higher than women from the general population and even scored significantly lower on mental health problems than internationally adopted women. An explanation for the difference that is often found between international and domestic adoptees, is still subject to speculation. One possible explanation given by Juffer and Van IJzendoorn (2005) is that the visibility of the international adoption might lead to more open communication and more trust in families with an internationally adopted child than in families with a domestically adopted child. Few other studies have been performed after the meta-analysis of Juffer and Van IJzendoorn, that compared international adoptees to the general population or to domestic adoptees in terms of mental health problems or problem behavior. Passmore and colleagues (2006) investigated several possible precursors of adjustment problems among adoptees but did not compare the adoptees to the general population. In the current study we expect that the domestic adopted men will score significantly higher on problem behavior than both the internationally adopted men and the general population.

² The data of international adoptees used for the comparison of Dekker and colleagues (2011) came from the first Next Generation measurement conducted in Leiden and overall the third follow-up of the Sophia Longitudinal Adoption Study. These international adoptees were also approached for the current study.

Self-esteem. There are several reasons why adoptees may show lower levels of self-esteem than the general population. Internationally adopted children in particular often come from depriving backgrounds, with lack of medical care, malnutrition and even maltreatment and neglect (Juffer & Van IJzendoorn, 2007). Although this cannot be generalized to all adoptees, the current sample is one in which a high percentage of adoptees experienced pre-adoption adversity (Verhulst et al., 1990b). Adopted children who experienced pre-adoption adversity may experience developmental delays, attachment problems (Van IJzendoorn & Juffer, 2006), more internalizing and externalizing problem behavior (Juffer & Van IJzendoorn, 2005) and more mental health problems (Tieman, Van der Ende, & Verhulst, 2005; Storsbergen et al., 2010) which may foster lower levels of self-esteem. Furthermore, Juffer and Van IJzendoorn (2007) hypothesized that a lack of genetic and physical resemblance with the adoptive parents may cause adoptees to feel different than and less integrated in their adoptive family. This combined with any problem behavior may result in lower self-esteem (Juffer & Van IJzendoorn, 2007).

However, the meta-analysis of Juffer and Van IJzendoorn (2007) proved the opposite by finding no difference between either international or domestic adoptees and non-adopted individuals in levels of self-esteem. Of the 64 studies included in the meta-analyses regarding differences between adoptees and non-adopted individuals, 23 included adult adoptees. No differences between age groups were found (Juffer & Van IJzendoorn, 2007). Again, the study of Storsbergen and colleagues (2010) that was included in this meta-analysis, confirmed this phenomenon by finding no difference between the self-esteem levels of international adoptees and non-adopted individuals from the Dutch population. Two studies (Mohanty, 2012; Mohanty, Keokse, & Sales, 2006) investigated the levels of self-esteem among internationally adopted adults after the meta-analysis, but neither of them made a comparison with a control group from the general population. In the current study we hypothesized that international adoptees would not differ from the general population on levels of self-esteem. Including the outcome variable self-esteem enabled us to try to replicate and extend the findings of Storsbergen and colleagues (2010) on a much larger sample of international adoptees and with two more variables (see below) that might explain the variability in levels of self-esteem and problem behavior of the international adoptees.

Post-adoption Precursors of Psychological Adaptation

When investigating positive and negative outcomes of adoption, pre-adoption adversity is often found to be an important predictor (e.g., Palacios & Brodzinsky, 2010; Van IJzendoorn & Juffer, 2006). In the first assessment of the Sophia Longitudinal Adoption study, Verhulst and colleagues (1990b) found an association between the age of placement and maladjustment of adopted children. Age of placement was used as an indicator of pre-adoption adversity, assuming that the older the children were at placement, the greater the possibility that they had experienced poor care or malnutrition. However, the relation found by Verhulst and colleagues (1990b), was not clear-cut linear in the sense that some age groups did not follow this pattern. They suggested that other factors than the pre-adoption adversity may also determine the outcomes of the adoptees. For instance, what happens after the adoption also determines various outcomes in adoptees. This concept has been studied and confirmed by Storsbergen and colleagues (2010) in a sample that had not suffered from severe pre-adoption adversity. In the current study we will investigate the effects of several post-adoption aspects that might predict the outcomes of adult adoptees, after controlling for the effects of pre-adoption adversity indicated by age of placement.

Appraisal of adoption. Smith and Brodzinsky (1994, 2002) have proposed a theoretical model that might explain why some adoptees thrive and others may struggle with adjusting. It is based on the appraisal of the adoptees towards being relinquished by their biological parents and being adopted by their adoptive parents. In other words, what feelings arise when the adopted children are asked to think about how it feels to be relinquished and adopted (e.g., sad, angry, happy, loved). Smith and Brodzinsky hypothesized that children who felt sad, or angry or another negative emotion when thinking about being relinquished and/or adopted, would show more problematic coping styles and therefore also more adjustment problems than children who felt happy or loved. The problematic coping styles included for instance cognitive avoidance or behavioral avoidance, whereas positive coping styles included assistance seeking or cognitive behavioral problem-solving (Smith & Brodzinsky, 1994, 2002). They found that for children of 6 to 17 years of age, having more negative feelings and intrusive thoughts was associated with more negative coping styles, which in its turn predicted more adjustment problems (Smith & Brodzinsky, 1994). Furthermore they proposed that along those emotions, being adopted is inherently tied to loss-related experiences, not

only towards their biological parents but for instance also towards cultural identity, which in its turn may foster more adjustment problems (Smith & Brodzinsky, 2002). This model was also confirmed; Smith and Brodzinsky (2002) found that children who experienced more feelings of loss, showing more negative coping styles and these feelings also directly predicted more psychological adjustment problems.

Storsbergen and colleagues (2010) were the first to investigate this paradigm among adult international adoptees in the Netherlands, along with the effects of searching for origins. They found that a negative appraisal of adoption and not searching status, significantly predicted worse outcomes on mental health problems, but this relation was not significant for self-esteem. Dekker and colleagues (2011) found that although the positive feelings of the domestic adoptees clearly predominated the negative feelings, more negative feelings about relinquishment (particularly in men) and adoption (particularly in women) were associated with more behavioral and emotional problems (Dekker et al., 2011). Our study is the first in which a direct comparison is made between domestic and international adoptees and their appraisal of relinquishment and adoption and feelings of loss towards birthparents. Concerning the predictive value of the appraisal of relinquishment and adoption and the feelings of loss among international adoptees, we expected that more negative appraisal and more feelings of loss would be associated with higher levels of problem behavior of the international adoptees. Because a comparison between domestic and international adoptees on these constructs has never been made before, we could not form a hypothesis. We could only speculate that because domestic adoptees (specifically men) might show more problem behavior than the international adoptees, we might also expect them to show a more negative appraisal.

Coping. The other part of the theoretical construct of Smith and Brodzinsky (1994, 2002) that could explain the differential outcomes among adoptees, are the coping strategies they use to deal with their adjustment problems. Smith and Brodzinsky (1994) found that a negative appraisal of adoption was often accompanied with behavioral and cognitive avoidance coping strategies. Furthermore, children whose parents reported higher levels of problem behavior, showed more behavioral avoidant coping styles and less problem-solving strategies. Reinoso and Forns (2010) confirmed these findings in their study on internationally adopted children in Spain. As far as we know, our study is the first to examine different coping strategies shown by adult adoptees (both international and domestic) and the relation to different outcomes on problem behavior.

Assuming that this mechanism remains the same in adulthood, we expected that avoidant coping strategies would be associated with more negative outcomes on problem behavior.

Family relationships. Finally, another post-adoption aspect that can contribute to the psychological adaptation of the adoptees, is the relationship with the adoptive parents. In the current study, we measured how the adoptees perceived the quality of the relationship with their adoptive parents. During childhood, the parenting styles of the adoptive parents are predictive of the psychological adjustment of the children. Miller, Chan, Tirella and Perrin (2009) found that in families with adopted children from Eastern Europe more parental stress was associated with more problem behavior. Kriebel and Wentzel (2011) found that positive parenting could function as a buffer against the harmful effects of pre-adoption maltreatment. Tan, Camras, Deng, Zhang and Lu (2012) investigated the effects of different parenting styles: authoritarian and permissive parenting were associated with more problem behavior whereas authoritative parenting predicted better overall behavioral adjustment.

Once in adulthood, the ‘parenting’ of parents has formally ended. However, that does not mean that the relationship with the parents is no longer of influence. Botvar (1994) found that the adult adoptees who had experienced a difficult relationship with their adoptive parents had a twofold higher chance of developing psychological problems compared to adoptees whose relationship with their parents had been good (Botvar, 1994). Passmore and colleagues (2006) investigated several possible precursors of adjustment problems among adult adoptees. They found that experiences of negative parenting was the most important predictor for adjustment. Furthermore, research has shown that parental support predicts higher levels of self-esteem (Mohanty, 2012; Mohanty et al., 2006) and that the openness about adoption of adoptive parents promotes the identity development in young adult adoptees (Colaner, 2011). However, these studies examined the role of the parenting that the adoptees had received during childhood, mostly measured in a retrospective way. In the present study, the quality of the relationship with the adoptive parents perceived by the adoptees as it was at the time of administration, was measured, as well as to what extent it could predict the outcomes of the adoptees. In line with the above relayed research we expected that a lower perceived quality of the relationship with the parents was associated with higher levels of problem behavior. Dekker and colleagues (2011) also measured the perceived quality of the relationship with the adoptive parents, enabling us to make a comparison between international and domestic adoptees and the general population on this construct. Since

this has not been done before, no hypothesis could be formed on whether there is a difference in the way international and domestic adoptees perceived the relationship with their parents.

The Current Study

The Sophia Longitudinal Adoption study started in 1986, investigating the long term effects of adoption in a large cohort of 2,148 international adoptees. At the start of the study, children were 10 to 15 years of age. On that first assessment children showed significantly more externalizing problem behavior than the non-adopted children from the general population (Verhulst et al., 1990a). Especially boys showed higher levels of externalizing behavior. Tieman and colleagues (2005) showed that these differences were still apparent when adoptees were entering adulthood (age 24-30 years, N= 1963): adoptees had a 1.5 to 4 times higher chance on developing serious mental health problems than individuals from the general Dutch population. In contrast to the differences found on psychological adaptation, Tieman and colleagues (2006) found that the international adoptees did not differ from the general population in educational and professional levels.

In the present study, results of the fifth and latest follow-up are described. This follow up consisted of two stages which were conducted in 2009-2010 and 2011-2012, respectively. The results of the second follow-up will be discussed in the current study. Eventually, 993 adoptees agreed to participate. At the time of assessment, the adoptees had a mean age of 38 years.

This study aims on combining several constructs that have previously been studied separately. While controlling for the effects of pre-adoption adversity, we investigate the effects of the appraisal of relinquishment and adoption, feelings of loss, coping strategies and the parental relationship on problem behavior and self-esteem. Furthermore, on several of these constructs, a comparison will be made between Dutch international adoptees and Dutch domestic adoptees, using the results of Dekker and colleagues (2011). These will include problem behavior, coping, the appraisal of relinquishment and adoption, feelings of loss, and the perceived quality of the relationship with the parents. Self-esteem was not assessed among the domestic adoptees. With the exception of coping, the results on all constructs that are not specific for adoptees (e.g., appraisal of adoption) will be compared with the general population.

Finally, we examine the gender differences within the internationally adopted group on all constructs as well, since most constructs hold different norms for men and women. If previous research showed a gender difference, it was included in the hypothesis regarding that particular subject. If not, then no hypotheses about gender were formed.

Hypotheses

Based on the research described before, the following hypotheses were formed (see also Table 1):

1. a) When investigating the international adoptees and the Dutch population, we expect that the international adoptees will show more problem behavior than their non-adopted counterparts from the Dutch population. Since mixed findings were present on possible gender effects, no hypothesis about gender was formed.
b) When focusing specifically on international vs. domestic adoptees, based on the results of Storsbergen and colleagues (2010) and Dekker and colleagues (2011) we expect to find higher levels of problem behavior in adopted men, with domestically adopted men showing the highest levels.
2. We hypothesized that the international adoptees would not differ in levels of self-esteem from individuals from the Dutch population.
3. a) A negative appraisal of relinquishment and adoption and more feelings of loss towards the birthparents are expected to predict higher levels of problem behavior and lower levels of self-esteem in the international adoptees.
b) Since no comparison on the appraisal of relinquishment and adoption and feelings of loss between international and domestic adoptees has been made before, no hypothesis could be formulated.
4. a) We expected that avoidant coping strategies would predict higher levels of problem behavior and lower levels of self-esteem, whereas problem-solving or social support seeking strategies are expected to predict a better psychological adaptation.
b) No hypothesis could be formed on the difference in coping strategies between international and domestic adoptees.
5. a) Finally, we hypothesized that a higher perceived quality of the relationship with the adoptive parents will predict better psychological adaptation.
b) Regarding the difference between international and domestic adoptees and the

general population on the perceived quality of the relationship with the adoptive parents, again no hypothesis could be formed.

For a complete overview of the hypotheses of the current study and the different comparisons that are made, Table 1 was included.

Table 1:
Overview of the different comparisons made in this thesis with the corresponding hypotheses

Participating groups	Variables	Covariates	Hypothesis, we expect that:
1. International adoptees 2. Domestic adoptees 3. General population	- Problem behavior - Parental relationship	No raw data available of the comparison groups	International adoptees will show more problem behavior than the general population. Regarding international vs. domestic adoptees, we expect that only domestically adopted men will show higher levels of problem behavior. No hypothesis could be formed.
1. International adoptees 2. General population	- Self-esteem	No raw data available of the comparison group	International adoptees do not differ from the general population in levels of self-esteem
1. International adoptees 2. Domestic adoptees	- Appraisal R & A* - Coping strategies - Feelings of loss	Gender Age at time of administration Age of placement No raw data available of the comparison group	No hypothesis could be formed No hypothesis could be formed
1. International adoptees	Multivariate approach: Dependent variables: - Problem behavior - Self-esteem Independent variables: - Appraisal R & A* - Feelings of loss - Parental relationships - Coping	Gender Age at time of administration Age of placement Educational level Romantic relationship	International adoptees with a more negative appraisal, more feelings of loss, more negative coping styles and lower quality of the parental relationship will show more problem behavior and less self-esteem.

* The appraisal of relinquishment and adoption

Method

Participants and Procedure

The present study is part of a longitudinal study that started in 1986 to investigate the long-term effects of adoption in internationally adopted children. Two conditions had to be met for participation: First, all children had to be legally and internationally adopted by Dutch families. Second, the children had to be born between the 1st of January 1972 and the 31st of December 1975 (N = 3,519; Tieman, 2006). Through the central adoption register of the Ministry of Justice, 3,309 adoptive parents were contacted of whom 2,148 eventually agreed to participate. For more information on the sampling method used for the start of this research see Verhulst and colleagues (1990a). Three follow-ups were conducted in 1989, 1999, and 2004 (Van der Vegt, Van der Ende, Kirschbaum, Verhulst, & Tiemeier, 2009)

In 2009, the adoptees were approached for the fifth time, a follow-up that consisted of two stages. The first stage included a survey about several demographic characteristics about themselves and their family (e.g., items concerning marital status, whether or not they had any children). Out of the 2,148 that participated in the first assessment, 1,963 were approached again. The 185 that were not approached were either untraceable or had asked to be removed from the sample in an earlier stage, and a small number (n=20) had a mental retardation or had passed away. At the end of the first stage, 1,319 (67.2%) had participated. For the current study (the second stage) a more comprehensive survey was designed and administered, meant to give more insight in the current mental and physical health of the adoptees and its possible precursors. Of the 1,319 adoptees that had participated in stage 1, 16 could not be included in the current study; 10 had declared that stage one would be the last time they had participated in the study, 6 individuals were found to have a mental retardation which was not discovered in earlier follow-ups and they could not participate in the second stage. Thus 1,303 adoptees were approached for the current study.

The comprehensive survey that was used for the current study consisted of several widely used standardized and validated questionnaires. Through mail and email, the adoptees received a username and password with which they could fill in the survey online. Three reminders were sent by (e)mail in the following four months, after which the remaining respondents received one or several phone-calls.

Table 2:

Sociodemographic variables and current life situation of the adult adoptees.

	N	Total	Men	Women
<i>Sociodemographic variables</i>				
Age in years M (SD)	984	38.27(1.18)	38.28(1.12)	38.27(1.23)
Age at placement in months M (SD)	984	26.37(22.81)	25.76(22.16)	26.84(23.27)
<i>Current life situation</i>				
Marital status N (%)	941		414	570
- With partner		775(82.4)	276(66.7)	449(78.8)
- Unmarried		549(58.3)	264(63.8)	285(50.0)
- Married		396(42.0)	143(34.5)	253(44.4)
- Divorced		37 (3.9)	6(1.4)	31(5.4)
- Widow(-er)		2(0.2)	1(0.2)	1(0.2)
Any children N (%)	925	547(58.1)	188(48.8)	359(66.5)
Educational level N (%)	981		414	567
- Low		186(19.0)	92(22.2)	94(16.6)
- Middle		338(34.5)	143(34.5)	195(34.4)
- High		457(46.6)	179(43.2)	278(49.0)
Employment N (%)	981		414	567
- Employed		761(77.6)	344(83.0)	417(73.5)
- Looking for work		37(3.7)	16(3.9)	21(3.7)
- (Partially) disabled		34(3.4)	14(3.4)	20(3.5)
- Other (student, charity work, household)		149(15.2)	40(9.7)	109(19.2)

In total 993 adoptees (76%) participated in the current study, of whom 930 (72%) filled in the survey completely and 63 partially. Those who did not participate either actively declined (74; 6%), or simply did not respond, even after talking to them personally by phone. Thus, of the original sample, almost 30 years later, 46 % of adoptees participated in the current study.

To investigate possible selective attrition after stage 1 of the fifth follow-up, we compared the responders with the non-responders on age, gender, marital status and whether they had any children. Significant differences were found for gender and marital status: significantly more women ($\chi^2(1, N = 1963) = 6.59, p = .01$) and more married individuals ($\chi^2(3, N = 1963) = 16.56, p = .001$) than men or individuals of other marital status participated in stage 2 after completing stage 1. Data of the previous follow-ups were not at hand to further investigate possible attrition regarding for instance educational level or psychiatric history.

At the time of the current study, the mean age of the adoptees (415 men, 569 women) included in this study was 38 years (range: 35 - 47 years). The mean age of placement was 26 months. More detailed information on the sample can be found in Table 2 and in the Result section.

Comparison Groups

Domestic adoptees. To investigate the differences between international and domestic adoptees, the study of Dekker and colleagues (2011) was used for comparison. The aim of the study of Dekker and colleagues was to investigate the functioning of domestic adoptees in the Netherlands. The sample of this study consisted of 79 domestic adoptees (41% men) with a mean age of 26.5 years ($SD = 2.3$), which was significantly lower than that of the international adoptees ($t(76) = 37.24, p < .001, d = 0.98$). The mean age of placement of the domestic adoptees was 4.4 months ($SD = 2.30$), again significantly lower than the international adoptees ($t(1012) = 28.40, p < .001, d = 1.35$). The scores of the international adoptees of the current study were compared with the scores of the domestic adoptees on all variables unless stated otherwise. For the present study, the raw data of the coping strategies and the appraisal of relinquishment and adoption of the domestic adoptees was available for the present study. No data was collected on the self-esteem of the domestic adoptees, making a comparison not possible on that particular variable.

Dutch population: Netherlands Kinship Panel study. The Netherlands Kinship Panel Study (NKPS) is a large prospective and longitudinal study on family relationships in the Dutch population. For the present study we used the same data for comparison as has been used by Dekker and colleagues in order to further enable the comparison between international and domestic adoptees and the Dutch population on the perception of the quality of the relationship with the parents and the scores on the Adult Self Report (Kalmijn & de Vries, 2009; Kalmijn & Dykstra, 2010). The NKPS database includes 1200 young adults between 20 and 30 years old and their parents. Similar to the present study, more women (60%) than men (40%) participated in the study.

Dutch population: self-esteem. De Ridder and Kerssens (2003) conducted a study to compare the influence of situational impacts and the impact of personal characteristics on coping strategies. One of those personal characteristics was self-esteem

measured with the Rosenberg questionnaire. Participants were 430 adults (185 men) with a mean age of 36 years ($SD = 12$, range: 18-64) and this sample was representative of the normal Dutch population, making it possible to use this sample as a comparison group for self-esteem.

Measures

Psychological adaptation: problem behavior. The questionnaire that was used to obtain information on problem behavior that the adoptees might show is the Adult Self-Report (ASR; Achenbach & Rescorla, 2003). The ASR is a self report form for ages 18 to 59 years containing 126 items with which adults can score their (problem) behavior (e.g., 'I am nervous or tense', 'I cry a lot' or 'I am a happy person') according to three categories: "not true (0)", "somewhat or sometimes true (1)" and "often true or very true (2)". For the present study the internalizing and externalizing behavior scales were used, with high scores indicating more problem behavior. Reliability for the current study for the two scales was high ($\alpha_{int} = .94$; $\alpha_{ext} = .87$). Standardization and validation of the Dutch version however, has yet to be done.

Psychological adaptation: self-esteem. Self-esteem was measured through the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This 4-point Likert scale (categories: strongly agree, agree, disagree and strongly disagree) consists of 10 items on general feelings about oneself (e.g., 'On the whole, I am satisfied with myself'). Reliability for the current study for the whole scale was good ($\alpha = .91$).

Post-adoption precursors: appraisal of relinquishment and adoption. To measure the degree to which adoptees have positive or negative feelings on being relinquished by their biological family and adopted by their adoptive family, the Emotion Reaction Scale (ERS) -Birth and -Adoption were administered, respectively (Brown, 2000; Smith & Brodzinsky, 1994). Adoptees were asked to think about themselves as being relinquished or being adopted and were then presented with 12 different emotions (e.g., sad, happy, calm and at ease). With each emotion they were asked to report how often they felt that particular emotion in relation to relinquishment or adoption (0 = never, to 3 = very often). The reliability of both the ERS -Birth and the ERS -Adoption was found to be high, an alpha of .91 and .93, respectively. Furthermore, both the negative and positive items can be used to create positive appraisal scales and negative

appraisal scales. The reliability for all four scales was high with the alpha ranging from .87 to .91.

Post-adoption precursors: feelings of loss. The Adoption Loss Scale (ALS) measures the degree to which adoptees experience feelings of loss but also curiosity towards their biological parents and whether they feel different because of their adoption. A Dutch translation of the Birthparents Loss Adoption Scale (Brown, 2000; Brodzinsky, 1990; Smith, & Brodzinsky, 1994) was used for the current survey. This questionnaire consists of 10 items and with each item two types of individuals are described (e.g., ‘Some adoptees feel different than others’ and ‘Other adoptees do not feel different than others’). The adoptees could indicate to whom of these described individuals they resembled the most (1 = low loss score, 4 high loss score). A total score of loss was calculated with a maximum score of 40 ($\alpha = .87$). A score above 20 on the total score of loss indicates that these feelings may be of such nature that they may interfere with daily functioning. Two sub-scales can be made; the birthparent loss scale and the status loss scale, however these will not be used in the current study

Post-adoption precursors: coping strategies. An adapted version of the Utrecht Coping List (UCL) was used to measure ten coping strategies (Sanderman & Ormel, 1992; Schreurs, Van de Willige, Brosschot, Tellegen, & Graus 1993). The ten distinct coping strategies are: active tackling, seeking social support, palliative reacting, avoiding, passive reacting, reassuring thoughts, expression of emotions, re-evaluating, adopting new standards and seeking religious support. Reliability of the UCL was good with an α of .81. After performing a principal component analysis (PCA) to examine the underlying structure, we were able to compose three overall scales. The first scale included active tackling, reassuring thoughts, re-evaluating, adopting new standards and seeking religious support and was labeled as ‘active coping style’. Internal consistency was good with an α of .79. The second scale was labeled as ‘passive coping’ scales and included palliative reacting, seeking social support and expression of emotions ($\alpha = .81$). The third scale derived from the PCA included the coping strategies avoiding and passive reacting ($\alpha = .72$) and was labeled as ‘problematic coping’. Factor loadings are presented in Appendix A.

Post-adoption precursors: family relationships. The assessment also included questions about the relationship between the adoptees and family members, focusing primarily on the adoptive parents, but also on adoptive siblings, grandparents and biological parents and siblings. The questions were based on the family relationships

survey of the Netherlands Kinship Panel Study (NKPS, 2010) which was adapted for the use of the current study. For the present study the quality of the contact with the parents was used. This was measured through the question: How is/was the relationship with your adoptive mother/father? The answering categories were: very good, good, tolerable, bad, and very bad.

Background: sociodemographic variables and current life situation.

Throughout the questionnaires at both stages 1 and stage 2, several sociodemographic characteristics were addressed including marital status, age at placement and whether the adoptees are parents themselves (see Table 2).

Background: education and employment. Adoptees were asked what their highest completed educational level was, their employment status and type of employment at time of the assessment. The questions were based on the Standard Occupational Classification developed by Statistics Netherlands [Centraal Bureau voor Statistiek] (CBS, 1992). Based on the different answering categories a division in low, middle and high education could be made. Caution should be taken in comparing the international and domestic adoptees on education and employment because of the age difference. Therefore, the focus will be on comparing them with their same-age peers from the Dutch population.

Statistical Analyses

Using one-sample *t*-tests, it was possible to investigate whether scores differed significantly from a certain value, without the availability of the raw data. Thus, it was possible to investigate whether the scores of the international adoptees differed significantly from the scores of the domestic adoptees and the Dutch population, on the quality of relationship, the ASR, the Rosenberg and on the feelings of loss. Regarding the age at administration, age of placement, gender and coping strategies and the ERS -Birth and -Adoption, the raw data of the domestic adoptees was available. This enabled us to perform several multivariate analyses of covariance (MANCOVAs), investigating possible differences between international and domestic adoptees, using age at assessment, age at placement and gender as covariates. To examine the relation between the appraisal of adoption and relinquishment, feelings of loss and the quality of the contact with the parents with the self-esteem and mental health of the adoptees, several multiple hierarchical regression analyses were performed. Age at assessment, age at

placement, gender, presence of a partner and coping strategies were also included as possible predictors.

Results

The results section starts with a description of the preliminary analyses performed for this study. The results are reported in three parts. In the first part, the mental health of the international adoptees, indicated by internalizing and externalizing behavior and self-esteem is discussed, and compared with that of the domestic adoptees and the Dutch population. In the second part, the results on the post-adoption precursors are described and where possible compared with the domestic adoptees and the Dutch population. Finally, in the third part, using a multivariate approach, the relation among these variables was examined more closely.

Preliminary Analyses

All variables were examined for the influence of outliers and missing values. The latter is particularly important, since 63 adoptees filled in the survey only partially, leaving us with a considerable amount of missing values. To investigate the influence of missing values, a missing values analysis was performed. Using the Separate Variance *t*-tests, it was found that the scores on several outcome variables were different for adoptees who only filled in the questionnaire partially compared to those who completed it. This indicates that the missing values indeed may influence the results of the present study. There are several possible methods to deal with missing values. However, almost all of the missing values belonged to individuals who did not complete the questionnaire. Replacing the missing values therefore would mean filling in the rest of the questionnaires of the adoptees. Based on methodological considerations it was decided to only include data of completed assessments (N = 930). Among these assessments, no missing values were present.

Outliers were first detected using boxplots, showing which scores fall away from the distribution (Tabachnick & Fidell, 2001). Three extreme outliers were detected; two on the internalizing scale and one on the externalizing scale. Extreme outliers are values that are more than three standard deviations away from the mean (Moore & McCabe, 2011). These outlying scores were replaced with scores of the 95th percentile, a method

Table 3:

Correlation Table between potential predictors and outcome variables (N=930)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Age	1									
2. Internalizing Problem behavior	.042	1								
3. Externalizing problem behavior	.021	.696**	1							
4. Self-esteem	-.021	-.717**	-.481**	1						
5. Appraisal of relinquishment	-.032	-.594**	-.476**	.559**	1					
6. Appraisal of adoption	-.064	-.548**	-.437**	.534**	.745**	1				
7. Feelings of loss	.063	.468**	.402**	-.442**	-.655**	-.589**	1			
8. Active Coping	-.016	-.089**	-.060	.191**	.081*	.116**	-.083*	1		
9. Passive Coping	-.019	-.080*	.092**	.123**	.064	.143**	-.066*	.358**	1	
10. Problematic Coping	.018	.636**	.484**	-.556**	-.429**	-.410**	.328**	-.072*	.072*	1

*. Correlation is significant at the 0.05 level

**.. Correlation is significant at the 0.01 level

that is called Winsorizing (Arguinis, Gottfredson & Joo, 2013). For internalizing, the new score that was given was 35, and for externalizing 23. On all three outcome variables, several scores fell just outside the whiskers of the boxplot. For internalizing and externalizing problem behavior and self-esteem, this concerned 14, 14 and 10 scores, respectively. Because all these respondents were so close to the whiskers of the boxplot, analyses were performed with and without these scores. This investigation of the scores showed that they were not of influence on the results, both univariate and bivariate. Therefore it was decided not to remove them from the analyses.

Finally, we tested for associations between potential predictors and mental health and self-esteem and at the same time checking for multicollinearity. The correlations are shown in Table 3. Significant predictors were included in the multiple multivariate hierarchical regression analyses and no cases of multicollinearity were found.

Psychological Adaptation

Problem behavior. Mental health was measured using the two overall scales internalizing and externalizing scales of the ASR. The internationally adopted men reported significantly more externalizing problem behavior than the internationally adopted women ($t(783) = 3.98, p < .001, d = 0.26$). The effect size of this difference is

indicated with Cohen's d , in this case it was a modest effect. Means and standard deviations are reported in Table 4 and illustrated in Figure 1.

The men and women were then compared separately to their domestically adopted and non-adopted Dutch counterparts, derived from the study of Dekker and colleagues (Dekker et al., 2011). When examining internalizing problem behavior, the internationally adopted women did not differ from the domestically adopted women, but the internationally adopted women reported significantly lower levels of internalizing problems than women from the Dutch population ($t(553) = -4.70, p < .001, d = 0.22$). For the internationally adopted men, a reversed pattern was found. The internationally adopted men reported significantly lower levels of internalizing behavior than the domestically adopted men ($t(390) = -6.11, p < .001, d = 0.28$), but they did not differ from men from the Dutch population.

On externalizing behavior, we found that internationally adopted women reported significantly lower levels of problem behavior than both domestically adopted women ($t(553) = -5.90, p < .001, d = 0.18$) and women of the Dutch population ($t(553) = -7.33, p < .001, d = 0.23$). The internationally adopted men reported significantly lower levels of externalizing behavior than domestically adopted men ($t(390) = -13.28, p < .001, d = 0.59$) but did not differ significantly from men of the Dutch population. Important to point out is that effect sizes, with the exception of the last result were all small.

In summary, regarding internalizing problem behavior we found that the internationally adopted women did not differ from domestically adopted women but scored significantly lower than the women from the general population. On externalizing problem behavior, internationally adopted women scored significantly lower than both the other two groups. With men, a reversed pattern was found: on both internalizing and externalizing they did not differ from the general population but they scored significantly lower than domestically adopted men.

Self-esteem. The international adoptees scored significantly higher than the non-adopted adults from the study of De Ridder and Kerssens (2003); $t(930) = 8.25; p < .001, d = 0.32$ ($M_{\text{non-adopted}} = 31.0, SD = 4.0; M_{\text{adopted}} = 32.65, SD = 6.13$). Adopted men scored significantly higher on self-esteem than adopted women ($M_{\text{men}} = 33.11, SD = 6.11; M_{\text{women}} = 32.34, SD = 6.14; t(824) = 1.96, p = .049, d = 0.12$).

Table 4:

Gender comparison of the mean scores for international and domestic adoptees on the three ASR-scales

	International adoptees		Domestic adoptees		Non-adopted Dutch adults	
	Men N = 391	Women N = 554	Men N = 29	Women N = 46	Men N = 938	Women N = 1083
Internalizing	10.7(10.5)	11.8(11.5)	14.0(12.4)** ¹	11.5(8.4)	10.4(9.5)	14.1(11.4)** ³
Externalizing	8.9(7.3)	7.05(6.6)	13.8(9.2)** ¹	8.7(6.3)** ²	9.4(7.2)	9.1 (7.0)** ³

** sign $p < .001$

**¹: comparison internationally vs. domestic adopted men

**²: comparison internationally vs. domestic adopted women

**³: comparison internationally adopted women vs. non-adopted women

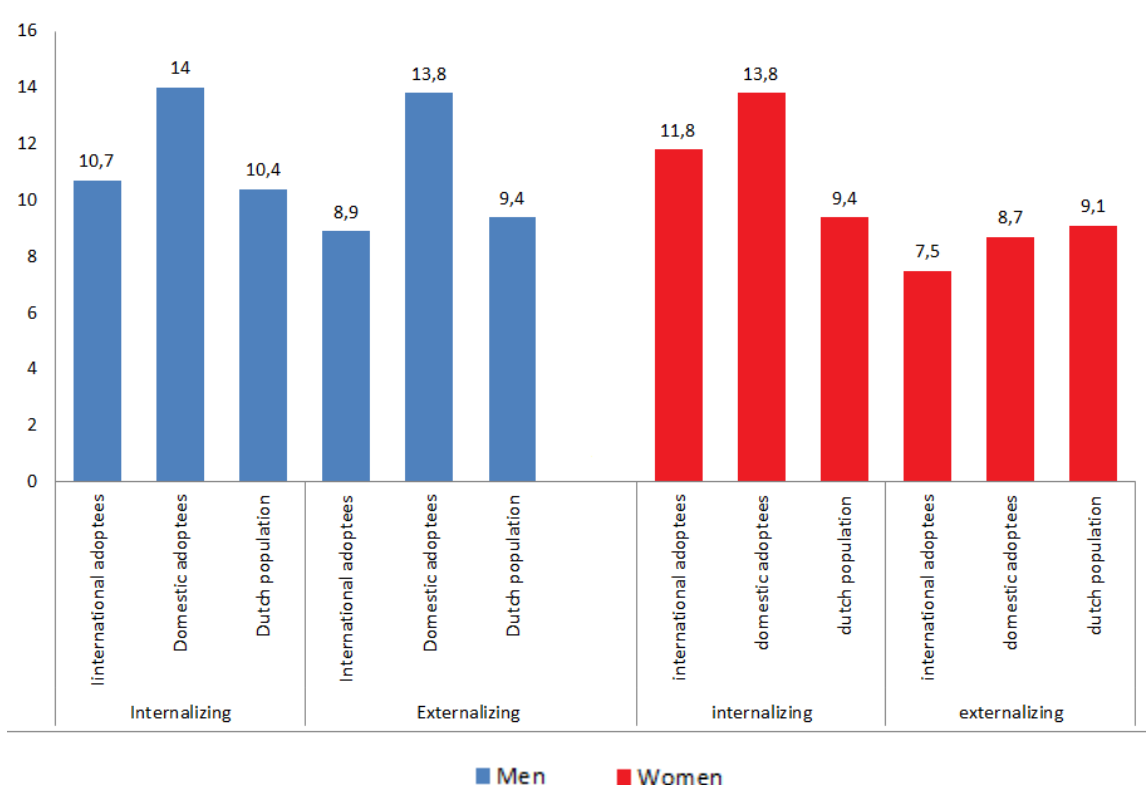


Figure 1: Internalizing and externalizing problem behavior scores of the international and domestic adoptees and the Dutch population.

Post-adoption Precursors of Psychological Adaptation

Appraisal of relinquishment and being adopted. The ERS -Birth and -Adoption were used to examine the appraisal of the adoptees on being relinquished and being adopted. First the findings of the current study will be presented after which again a comparison will be made with the domestic adoptees.

When thinking about their relinquishment, the most reported negative feeling of the international adoptees was ‘feeling different than others’. Twenty-four percent reported that they felt this way often to very often. The next most reported negative feeling was feeling rejected; 15% reported feeling this was often to very often. The most reported positive feeling of the adoptees when thinking about being relinquished was feeling calm and at ease; 69% indicated they (very) often felt this way.

Feeling different than others was also the most reported negative feeling when thinking on their adoption: 23% of the adoptees reported feeling like this often to very often. When thinking about being adopted, the most reported positive feeling is feeling wanted or wished for (77%).

The positive feelings of the international adoptees significantly predominated their negative feelings, both about relinquishment and adoption with large effect sizes ($t_{\text{ERS-birth}}(922) = 26.04, p < .001, d = 1.52$; $t_{\text{ERS-adoption}}(922) = 32.65, p < .001, d = 1.95$). Furthermore, when focusing only on the positive feelings, the adoptees experienced more positive feelings on being adopted than on being relinquished, although the effect size was modest ($t_{\text{positive}}(926) = -11.99, p < .001, d = 0.32$).

Since the raw data on the ERS -Birth and -Adoption of the domestic adoptees were available, a MANCOVA was performed to investigate whether international and domestic adoptees differed significantly in appraisal of relinquishment and adoption after controlling for age at assessment, age at placement and gender. The results that are presented here have a small effect size or larger, indicated by eta squared ($\eta^2 > .01$). The remaining results with a significant but negligible effect are presented in Appendix B.

The most important predictor of the feelings towards the relinquishment and adoption was one of the covariates, namely age at placement. The older the international and domestic adoptees were at their placement in the adoption family, the more negative and less positive they were towards their relinquishment and their adoption. The corresponding statistics and effect sizes can be found in appendix B.

After controlling for age at assessment, age at placement and gender, being internationally of domestically adopted remained a significant predictor of the appraisal of relinquishment and adoption of the adoptees. When thinking about their relinquishment, compared to the domestic adoptees the international adoptees reported significantly more often that they felt happy, special and calm and at ease ($F_{\text{happy}}(1,992) = 10.98, p = .001, \eta^2 = .011$; $F_{\text{special}}(1,992) = 13.23, p < .001, \eta^2 = .013$, $F_{\text{calm}}(1,992) = 11.69, p = .001, \eta^2 = .012$). The only negative emotion that was significantly more often reported by the international adoptees compared to the domestic adoptees was feeling different than others ($F(1,992) = 9.81, p = .002, \eta^2 = .010$). When thinking about their adoption, international adoptees reported significantly more feelings of happiness and feeling special than the domestic adoptees ($F_{\text{happy}}(1, 993) = 13.78, p < .001, \eta^2 = .014$; $F_{\text{special}}(1,993) = 10.28, p = .001, \eta^2 = .010$).

Feelings of loss. The Adoption Loss Scale was used to measure feelings of loss, anger or curiosity that the adoptees might have towards their birthparents and whether they feel different because they are adopted. The mean score of the Total Loss scale was 18.38 ($SD = 6.68$) and 36% of the adoptees scored above 20, which indicates that these feelings of loss are present in a way that interferes with the daily functioning of the adoptee. This percentage was much lower among the domestic adoptees and they scored significantly lower than the international adoptees ($t(927) = 11.34, p < .001, d = .38$).

Coping. The coping strategy on which the adoptees scored the highest was the active tackling of problems, which is considered a positive coping style ($M = 14.47, SD = 2.78$). The lowest scores were found on seeking religious support ($M = 4.36, SD = 2.02$). Women scored significantly higher than men on several positive coping styles, namely:

Table 5:
Statistics and effect sizes of gender as predictor and coping as dependent variable

Dependent variable	M(SD)		<i>df</i>	<i>F</i>	<i>p</i>	η^2
	Men	Women				
Palliative reacting	2.16(.58)	2.26(.55)	1,977	16.540	<.001	.017
Seeking social support	2.10(.54)	2.50(.62)	1,977	108.713	<.001	.100
Comforting thoughts	2.32(.56)	2.5(.62)	1,977	22.149	<.001	.022
Re-evaluating	2.15(.70)	2.32(.75)	1,977	13.620	<.001	.014
Active coping	35.93(6.16)	37.20(6.11)	1,977	11.554	.001	.012
Passive Coping	25.38(4.62)	28.08(5.19)	1,977	71.628	<.001	.068

seeking social support (S), reassuring thoughts (G) and on the overall scales Active (A) and Passive (P) coping scales, created for the current study ($t_s(924) = -9.72, p < .001$; $t_g(924) = -4.84, p < .001$; $t_A(826) = -3.22, p = .001$; $t_P(924) = -7.82, p < .001$). No other gender differences were found.

Two MANCOVAs were performed to investigate whether international adoptees differed from domestic adoptees, given their age at assessment, the age at placement and gender on their use of different coping styles. Only significant effects with small effect sizes or larger, indicated by η^2 are reported. The remaining significant effects with negligible effect sizes can be found in Appendix C.

Gender was the strongest predictive covariate of the different coping styles. Women scored higher than men on palliative reacting, seeking social support, comforting thoughts and re-evaluating, again all positive coping styles and on the two overall positive coping scales active and passive coping. The corresponding statistics and effects sizes are shown in Table 5. The differences on seeking social support and passive coping both had medium effect sizes. All other gender differences were accompanied with small effect sizes.

After controlling for current age, age at placement and gender of the adoptees, international and domestic adoptees significantly differed on only one coping style with an effect size that was small. Compared to domestic adoptees, international adoptees scored significantly lower on the coping style active tackling ($F(1, 977) = 9.60, p = .002$). All other significant associations were accompanied with a negligible effect size.

Quality of contact with the parents. As shown in Table 6 the vast majority of 75% described the quality of the relationship with the adoptive mother as good or very good. However, this is significantly lower than the perceived quality of the relationship between the domestic adoptees and non-adopted adults and their mother ($\chi^2(4, N = 930) = 12.47, p = .01$).

A similar pattern was found for the relationship between the international adoptees and their father: 71% described the relationship as good or very good. Although the domestic adoptees exceeded this percentage with 14%, this difference did not reach significance. When the percentages were taken together, we found that 66% of the international adoptees described their relationship with both parents as good or very good. A total of 8% described their relationship with both parents as bad or very bad. Since no raw data was available for the domestic adoptees and the non-adopted adults, it was not possible to control for any covariates.

Table 6:

Comparison of the perceived quality (%) of the relationship between the adoptees and their adoptive parents and their domestic adopted and non-adopted counterparts.

Relationship	International adoptees		Domestic adoptees		Non-adopted population	
	Mother N = 847	Father N = 804	Mother N = 72	Father N = 72	Mother N = 1002	Father N = 948
(Very) Good	74.9	71.2	90.3	84.7	89.0	83.5
Moderate	14.2	17.4	6.9	9.7	7.7	10.0
(Very) Bad	11.0	11.2	2.8	5.6	3.3	6.4

Education, employment and marital status. The current sample of international adoptees was relatively highly educated in comparison with the Dutch population. A percentage of 47 had a high education in comparison to 40% of the general population (CBS, 2011). All percentages are shown in Table 2. In Figure 2, the two pie charts represent the percentages of the educational levels of the international and the domestic adoptees and a difference was found in the percentages of middle and high education. As mentioned earlier, this difference might be due to the difference in age; the domestic adoptees in higher education may not yet have completed their education. However, no raw data on educational level was available for the domestic adoptees, leaving us to speculation.

Concerning employment status, 78% of the international adoptees had a paid job at time of administration. A relatively low percentage was looking for a job; 4% was unemployed compared to 6% of the general population (CBS, 2011). A vast majority was in a relationship with a partner (82%) of which half married (42%). Taken together, 58% of the adoptees had children, however significantly more women had children than men ($\chi^2(1, N = 930) = 28.98, p < .001$).

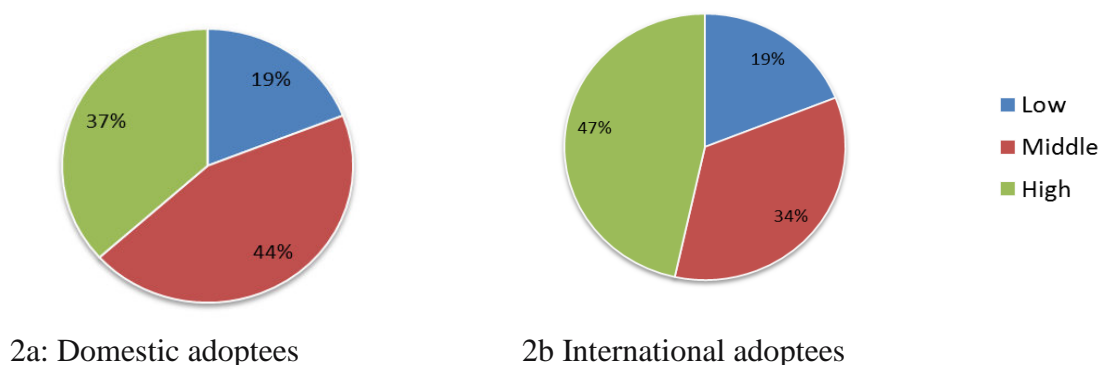


Figure 2: Pie-charts of educational levels of international and domestic adoptees.

Multivariate Approach

Through three multiple hierarchical regression analyses we investigated the predictive value of demographic variables, the adoption related measures and coping strategies on the internalizing and externalizing problem behavior and self-esteem of the international adoptees.

The variables that were significantly related to mental health and self-esteem were entered in the following steps: (1) gender, age at time of administration, age at placement, education and having a romantic relationship; (2) adoption variables: quality of contact with the parents, scores on the ERS -Birth and -Adoption and the ALS; (3) coping strategies. All three regression equations were significant with 54% explained variance of internalizing problem behavior, 40% of externalizing problem behavior and 48% of the self-esteem of the adoptees. Effect sizes of all three models, indicated by the adjusted R^2 , were large ($R^2_{int} = .55$, $R^2_{ext} = .38$, $R^2_{se} = .48$). All three complete regression models can be found in Appendix D.

Internalizing problem behavior. In the first step, 5.4% of the variance could be explained by the included variables ($F_{\text{Change}}(5,667) = 8.76$, $p < .001$). Women and adoptees without a partner had significant higher levels of internalizing problem behavior ($\beta_{\text{gender}} = .076$, $p = .046$; $\beta_{\text{partner}} = .163$, $p < .001$). Lower education was also significantly associated with higher levels of internalizing problem behavior ($\beta = -.150$, $p < .001$).

The second set of variables that was included accounted for 40.2% of the explained variance ($F_{\text{Change}}(5, 662) = 78.59$, $p < .001$). Less positive feelings on the ERS -Birth and the ERS -Adoption were associated with higher levels of internalizing problem behavior ($\beta_{\text{ERS-birth}} = -.332$, $p < .001$; $\beta_{\text{ERS-adoption}} = -.294$, $p < .001$). Higher reported levels of feelings of loss on the ALS were associated with higher levels of internalizing problem behavior ($\beta = .101$, $p = .014$). Strikingly, only the quality of the relationship with the adoptive mother significantly predicted internalizing behavior ($\beta = -.109$, $p = .027$). Lower perceived quality of the relationship with the mother was associated with more internalizing problem behavior. The quality of the relationship with the adoptive father was not significantly related to internalizing behavior. After the inclusion of the adoption variables, of the first set of variables only whether adoptees had a partner remained significant, in that adoptees without a partner showed more internalizing problem behavior ($\beta = .113$, $p < .001$).

In the third set we included the coping variables, which explained 15.1% of the variance of the model ($F_{\text{Change}}(3, 659) = 76.05, p < .001$). Passive coping and problematic coping styles were both significantly related to internalizing problem behavior with lower levels of passive coping ($\beta = -.087, p = .003$) and higher levels of problematic coping ($\beta = .451, p < .001$) associated with higher levels of internalizing problem behavior. After the inclusion of the coping variables, all adoption variables (ERS- Birth and -Adoption, ALS and quality of the parental relationship) remained significant predictors of the internalizing problem behavior of the adoptees.

Externalizing problem behavior. The sociodemographic variables explained 3.9% of the variance in externalizing behavior ($F_{\text{Change}}(5,667) = 6.46, p < .001$). This time only gender and education were significant predictors with men and adoptees with lower education showing more externalizing behavior problems ($\beta_{\text{gender}} = -.113, p = .003$; $\beta_{\text{educ}} = -.144, p < .001$).

In the second step 25% of the variance was explained by the adoption measures ($F_{\text{Change}}(5,667) = 46.97, p < .001$). Similar to the internalizing problem behavior, we found that less reported positive feelings on the ERS- Birth and -Adoption and more reported feelings of loss on the ALS significantly predicted higher levels of externalizing problem behavior ($\beta_{\text{ERS-birth}} = -.277, p < .001$; $\beta_{\text{ERS-adoption}} = -.236, p < .001$; $\beta_{\text{ALS}} = .101, p < .001$). The quality of the relationship with the adoptive parents was not significantly related to externalizing problem behavior.

The third set added 9.9% to the explained variance ($F_{\text{Change}}(3,659) = 36.01, p < .001$). After adding the coping variables to the regression model we found a similar pattern with externalizing problem behavior as we found with internalizing problem behavior. Lower levels of passive coping and higher levels of problematic coping significantly predicted higher levels of externalizing problem behavior ($\beta_{\text{passive}} = .171, p < .001$; $\beta_{\text{problematic}} = .288, p < .001$). The ERS-Birth and -Adoption remained significant predictors after the inclusion of the Coping variables.

Self-esteem. The first set of variables explained 7.5% of the variance in self-esteem ($F_{\text{Change}}(5,667) = 10.89, p < .001$). Significant predictors were gender, age at placement, education and relationship. Men showed higher levels of self-esteem than women ($\beta = -.091, p = .016$). The older the adoptees were at placement, the lower levels of self-esteem they reported ($\beta = -.098, p = .012$). Furthermore, adoptees with higher educational levels and with a partner, reported higher levels of self-esteem ($\beta_{\text{edu}} = .189, p < .001$; $\beta_{\text{partner}} = -.128, p = .001$).

The second set of variables explained 30.3% of the variance in self-esteem ($F_{\text{Change}}(5,662) = 64.48, p < .001$). After the addition of the adoption measures, gender and age of placement were no longer significant predictors of self-esteem. More reported positive feelings on both the ERS -Birth and the ERS -Adoption were significantly associated with higher levels of self-esteem ($\beta_{\text{birth}} = .287, p < .001$; $\beta_{\text{adoption}} = .311, p < .001$). More reported feelings of loss on the other hand was significantly associated with lower levels of self-esteem ($\beta = -.089, p = .034$). Only the quality of the relationship with the mother was significantly associated with self-esteem ($\beta = .115, p = .024$), and not the relationship with the father which was similar to what we found with internalizing problem behavior.

The three coping styles all added significantly to the model, with 10.9% explained variance ($F_{\text{Change}}(3,659) = 46.91, p < .001$). Higher levels of active and passive coping were significantly associated with higher levels of self-esteem ($\beta_{\text{active}} = .086, p = .005$; $\beta_{\text{passive}} = .091, p = .004$). Higher scores on problematic coping were associated with lower self-esteem ($\beta = -.357, p < .001$). After the inclusion of the coping variables, the feelings of loss (ALS) no longer significantly added to the model. The other adoption measures however (ERS -Birth and -Adoption) remained significant predictors of self-esteem.

Discussion

In the current study we found that adult international adoptees ($N = 986$) with a mean age of 38 years, did not differ from the general population in problem behavior, with internationally adopted women ($n = 571$) scoring even significantly lower than their non-adopted counterparts in the general population. Furthermore, the adoptees, both men and women, scored significantly higher on self-esteem than the Dutch population. Regarding educational levels, the sample of international adoptees also had a higher percentage of higher educated individuals than the percentage in the non-adopted Dutch population. This is remarkable particularly because of the high percentage of pre-adoption adversity in the internationally adopted group. These results indicate that this part of the first generation of international adoptees living in the Netherlands is psychologically well adapted in terms of problem behavior and self-esteem and also in terms of educational levels. Both positive and negative associations were found between the post-adoption

precursors including the appraisal of relinquishment and adoption, feelings of loss, coping and the quality of the relationship with the adoptive mother.

Psychological Adaptation

Problem behavior. As far as we know, this is the first study that investigated the psychological adaptation of international adoptees at this age. Based on the meta-analytical findings of Juffer and Van IJzendoorn (2005) we hypothesized that international adoptees would show more problem behavior than individuals from the general population. These findings were not replicated in the current study with international adoptees and individuals from the general population showing comparable levels of problem behavior. We did find a gender difference with internationally adopted men showing significantly more problem behavior than internationally adopted women, which was in line with what we expected based on the research of Storsbergen and colleagues (2010) and Dekker and colleagues (2011), a gender difference that is also commonly found in the general population.

The question now arises whether problem behavior decreases and stabilizes as adoptees grow older. In a previous follow-up of the current sample, Van der Vegt and colleagues (2009) found that adoptees who had experienced pre-adoption adversities may develop post-childhood psychiatric disorders, both in adolescence and young adulthood. The results of the current study suggest that these problems might decrease as adoptees grow older. There is of course a difference between psychiatric disorders and the problem behavior measured in the current study. However, internalizing behavior is known to be indicative of depression and anxiety levels and externalizing behavior of aggression and compulsive behaviors (Achenbach & Rescorla, 2003).

Another explanation of these findings might be that the current sample is not a representative sample of the adult adoptees, resulting in an underrepresentation of the actual levels of problem behavior. We investigated the possible selective attrition between the first stage of the fifth follow-up and the current study and found that significantly more women and more married individuals had participated in the current study. However, since no data was available from previous follow-ups, future research is needed to compare the responders and non-responders on psychiatric history to see to what extent we can question whether this sample is a true representation of the adult international adoptee population.

Self-esteem. Based on the meta-analysis of Juffer and Van IJzendoorn (2007) we expected not to find a difference in self-esteem between the international adoptees and the Dutch population. If there would be a difference, based on theoretical arguments, one would expect it to be in favor of the non-adopted counterparts. Contrary to our expectations and possible theories, we found that the international adoptees showed significantly higher levels of self-esteem than individuals of the Dutch population. This is remarkable for an adoptee sample with a relative high percentage of pre-adversity and it might be related to the relatively low levels of problem behavior that we found. Furthermore, men showed significantly higher levels of self-esteem than women, a gender difference that Storsbergen and colleagues (2010) did not find. When searching for an explanation for this difference, we can only speculate. For instance the women of the current sample are at an age at which they start having children. That may be a time at which they feel less secure, because they miss the support of generations giving birth before them. Giving birth to their own children might accentuate that one thing they cannot compare with their adoptive mother, namely the experience of giving birth.

Multivariate Analyses

Appraisal of relinquishment and adoption, and feelings of loss. In line with our expectations we found that a more negative appraisal of relinquishment and adoption and more feelings of loss were significantly associated with more problem behavior and lower self-esteem. This confirms the findings of Storsbergen and colleagues (2010) and shows that the theoretical model of Smith and Brodzinsky (1994, 2002) that was developed for children between 6 and 16 years, may still hold into adulthood. This model states that a negative appraisal of relinquishment and adoption and feelings of loss are associated with more negative coping styles and more problematic psychological adjustment. Storsbergen and colleagues (2010) were the first to investigate this paradigm among a homogeneous sample of adult international adoptees with a mean age of 29 years. The current study shows that this paradigm holds among a more heterogeneous group of international adoptees with a mean age of 38 years. These findings suggest that the feelings regarding relinquishment and adoption and the feelings of loss towards the biological parents might still be a source for problematic adjustment in adoptees.

Coping. In line with the theoretical model of Smith and Brodzinsky (1992, 2002) we found that positive coping strategies were associated with better psychological

adaptation while problematic coping was related to less optimal psychological adaptation. All associations were significant and in line with our hypothesis, but varied in strength. The effect sizes of the associations between the positive coping styles and problem behavior and self-esteem on the one hand were small and some even negligible. The effect sizes of the association between problematic coping styles and problem behavior and self-esteem on the other hand were large. Keeping in mind that the correlations between the positive and problematic coping styles were not significant, this would mean that it is not the absence of positive coping styles but the presence of problematic coping styles that might lead to more problems in psychological adaptation. Furthermore, this also confirms the model of Smith and Brodzinsky (1994, 2002) in that only the negative coping styles are predictive of the psychological outcomes of the adoptees.

Family relationships. Only the relationship with the mother significantly predicted internalizing problem behavior and self-esteem, whereas the quality of the relationship with the father was not related to either of those constructs. One could think of the possible explanation that the adoptees were raised in a time when a more classic breadwinner model was apparent (Tijdens, Van der Lippe, & de Ruijter, 2000). This would mean that the mother always has had a more important role in the daily life of the adoptees. A difference in roles between mother and father that never changed over the life course of the adoptees. Furthermore, a large body of research has shown that the attachment relationship with the mother is more predictive of child development and later outcomes than that of the father (Costello, 2013; Van IJzendoorn & De Wolff, 1997).

Finally, when we examine the three regression models more closely, there are two things that stand out. First of all, after including the post-adoption precursors of the psychological adaptation, we found that pre-adoption adversity indicated by age at placement, was no longer associated with neither problem behavior nor self-esteem. This further confirms the notion that pre-adoption adversity does not determine the outcome of adoptees on its own. In fact, we found that among the international adoptees in this sample, it was not of influence at all. Secondly, the fact that negative coping styles were strong predictors for psychological adaptation is something that is not specific for this sample of international adoptees but is more general for a lot of different populations (e.g., Kim, Valdimarsdottir, & Bovbjerg, 2003; Meijer, Sinnema, Bijstra, Mellenbergh, & Wolters, 2002). The fact that domestic and international adoptees did not differ in levels of negative coping either, further confirms this notion. However, the way the adoptees felt about their relinquishment and adoption and their feelings of loss were still

significantly related to psychological adaptation after controlling for coping, indicating that these emotions that are unique for adoptees also determine their psychological adaptation.

International vs. Domestic Adoptees

In the previous section of our discussion we compared the scores of the international adoptees to individuals from the Dutch population. In the following section we discuss the comparison of the Dutch international adoptees with a sample of Dutch domestic adoptees, to investigate whether the same mechanisms hold for both groups and to gain further insight on why some adoptees thrive and others do not.

Psychological adaptation. Based on the meta-analysis of Juffer and Van IJzendoorn (2005), we hypothesized that domestic adoptees would show more problem behavior than international adoptees. This was indeed confirmed for the adopted men but not for the internationally and domestically adopted women who did not differ on internalizing problem behavior. Dekker and colleagues (2011) compared the domestic adoptees with the international adoptees on problem behavior results from a previous follow-up. They could not replicate the findings of Juffer and Van IJzendoorn (2005). Contrary to our study, at the time of administration of the study of Dekker and colleagues (2011), the international and domestic adoptees were at the same age. However, the instruments used in that comparison were not the same: the Adult Self Report (ASR) was used to measure problem behavior of the domestic adoptees whereas the Young Adult Self Report (YASR) was used to measure problem behavior of the international adoptees. In the current study the international adoptees were significantly older, but the same measurement was used for both groups, namely the ASR.

A possible explanation of the difference might be the visibility of the adoption. The different physical appearances the internationally adopted child and their adoptive parents might cause the child to feel more different than their family and environment. But it makes the adoption also much more visible which may result in a more open communication about the adoption and more trust in the family. This explanation was also proposed by Juffer and Van IJzendoorn (2005). The resemblance in physical appearance and cultural background in domestic adoption might result in the opposite, namely a lack of open communication and a disregard for possible problems that might arise from being relinquished and adopted. Furthermore, the domestic adoptees might

also be bothered with more questions and frustration about the reason why they were relinquished than international adoptees. The Netherlands is a prosperous country, so for the adoptee the need to give up a child may be less justified. This might increase feelings of being unwanted among the domestic adoptees. Finally, there may be a genetic component that might also be responsible for this difference. Dekker and colleagues (2011) found that 25% of the biological mothers of the domestic adoptees suffered from psychological problems or substance abuse problems, which might be indicative of genetic problems.

Appraisal of being relinquished and adopted. Another construct that might help to understand the difference between international and domestic adoptees is the appraisal towards being relinquished and being adopted. The availability of the raw data for the appraisal of both the international and domestic adoptees enabled us to control for several background variables while comparing both groups. Concerning psychological adaptation, we found that age at placement could not significantly predict the adaptation of the international adoptees. When comparing the international and domestic adoptees, the age at placement was the strongest predictor of appraisal. However, after controlling for the effects of age at placement, the international adoptees scored significantly higher on several positive emotions regarding both relinquishment and adoption than the domestic adoptees. Thus, when investigating why some adoptees thrive and others do not, both pre- and post-adoption precursors must be included in order to fully understand the mechanisms which contribute to these differential outcomes.

There was only one negative emotion on which the international adoptees scored significantly higher, which was feeling different than others. On this particular emotion, the visibility of the adoption might also be at work, simply because the international adoptees look different from their adoptive family. When the adoptees were growing up, the difference in physical appearance was even more apparent than what it would be now, since the population was much more homogenous back in the 70's and 80's (CBS, 2013). This might have increased the visibility even further, maybe even to the extent that parents could not avoid talking about the adoption.

Family relationships. In contrast to the more positive appraisal of the international adoptees, we found that they perceived the quality of the relationship with their parents significantly lower than both the domestic adoptees and the general population. Based on the difference found in rates of problem behavior, one would expect the opposite. In a previous follow-up Tieman (2006) found that although international

adoptees showed more problematic relationships with their family, they had more close friendships compared to the general population. An interesting lead for following research could be to investigate whether these close friendships buffer against possible negative effects of the problematic relationship with the family. Furthermore, at that time (70's and 80's) parents were much less prepared for the adoption than nowadays, mainly because of the lack of knowledge about the consequences of being adopted (Tieman et al., 2005). For instance, we now know that it is important that parents help their (internationally) adopted child with their cultural socialization. In other words, it is important to help the child to get acquainted with their own original culture as well as their newly acquired culture (Mohanty, 2006, 2012). In the 70's, at the time the adoptees from the current sample were adopted, that construct had not yet been embraced in the adoption field and children were expected to simply be Dutch. This might strike as contrasting with our prior statement about the visibility of the adoption. However, this may not necessarily be the case. Open communication about the adoption can exist without incorporating the culture of the country of origin of the child. Later in life, adoptees may find more friends with their own skin tone, with whom they may feel more at ease.

Limitations

A limitation of the current study is the possible selective attrition that may have occurred since the very beginning of this study. Since no data was available of previous follow-ups, it was not possible to examine this for the current study. Future research should examine whether the non-responders have a different history of more psychiatric problems for instance than the adoptees who did participate in the current study.

Furthermore, all data were collected using self-report questionnaires, which may be less objective than for example observations or informant-reports. However, our findings are in line with results of previous research in this field, indicating that these findings are representative for this field. The measures that were used are well known, standardized, validated and reliable measures. Furthermore, using a questionnaire that can be filled in at home by the participants enabled us to include a very large sample of 980 international adoptees. A great effort was put in to make sure that as many adoptees as possible participated in the current study. Despite the fact that in the end not all adoptees agreed to participate, we did find strong and striking differences in line with previous

research. The fact that only self-report measures were used in this study might also be reflected in a possible informant bias. In future research it can be recommended to include also other informants such as partners, relatives or friends, or use observations.

Finally, the absence of raw data of the domestic adoptees on problem behavior, impeded us to further compare the domestic and international adoptees on the mechanisms behind the differential outcomes of the two groups on a multivariate level. In future research, these mechanisms should be further investigated using the raw data on all variables for both groups.

Future Research and Implications

The current study gives several options for research to come. It is important to continue to follow this sample further into their adulthood. For instance, what are the effects of having children of their own? And what happens to the few who struggle adapting? Do these problems continue to exist or, as our results suggest, do they stabilize as the adoptees grow older?

Another important feature for adoption research to come, is that it may be advisable to start new longitudinal research. Times have changed, as has our knowledge on the long-term effects of adoption. Parents who are about to adopt a child, are prepared much better than thirty years ago, based on this acquired knowledge. On top of that, compared to the start of the current study, there are also new countries of origin, which may also influence the way these children develop and whether they will thrive or not (Chamon & Juffer, 2013). New longitudinal research might give us insight in the effects of these changed situations, and will allow us to continue improving the adoption process for both the child and the parents to be.

Apart from the implications for future research, there are also some practical implications that can be derived from the current study. The association that we found between both the appraisal of adoption and coping strategies and psychological adaptation has shown that these may be important topics for the clinical field. The current study shows that on top of general problems such as using negative coping styles, some adoptees may experience specific feelings towards their relinquishment and/or adoption, that are associated with higher levels on problem behavior. Thus, adoptees who experience problems with psychological adaptation, might benefit from reflecting on and learning to deal with their emotions towards their own adoption or relinquishment.

Clinicians should be made aware of this association, for it might give them a good start for further diagnostic and treatment plans.

Furthermore, in preparing parents for welcoming and raising their adoptive child, the visibility of and open communication about adoption can be very important to emphasize, especially when the child is not so very different in physical appearance. This may lead to more trust in their family and eventually even in a better psychological adaptation. Finally, it must be said that in the current sample of international adoptees the majority is well adjusted and does not differ from the general population in psychological adaptation.

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Appendix A: Factor Loadings of the Utrecht Coping list for the Scales Active, Passive and problematic coping.

Table 1:

The eigenvalues and explained variance of the three coping scales: active, passive and problematic coping.

Component	Initial Eigenvalues		
	Total	% Of explained variance	% Cumulative explained variance
Active Coping	2,603	26,026	26,026
Passive Coping	1,718	17,177	43,202
Problematic Coping	1,133	11,329	54,531

Table 2:

The factor loadings of the different coping styles on the three coping scales, using varimax rotation.

	Component		
	Active Coping	Passive Coping	Problematic coping
active tackling	,443		-,599
comforting thoughts	,709		
re-evaluating	,690		
adopting new standards	,716		
seeking religious support	,420		
expression of emotions		,806	
seeking social support		,627	
palliative reacting		,551	
avoiding			,769
Passive reacting			,767

Appendix B: MANCOVA of Appraisal of relinquishment and adoption of international and domestic adoptees, covariates; gender, age at administration, age at placement.

Table 1:
Multivariate Analysis of Variance, Appraisal of relinquishment (covariates: age at placement and gender)

Source of variance	Dependent Variable	SS	df	MS	F	p	η^2
Age at placement	Happy	4,338	1	4,338	4,751	,030	,005
	Sad	9,229	1	9,229	15,716	,000	,016
	Wanted	4,902	1	4,902	4,640	,031	,005
	Loved	6,480	1	6,480	6,481	,011	,006
	Bad	7,285	1	7,285	18,645	,000	,018
	Rejected	7,921	1	7,921	10,466	,001	,010
	Good	3,222	1	3,222	3,896	,049	,004
	Confused	7,386	1	7,386	15,379	,000	,015
	Angry	8,381	1	8,381	16,290	,000	,016
	Calm, at ease	7,430	1	7,430	8,993	,003	,009
Gender	Sad	9,353	1	9,353	15,926	,000	,016
	Rejected	14,154	1	14,154	18,702	,000	,019
	Confused	2,862	1	2,862	5,959	,015	,006
	Angry	2,132	1	2,132	4,144	,042	,004
	Calm, at ease	5,233	1	5,233	6,334	,012	,006
International vs. domestic adoption	Happy	10,027	1	10,027	10,981	,001	,011
	Different than others	7,723	1	7,723	9,807	,002	,010
	Special	12,023	1	12,023	13,239	,000	,013
	Rejected	1,855	1	1,855	2,451	,118	,002
	Good	4,729	1	4,729	5,716	,017	,006
Error	Happy	905,848	992	,913			
	Different than others	781,241	992	,788			
	Sad	582,559	992	,587			
	Wanted	1048,023	992	1,056			
	Loved	991,822	992	1,000			
	Bad	387,630	992	,391			
	Special	900,874	992	,908			
	Rejected	750,786	992	,757			
	Good	820,595	992	,827			
	Verward	476,432	992	,480			
	Angry	510,383	992	,514			
	Calm, at ease	819,545	992	,826			
Total	Happy	944,082	996				
	Different than others	818,973	996				
	Sad	628,698	996				
	Wanted	1090,708	996				
	Loved	1033,236	996				
	Bad	401,906	996				
	Special	959,565	996				
	Rejected	785,402	996				
	Good	854,040	996				
	Verward	492,891	996				
	Angry	530,696	996				
	Calm, at ease	878,504	996				

Table 2:

Multivariate Analysis of Variance, Appraisal of relinquishment (covariates: age at placement and gender)

Source of variance	Dependent Variable	SS	df	MS	F	p	η^2
Age at placement	Happy	27,969	1	27,969	36,508	,000	,035
	Different than others	5,498	1	5,498	7,068	,008	,007
	Sad	29,637	1	29,637	54,936	,000	,052
	Wanted	45,831	1	45,831	58,402	,000	,056
	Loved	42,454	1	42,454	54,120	,000	,052
	Bad	13,318	1	13,318	30,823	,000	,030
	Special	8,881	1	8,881	8,373	,004	,008
	Rejected	23,834	1	23,834	44,303	,000	,043
	Good	23,638	1	23,638	28,773	,000	,028
	Verward	12,371	1	12,371	25,466	,000	,025
	Angry	29,096	1	29,096	51,650	,000	,049
Calm, at ease	22,794	1	22,794	26,958	,000	,026	
Gender	Sad	6,265	1	6,265	11,613	,001	,012
	Special	10,224	1	10,224	9,640	,002	,010
	Rejected	4,712	1	4,712	8,759	,003	,009
International vs. domestic adoption	Happy	10,558	1	10,558	13,782	,000	,014
	Different than others	4,728	1	4,728	6,079	,014	,006
	Loved	3,714	1	3,714	4,735	,030	,005
	Bad	1,718	1	1,718	3,977	,046	,004
	Special	10,907	1	10,907	10,284	,001	,010
Error	Good	3,236	1	3,236	3,939	,047	,004
	Happy	760,734	993	,766			
	Different than others	772,429	993	,778			
	Sad	535,700	993	,539			
	Wanted	779,264	993	,785			
	Loved	778,959	993	,784			
	Bad	429,049	993	,432			
	Special	1053,171	993	1,061			
	Rejected	534,208	993	,538			
	Good	815,761	993	,822			
	Verward	482,373	993	,486			
Angry	559,394	993	,563				
Calm, at ease	839,623	993	,846				
Total	Happy	811,996	997				
	Different than others	817,587	997				
	Sad	596,763	997				
	Wanted	841,284	997				
	Loved	840,426	997				
	Bad	449,736	997				
	Special	1123,412	997				
	Rejected	574,834	997				
	Good	853,953	997				
	Verward	504,662	997				
	Angry	604,970	997				
Calm, at ease	886,831	997					

Appendix C: MANCOVA of coping styles and scales for international and domestic adoptees with the covariates age at administration, age at placement and gender.

Table 1:

Multivariate Analysis of Variance, coping scales (covariates age at administration, age at placement and gender.

Source of Variance	Dependent Variable	SS	df	MS	F	p	η^2
Age	Active coping	1,868	1	1,868	,051	,821	,000
	Passive coping	17,841	1	17,841	,738	,391	,001
	Problematic coping	3,364	1	3,364	,418	,518	,000
Age at placement	Active coping	318,134	1	318,134	8,676	,003	,009
	Passive coping	203,169	1	203,169	8,401	,004	,009
	Problematic coping	23,067	1	23,067	2,869	,091	,003
Gender	Active coping	423,668	1	423,668	11,554	,001	,012
	Passive coping	1732,161	1	1732,161	71,627	,000	,068
	Problematic coping	2,785	1	2,785	,346	,556	,000
Adoption	Active coping	234,373	1	234,373	6,392	,012	,006
	Passive coping	58,624	1	58,624	2,424	,120	,002
	Problematic coping	2,264	1	2,264	,282	,596	,000
Error	Active coping	35825,928	977	36,669			
	Passive coping	23626,716	977	24,183			
	Problematic coping	7854,387	977	8,039			
Total	Active coping	37339,956	981				
	Passive coping	25598,530	981				
	Problematic coping	7892,600	981				

Table 2:

Multivariate Analysis of Variance, coping styles (covariates age at administration, age at placement and gender.

Source of variance	Dependent Variable	SS	df	MS	F	p	η^2
lftk	Active tackling	100,020	1	100,020	12,517	,000	,013
	palliative reacting	42,773	1	42,773	17,256	,000	,017
	seeking social support	50,012	1	50,012	4,057	,044	,004
	seeking religious support	16,830	1	16,830	4,274	,039	,004
Gender	palliative reacting	40,999	1	40,999	16,540	,000	,017
	seeking social support	1340,159	1	1340,159	108,713	,000	,100
	comforting thoughts	71,955	1	71,955	22,149	,000	,022
	re-evaluating	29,051	1	29,051	13,620	,000	,014
	adopting new standards	14,687	1	14,687	8,259	,004	,008
	seeking religious support	,158	1	,158	,040	,841	,000
Adoption	active tackling	76,766	1	76,766	9,607	,002	,010
	adopting new standards	6,840	1	6,840	3,846	,050	,004
Error	active tackling	7806,869	977	7,991			
	palliative reacting	2421,791	977	2,479			
	seeking social support	12043,955	977	12,327			
	comforting thoughts	3174,015	977	3,249			
	re-evaluating	2083,921	977	2,133			
	adopting new standards	1737,277	977	1,778			
	seeking religious support	3847,112	977	3,938			
Total	active tackling	8142,941	981				
	palliative reacting	2506,554	981				
	seeking social support	13458,258	981				
	comforting thoughts	3250,859	981				
	re-evaluating	2119,496	981				
	adopting new standards	1781,988	981				
	seeking religious support	3900,138	981				

Appendix D: Multivariate approach.

Table 1:

Multiple regression analyses with internalizing problem behavior as dependent variable.

Model	Unstandardized Coefficients		Standardized Coefficients		<i>t</i>	<i>p</i>	<i>r</i>
	B	Error	β				
1 Constant	-4,784	13,580			-,352	,725	
Gender	1,871	,823	,083		2,272	,023	,082
Age at placement	,027	,018	,056		1,481	,139	,054
Age	,298	,350	,032		,851	,395	,031
Educational level	-1,916	,537	-,132		-3,569	,000	,130
Romantic relationship	4,398	,981	,165		4,482	,000	,163
2 (Constant)	22,229	11,233			1,979	,048	
Gender	,890	,663	,040		1,343	,180	,039
Age at placement	-,024	,015	-,049		-1,571	,117	-,045
Age	,216	,280	,023		,772	,440	,022
Educational level	-,819	,437	-,056		-1,876	,061	-,054
Romantic relationship	3,017	,786	,113		3,839	,000	,111
Appraisal of relinquishment	-,553	,081	-,332		-6,786	,000	-,196
Appraisal of adoption	-,409	,080	-,287		-5,121	,000	-,148
Feelings of loss	,172	,066	,104		2,623	,009	,076
Paternal relationship	,137	,419	,015		,328	,743	,009
Maternal relationship	-,977	,459	-,102		-2,130	,034	-,062
3 (Constant)	-,627	9,965			-,063	,950	
Gender	1,272	,592	,057		2,150	,032	,054
Age at placement	-,015	,013	-,032		-1,172	,242	-,029
Age	,157	,242	,017		,648	,517	,016
Educational level	-,381	,381	-,026		-,999	,318	-,025
Romantic relationship	1,607	,686	,060		2,344	,019	,059
Appraisal of relinquishment	-,401	,071	-,241		-5,639	,000	-,141
Appraisal of adoption	-,184	,071	-,129		-2,607	,009	-,065
Feelings of loss	,137	,057	,083		2,419	,016	,060
Paternal relationship	,622	,363	,067		1,714	,087	,043
Maternal relationship	-,753	,397	-,078		-1,895	,059	-,047
Active Coping	,024	,051	,013		,482	,630	,012
Passive Coping	-,199	,062	-,090		-3,198	,001	-,080
Problematic Coping	1,781	,114	,452		15,556	,000	,389

Table 2:

Multiple Regression with externalizing problem behavior as a dependent variable.

Model	Unstandardized Coefficients		Standardized Coefficients		<i>t</i>	<i>p</i>	<i>r</i>
	B	Error	β				
1 (Constant)	7,198	8,582			,839	,402	
Gender	-1,528	,520	-,109		-2,937	,003	-,107
Age at placement	,001	,012	,003		,068	,946	,002
Age	,110	,221	,019		,498	,619	,018
Educational level	-1,227	,339	-,135		-3,618	,000	-,132
Romantic relationship	1,291	,620	,077		2,082	,038	,076
2 (Constant)	20,314	7,706			2,636	,009	
Gender	-2,034	,455	-,145		-4,474	,000	-,142
Age at placement	-,026	,010	-,084		-2,484	,013	-,079
Age	,068	,192	,012		,355	,723	,011
Educational level	-,643	,300	-,071		-2,147	,032	-,068
Romantic relationship	,581	,539	,035		1,078	,281	,034
Appraisal of relinquishment	-,288	,056	-,276		-5,165	,000	-,163
Appraisal of adoption	-,198	,055	-,222		-3,624	,000	-,115
Feelings of loss	,113	,045	,109		2,508	,012	,079
Paternal relationship	,010	,287	,002		,036	,971	,001
Maternal relationship	-,406	,315	-,067		-1,288	,198	-,041
3 (Constant)	6,244	7,352			,849	,396	
Gender	-2,615	,437	-,186		-5,990	,000	-,176
Age at placement	-,019	,010	-,062		-1,950	,052	-,057
Age	,040	,179	,007		,226	,821	,007
Educational level	-,538	,281	-,059		-1,912	,056	-,056
Romantic relationship	,116	,506	,007		,228	,819	,007
Appraisal of relinquishment	-,219	,052	-,210		-4,185	,000	-,123
Appraisal of adoption	-,133	,052	-,149		-2,550	,011	-,075
Feelings of loss	,090	,042	,087		2,159	,031	,063
Paternal relationship	,194	,268	,033		,726	,468	,021
Maternal relationship	-,221	,293	-,037		-,754	,451	-,022
Active Coping	-,042	,037	-,036		-1,115	,265	-,033
Passive Coping	,236	,046	,170		5,122	,000	,151
Problematic Coping	,713	,084	,289		8,444	,000	,248

Table 3:

Multiple Regression with self-esteem as a dependent variable.

Model	Unstandardized Coefficients		Standardized Coefficients		<i>p</i>	<i>r</i>
	B	Standard Error	β	<i>t</i>		
1 Constant	33,172	7,458		4,448	,000	
Gender	-1,103	,452	-,089	-2,439	,015	-,088
Age at placement	-,028	,010	-,106	-2,821	,005	-,102
Age	,024	,192	,005	,123	,902	,004
Educational level	1,471	,295	,183	4,991	,000	,180
Romantic relationship	-1,865	,539	-,126	-3,462	,001	-,125
2 Constant	18,451	6,382		2,891	,004	
Gender	-,590	,376	-,048	-1,567	,117	-,046
Age at placement	-,002	,009	-,006	-,178	,859	-,005
Age	,063	,159	,012	,396	,692	,012
Educational level	,890	,248	,110	3,589	,000	,106
Romantic relationship	-1,151	,446	-,078	-2,578	,010	-,076
Appraisal of relinquishment	,267	,046	,290	5,782	,000	,171
Appraisal of adoption	,243	,045	,308	5,371	,000	,159
Feelings of loss	-,077	,037	-,084	-2,075	,038	-,061
Paternal relationship	-,027	,238	-,005	-,112	,911	-,003
Maternal relationship	,572	,261	,107	2,195	,029	,065
3 (Constant)	25,199	5,950		4,235	,000	
Gender	-,940	,353	-,076	-2,659	,008	-,072
Age at placement	-,003	,008	-,012	-,397	,691	-,011
Age	,083	,145	,016	,577	,564	,016
Educational level	,585	,228	,073	2,570	,010	,069
Romantic relationship	-,546	,409	-,037	-1,333	,183	-,036
Appraisal of relinquishment	,199	,042	,216	4,699	,000	,127
Appraisal of adoption	,137	,042	,173	3,249	,001	,087
Feelings of loss	-,063	,034	-,069	-1,859	,063	-,050
Parental relationship	-,244	,217	-,047	-1,127	,260	-,030
Maternal relationship	,486	,237	,091	2,050	,041	,055
Active Coping	,090	,030	,087	2,975	,003	,080
Passive Coping	,109	,037	,089	2,933	,003	,079
Problematic Coping	-,787	,068	-,360	-11,511	,000	-,310