



Published in final edited form as:

Matern Child Health J. 2008 March ; 12(2): 162–171.

The International Adoption Project: Population-based Surveillance of Minnesota Parents Who Adopted Children Internationally

Wendy L. Hellerstedt,

Division of Epidemiology and Community Health, School of Public Health, University of Minnesota, Minneapolis, MN, USA e-mail: Hellerstedt@epi.umn.edu

Nikki J. Madsen,

College of Education and Human Development, Institute of Child Development, University of Minnesota, Minneapolis, MN, USA, e-mail: nikki@birdsandbees.org

Megan R. Gunnar,

College of Education and Human Development, Institute of Child Development, University of Minnesota, Minneapolis, MN, USA, e-mail: gunnar@tc.umn.edu

Harold D. Grotevant,

Department of Family Social Science, College of Human Ecology, University of Minnesota, Minneapolis, MN, USA e-mail: hgroteva@tc.umn.edu

Richard M. Lee, and

Department of Psychology, College of Liberal Arts, University of Minnesota, Minneapolis, MN, USA e-mail: RichLee@tc.umn.edu

Dana E. Johnson

Department of Pediatrics, Medical School, University of Minnesota, Minneapolis, MN, USA e-mail: johns008@tc.umn.edu

Abstract

Objectives—To conduct the first population-based surveillance in the United States of parents who adopted children from countries outside of the United States.

Methods—A 556-item survey was mailed to 2,977 parents who finalized an international adoption in Minnesota between January 1990 and December 1998; 1,834 (62%) parents returned a survey.

Results—Eighty-eight percent of the parents reported transracial adoptions (97% of the parents were white); 57% of the adopted children were Asian; 60% were female; and on average, the children were 18 months-old at the time of placement. Only 15% of the parents reported household annual incomes less than \$50,000 and 71% reported they had college educations. Sixty-one percent traveled to their child's country of birth prior to the adoption. Almost three-quarters involved their children in experiences related to their birth countries and 98% would recommend international adoption. Three-quarters of the parents believe that parental leave was an issue for them as they adopted.

Conclusions—This is the first population-based survey of U.S. parents who have adopted internationally. The adoptive parents were socioeconomically different than birth parents in Minnesota and their families are most likely to be transracial. Because international adoption has

Correspondence to: Wendy L. Hellerstedt.

Present Address: N. J. Madsen, Pro-Choice Resources, Minneapolis, MN, USA

become more prevalent, it is important to understand the strengths and needs of families that are created through this unique form of migration.

Keywords

Adoption; Surveillance; Families; International; Child health

According to the 1995 National Survey of Family Growth, 5% of women in the U.S. have ever sought to adopt [1]. Two percent of all the children in the U.S., or about 1.5 million children, are adopted [2]. Of those, about 20% are internationally adopted from over 100 countries (about 90% of the international adoptees in the U.S. come from 20 countries) [2]. From 1971 to 2001, more than 265,000 children were adopted internationally by Americans; the number of adoptions has tripled since 1990 and the number may continue to increase [3–5]. In 2003, there were about 21,000 international adoptions in the U.S. [3]. Despite this growing population of young immigrants to the U.S., surprisingly little is known about the familial, social, and health characteristics of internationally adopted children and their families.

The diversity of cultural backgrounds and ages of adopted children, combined with generally inadequate or poor records of pre-adoption histories, makes it difficult to know about the early life experiences of adopted children. Children adopted outside of the U.S. are often abandoned because of political, social, and/or economic upheaval in their countries of origin [6]. At the individual level, adoptions can be viewed as an alternative method of building a family for those who are unable to, or choose not to, have any (or more) biological children. It is believed that the popularity of international adoption is due in part to rising infertility associated with delayed childbearing [1,7] more confidence that birth parents of international adoptees will not try to reclaim their children, the greater availability of white infants for adoption internationally than in the U.S. [3,8], fear of adopting a special needs child domestically, U.S. domestic adoption policies that make it difficult for people to adopt children from another race (i.e., transracial adoptions), and the increasing social acceptability of non-traditional families (e.g., single-parent, same-sex parents) for whom international adoption may be more accessible than domestic adoption. At the population level, international and domestic adoptions can be seen as interventions to promote child health and well-being in situations where family and social supports are unavailable.

Compared with other countries, the number of children adopted in the U.S. is 4–16 times greater. However, the highest rates of adoption (per livebirths) are in Europe, especially in Scandinavian countries [9]. Several Scandinavian countries have national health registries or child cohort studies of adoptees that have provided evidence that international adoptees may be predisposed to several health conditions, including mental health problems in adolescence and young adulthood [10] and precocious puberty [11–13]. Observations of select children, adopted in the U.S., Great Britain, and Europe, who were institutionalized prior to adoption suggest that they may experience severe physical, behavioral, and cognitive delays [14,15]. The health of international adoptees may be influenced by experiences in both their birth and their adoptive countries. Comparisons of international adoptions by adoptive countries are difficult to find [9]. It appears that several birth regions (e.g., China, Russia/Eastern Europe, Korea) predominate in most adopting countries and the majority of international adoptees are of a different race than their adoptive parents. Thus an important cultural exposure in the adoptive country is the acceptance of transracial families, as it is possible that the magnitude of an internationally adopted child's health problems and health-care access are affected by the social and cultural exposures in the adoptive country.

The International Adoption Project (IAP) was designed to survey all Minnesota parents who adopted children born outside of the U.S. between 1990 and 1998 [16]. The survey was

informed by European adoption studies about the health needs of international adoptees, with a focus on aspects of life in the U.S. (Minnesota specifically) that could be associated with health and health-care access (e.g., insurance, exposure to educational institutions, pre- and post-adoption health care utilization). The survey was designed by a multidisciplinary team of researchers and adoptive parents in order to further understanding of the health, social, and educational needs of multicultural families created through international adoption and of their adopted children who often spent their first months in institutions. To our knowledge, this is the first surveillance study conducted in a defined geographic region of the U.S. to examine the pre-adoption and post-adoption experiences of internationally adopted children. The purpose of this article is to describe the survey protocol and the characteristics of the parent respondents (e.g., demographics, pre-adoption experiences, post-adoption parental leave experiences) and their adopted children (e.g., birth country, age at adoption, residence prior to adoption, exposures to cultural experiences related to their birth country since their adoption).

Methods

Study design and sample

A multidisciplinary team of researchers in child development, pediatrics, family social science, epidemiology, and psychology and an advisory committee of adoptive parents developed the International Adoption Project. The development of the project and of the survey was consistent with community-based research in that adoptive parents were seen as the primary constituents of the data and thus were enlisted as team members formally (through the advisory board) and informally through community meetings. The University of Minnesota's Institutional Review Board approved the study protocol.

The sampling frame was 3,268 sets of parents who adopted a total of 4,134 children internationally between 1990 and 1998 and whose adoptions were finalized through the State of Minnesota's Department of Human Services (DHS). Of those 3,268 sets of parents, there were 2,977 (91% of the sampling frame) for whom there was a known address. In January 2001, the 2,977 sets of parents were sent a survey for every child they adopted internationally between 1990 and 1998. The survey was 14 pages long and for the primary parent, defined as the parent who took care of the child's needs "most" of the time. The first mailing also included a letter of support from DHS that explained the purpose of the project and confidentiality procedures. A reminder postcard was sent 2 weeks after the first mailing and four additional reminders, one including a replacement survey, were sent over the following 9-month period. With each mailing, parents were supplied with a toll-free number to opt out of the survey or ask questions; the parents of 361 children in 291 families opted out. Of the 2,977 sets of parents who were sent surveys, 1,834 primary parents returned surveys for 2,291 internationally adopted children, resulting in a return rate of 62%.

Of the 1,834 responses from parents, 1,426 returned a survey for one child and 408 returned surveys for between two and seven internationally adopted children. Because one of the aims of this analysis was to characterize adoptive parents and their households, data for only one child per parent were analyzed to avoid double-counting parents who adopted more than one child. Where surveys were returned for two or more children, the survey for the oldest child was selected, resulting in 1,834 surveys for analysis. An examination of the child, parent, and family variables used in this report for the sample with and without the excluded children from multiple-adoption families showed no statistically significant (two-tailed $p \leq .05$) differences.

To examine potential bias associated with both the inability to locate all adoptive parents and the non-response from those who could be located, chi-square analyses were conducted with the few variables available from DHS. Compared with the parents who were located, those who could not be located were more likely to have adopted their children prior to 1995 (70 vs.

56%, $p \leq .001$), thus we were less likely to locate parents with children who were older than 10 years-old at the time of the survey. There were no differences in sex of the adopted child, family income at the time of adoption (controlling for year of adoption), parent education, or birth country of the adopted child.

Regarding non-response, surveys were more likely to be returned from parents of children adopted most recently: 66% of those who adopted between 1995 and 1998 returned surveys compared with 57% of those who adopted prior to 1995 ($p \leq .001$). Thus, IAP was more likely ($p \leq .001$) to receive surveys for children younger than 10 years-old (63%) than for those 10 years-old or older (56%). Parents in households in which at least one parent had a college degree were more likely to return surveys than those where neither parent had a college education (63 vs. 49%, $p \leq .001$). The return rate was highest from parents who adopted from China (75%), Guatemala (75%), and Russia/Eastern Europe (67%) compared with those who adopted from South America and Central America combined (61%) or Asia, excluding China (59%).

Survey measures

The survey was 14 pages long with 556 items. Questions were developed based on the research and clinical interests of the multidisciplinary study team, the interests of the study's parent advisory board, and the results of several pilot tests. Questions were also developed through investigator meetings with adoptive parents who were involved in culture camps or other activities related to international adoption. Questions were refined through several phases of survey pilot-testing with adoptive parents. Because the intent of the survey was to provide data to families, social service and public health professionals, researchers, educators, and health-care providers, the survey questions covered a broad range of areas including the child's pre-adoption history (e.g., residence type and length in residence; perceptions of pre-adoption medical problems, quality of caregiving, and caregivers), post-placement mental and physical health (e.g., child's health status at adoption, weight, length, head circumference, infectious disease status, transition problems, hearing/visual problems, emotional attachment), health at the time of the survey (e.g., height, weight, diagnosed conditions, physical development, social development, learning abilities, Child Behavior Checklist), educational experiences (e.g., school experiences and achievement, parental satisfaction with education), social experiences (e.g., involvement in extracurricular activities, comfort in social settings), and exposure to cultural experiences related to their birth countries. Regarding the parents, data were collected about family demographics, pre-adoption experiences (e.g., finances, travel to the birth country), post-adoption experiences (e.g., parental leave, support from family members for adoption), and attitudes and perceptions about racism. Almost all of the questions were closed-ended and there were few cases of item-specific missing data.

Region of birth was defined as either a country or part of a continent. Regions were defined according to percentage of children who came from them. Because Colombia and Guatemala represent two major countries for U.S. adoption [3], data for Colombia are reported separately from the rest of South America and data from Guatemala are reported separately from the rest of Central America.

Analysis

Chi-square and *t*-test analyses were used to describe differences in distributions or means [17]. Statistical significance was defined as $p \leq .05$ in two-tailed analyses.

Results

Characteristics of the internationally adopted children

Data were obtained for children who were adopted from 47 countries between 1990 and 1998. Twelve percent of the children were from China and 34% were from Korea; 60% of the children were female, with variation by birth region (Table 1). There were no differences, by sex, in mean age at adoption or age at the time of the survey. At adoption (i.e., 1990–1998), 64% of the children were younger than 12 months-old; 17% were 12–23 months-old; 11% were 24–59 months-old; and 8% were 60 months-old or older. At the time of the survey (i.e., January 2001), the mean age of the children was 8.2 (3.5 SD) years-old. Given that the sample included only parents with children whose adoptions were finalized between 1990 and 1998 and that the survey was administered in early 2001, only 1% of the children was younger than 3 years-old; 30% was 3–5.9 years-old; 27% was 6–8.9 years-old; 30% was 9–11.9 years-old; 8% was 12–14.9 years-old; 3% was 15–17.9 years-old; and 2% was 18 years-old. The number of pre-adoption living arrangements in the birth country (i.e., with birth family, in foster care, or in a hospital/baby home) did not vary by sex. Fifty-two percent of children lived in one site: 2% lived with family only, 19% lived in foster care only, and 34% lived in a hospital/baby home only. Of the children who lived in more than one site, 4% lived in all three sites, 5% lived in foster care and with family, 12% lived with family and in a hospital/baby home, and 20% lived in foster care and in a hospital/baby home. Data were missing for 3% of the sample. There were differences ($p \leq .0001$) in the distribution of pre-adoption living arrangements by region of birth. For example, some time spent with family of birth was highest for children from Central America (excluding Guatemala) (43%), Guatemala (32%), Eastern Europe (excluding Russia) (29%), and South America (excluding Colombia) (27%).

Two temporal trends were identified. First, there was an increase in the number of children from institutional settings over time, with fewer than 60% in 1990 compared with more than 80% in 1998. Second, there was a decrease in the number of transracial adoptions (i.e., adoptions by parents who are a different race from their child), from 94% in 1990 to 79% in 1998 (data not shown).

Characteristics of the adoptive parents

Eighty-six percent of the parent respondents were female, 97% identified themselves as of white race and 88% percent of their families were transracial as a consequence of the adoption. The respondent parents were, on average, 38 years-old at the time of placement, with an age range of 23–65 years-old (Table 2). At the time of the survey, the age range for all of the parents was 28–75 years-old. The average difference in age for partnered parents was 1.1 year (SD = 3.9 years), with a range of 0–21 years. Eighty-six percent of the parents were married at the time of the survey; 15% had household incomes of less than \$50,001/year; 2% of them lived in single- or two-parent households with parents who were unemployed; and 71% of the mothers and 70% of the fathers had at least a college degree, with 30% of all parents holding a post-Baccalaureate degree. Two percent of the parents were not born in the U.S.; 3% of the respondents and 2% of their partners were adopted; and 36% of all parents had extended family experience with adoption.

The proportion of unmarried parents varied by region of child's birth ($p \leq .0001$), ranging from 22% each for China and for Central America (excluding Guatemala), 10% for Southeast Asia, and fewer than 1% of those who adopted from either Colombia or Korea. On average, there were 2.0 (SD = 0.5) adults in the home, 0.5 (SD = 0.8) birth children, and 1.7 (SD = 0.9) adopted children. Eighty-three percent of the parents reported that they had sufficient health insurance to cover all of the medical costs for the adopted child; 14% reported they did not have sufficient health insurance and 3% did not respond to the question.

Pre-adoption and early post-adoption experiences

On average, the number of months between referral for adoption and placement of the child with the adoptive parents in the U.S. was 4.5 months, with a range of 0–62 months (Table 3). The mean number of months varied by region of birth, ranging from 2 to 10.7 months. The longest period between referral and placement was for children from India, with an average wait of 10.7 months ($SD = 10.3$). The shortest average periods were for children from Colombia (2.1 months, $SD = 2.6$), China (2.6 months, $SD = 2.3$) and Korea (3.5 months, $SD = 2.4$). Fifty-eight percent of the parents had their child's medical status reviewed by a physician prior to adoption. Medical review was most common for adoptions from Korea (80%), Russia (70%) and China (57%), while only 29% of the children adopted from Central America (excluding Guatemala), were medically reviewed prior to adoption.

Sixty-one percent of the parents traveled to their child's country of birth, with variation among regions of birth ($p \leq .0001$). Over 90% of the parents who adopted from Russia, China, Colombia, and South America (excluding Colombia), traveled to the birth country. Between 75 and 89% of those who adopted from Eastern Europe (excluding Russia), Guatemala and Southeast Asia traveled, while fewer than 25% of those who adopted from India or Korea traveled to the birth country. When asked about common recommendations to facilitate the child's entry to their adoptive home, parents stated the most helpful advice was to get information about the child's country of birth, keep the child's daily patterns similar to their pre-adoption patterns and reduce unnecessary stimuli during the transition.

Seventy-nine percent reported that the actual adoption costs were less, or within, 10% of the estimate they were given and only 6% said the expenses were more than 50% higher than the estimate. Thirty-eight percent of the parents borrowed money for adoption-related expenses, with the proportion who borrowed money highest among those whose actual costs exceeded the estimate by more than 10% ($p = .008$).

Ninety-two percent of the parents reported that at least one parent stayed at home for some period of time after the adoption, with variation by sex of the parent ($p \leq .0001$) (Table 4). Seventy-five percent of the parents endorsed a statement that parental leave is an issue for international adoption in general. In response to specific questions about their experience with parental leave, 20% stated that they experienced some difficulty in receiving leave or flextime and 13% stated that they believed they were treated differently from birth parents.

Post-adoption experiences and attitudes about adoption

In response to seven questions about specific cultural experiences specific to their country of origin that their children may have participated in, 28% of the parents reported that their children had participated in one or two experiences; 30% reported participation in three or four experiences; and 25% reported participation in 5–7 experiences. Overall, the parents reported that 71% of the children had some exposure to experiences involving other children from their birth countries and 67% had exposure to experiences involving cultural traditions (e.g., food, language, customs). Only 18% of the parents reported that their children had no exposure to any cultural experiences related to their country of origin. Exposure to such experiences varied by age of the child at the time of the survey, with children aged 5–10 years-old the most likely to have participated (Table 5).

Forty-five percent of the parents reported they were involved in groups for parents who have adopted internationally. When asked if they would "recommend international adoption as a way to build a family," 75% of the parents reported they would do so with no reservations, 23% would recommend with reservations, and 2% reported that they would not recommend international adoption. The willingness to recommend international adoption varied by the

amount of time the child had spent in an institution prior to adoption ($p \leq .0001$). Eighty percent of parents whose children spent no time or less than 12 months institutionalized would recommend international adoption without any reservations compared to 60% of parents whose children spent more than 12 months in an institution.

Discussion

We believe the IAP survey is the first population-based assessment of the characteristics of internationally adopted children and their parents conducted in the United States. Even though the U.S. has the highest number of international adoptions of any country in the world [4], and the number of such adoptions has tripled in the past decade, surveillance is limited to U.S. immigration data that describe internationally adoptees by sex, age at adoption, and region of birth [3].

The IAP survey respondents were overwhelmingly white, college-educated, and financially secure. In addition to being less racially diverse and of generally higher socioeconomic status than the average Minnesota parents of newborns in 2002, the adoptive mothers were more than a decade older at the time of their adopted infant's placement (i.e., 38 years-old) compared with new mothers of infants in Minnesota, of whom only 3% are older than 40 years-old [18]. Seventy percent of the IAP mothers had at least a college degree, while 36% of Minnesota's recent mothers have more than 3 years of college completed [18]. Further, 26% of Minnesota's recent mothers were not married, compared with 14% of IAP respondents [18]. While the IAP survey had a 62% response rate, a better response rate may not have resulted in a significantly different socioeconomic profile of the sample. Other studies of domestic adoption parents in the U.S. show that they are disproportionately more likely than the general population of parents to have higher educations [1,7,19,20], have middle-aged maternal age at placement [1,7], be married [7], and have middle- to upper-class incomes [19]. IAP findings suggest that people who adopt internationally are even more likely to be of higher socioeconomic status than those who adopt domestically [1,7]. The representation of higher income individuals among parents of internationally adopted children may reflect the cost of such adoptions and the lack of public resources to subsidize them. The pre-requisites for international adoption, set by both the agency and the country from which parents adopt, may also favor specific social groups.

Internationally adopted children usually do not share the cultural heritage of their adoptive families: 88% of the IAP adoptions resulted in transracial families. In societies where racial and ethnic discrimination are persistent, this possibility of "otherness" even in one's own home could translate into specific social, health and developmental concerns [21]. Most of the U.S. studies about adopted children have focused on U.S.-born children and studies of transracial adoptive families have generally been limited to families with white and African-American family members. Some European studies have reported that internationally adopted adults, adolescents, and children may be at higher risk than non-adopted individuals for psychiatric problems, substance abuse, adjustment problems and social difficulties [10,22–24], although such results are not consistently found [25–28]. Families that are formed through international adoption thus may face specific challenges associated with the apparently opposite goals of acculturation and maintenance of cultural identity that could influence later psychological, physical, and social health. Internationally adopted children may also experience teasing or racial discrimination, both from others outside of their racial/ethnic group and from those who share their racial/ethnic background but were born in the U.S. [29,30]. Data from 1997 survey of Americans' attitudes about adoption indicate that Americans may believe that internationally adopted children may be more likely than domestically adopted children to have behavioral problems and less likely to be physically healthy [31]. Our recent examination of the views of IAP parents about racism in their environments suggests that some adoptive parents may not

be aware of the potential threat that racist attitudes, or a racist environment, may have to the health and well-being of their adopted children [32].

IAP parents of children who spent more than 1 year in an institution prior to adoption were less likely than others to say they would recommend international adoption. This finding is consistent with studies that have documented the association of pre-adoption adversity and child behavior problems [14,15,28,33,34] and point to the importance of encouraging families to address and understand that adverse early experiences could contribute to health, behavior, and development problems for their adoptive children.

The IAP data can be compared with U.S. data on international adoptions, with the caveat that the IAP data may not be representative of Minnesota's adopted children because of its 62% response rate. Nonetheless, the IAP data are consistent with overall U.S. data in that roughly two-thirds of the adoptees were female and about 90% were younger than 5 years-old at placement [3]. In addition to some similarities with U.S. statistics, the IAP data suggest that international adoption in Minnesota has some important distinctions. In the U.S., about one-quarter of internationally adopted children in 2001 were from China and about one-fifth were from Russia [3,4]. In the IAP sample, representing the period of 1990–1998, 12% of the respondents adopted from China and 8% from Russia. This difference between IAP data and U.S. statistics may reflect IAP's non-response bias, the specific adoption climate in Minnesota, or the change in countries of origin that have historically occurred in international adoption. The countries which allow foreigners to adopt and the economic conditions in these countries are constantly changing. This instability not only affects the countries from which people adopt but also the costs of adoption, pre-adoption conditions, and the type of children that are available for adoption (e.g., China's one-child policy dramatically increased the number of girls adopted). There are also likely state and regional differences in the connection between adoption agencies and adopting countries. For example, 29% of the IAP survey respondents adopted children from Korea, which is more than twice the U.S. rate of adoption from Korea [3]. This difference could be related to the long and well-established program that Minnesota's largest adoption agency has with the Korean government. Similarly, Minnesota adoption agencies also have a longstanding relationship in Colombia, which may explain why the rate of adoption from Colombia is also twice that of the U.S. rate [3]. Country of adoption could be important to child health and well-being because the pre-adoption quality of care for children varies dramatically by country of birth [21].

Some data suggest that family leave is important to child development and parent functioning in families with birth children [35]. Of those who identified themselves as primary parents, 6% of the female and 24% of the male IAP parents were not able to stay home when they received their child. The mean length of the leave reported by female parents was 4 months. Compared with data from a nationally representative survey of U.S. workers in 2000, the usual length of a leave related to the birth of a child for a woman was 2 weeks and did not exceed 12 weeks [36]. While not completely comparable with IAP data, the national data suggest that IAP parents were more likely than U.S. birth parents to take family leaves, which is consistent with the national survey findings that parents with higher socioeconomic positions were most likely to take a leave from employment [36].

A limitation of the IAP survey is that non-response and failure to locate were higher among parents whose children were 10 years-old or older and who had adopted their children earlier in the survey time frame. The logistical explanation for the failure to locate is that DHS records for "older" adoptions are not kept current and DHS has little need for locator data for finalized adoptions. We had few data with which to characterize the non-respondents and those who could not be located. Given that the survey may best represent younger adoptees and those adopted in 1995–1998, we stratified some analyses by age of child at the survey. This is a

solution, although imperfect, to address the possible biases introduced by non-response and failure to locate parents. We also noted two important differences between adoptions prior to 1995 and after 1995: there was a decrease over time in the percentage of transracial adoptions and an increase in adoptions of children who had been institutionalized in their birth countries. These temporal differences also suggest that it would be optimal to stratify future analyses about health outcomes by period of adoption.

This cross-sectional survey queried parents about events that occurred up to 11 years earlier. Many of these events may be recalled with accuracy (e.g., whether the parent traveled to the birth country or took parental leave), but recall bias should always be considered in a retrospective survey. Another limitation is that the survey contains few questions about the psychological and social benefits and burdens of international adoption, parental adjustment or family processes that were affected by adoption, or why parents pursued international adoption. The IAP data are also limited in that they only reflect families who successfully adopted internationally. There are no data, to our knowledge, about families who do not complete the adoption process.

In every country of the world, there is a lack of demographic or health surveillance specifically focused on internationally adopted children, despite the fact approximately 40,000 children, from more than 100 countries, will migrate every year through formal adoption [9]. In 2001, Selman noted that it was difficult to find consistently reliable and universally comparable data, even from developed countries with the highest rates of adoption [9]. With the IAP survey, we demonstrated the feasibility of conducting in-depth population-based surveillance of an important and understudied group of parents whose children and families may have special health and social needs. While a national registry of internationally adopted children should be supported, regional surveillance such as that of IAP may be optimal because the concentration and source of internationally adopted children may vary geographically in the U.S. and because child health and education resources are often funded and organized locally. Further, states vary in legislation about international adoption records, making national research on the topic problematic. The IAP sample also has the potential to provide a sample frame from which cohort studies about specific health topics may be conducted, because a lifespan approach is important to assess the health of adoptees and their families [23]. Since 1996, the percentage of all adoptions in the U.S. that were international rose above 25% [4]. It is therefore important to understand the composition, the concerns, and the strengths of these often transracial families that are created through a very unique form of migration.

Acknowledgements

This research was supported by a National Institute of Mental Health grant (MH59848, Gunnar PI). The authors thank the parents and children who helped with this research. Dr. Lee's effort was supported by an NIMH K01 award (NIMH K-01 MH070740). We would also like to thank the Minnesota International Adoption Project Team, which included M. Bale, R. DeNardo, K. Dole, and S. Iverson; members of the International Adoption Project parent advisory board, and personnel at the adoption unit at the Minnesota Department of Human Services for their contributions to this work.

References

1. Hollingsworth LD. Who seeks to adopt a child? Findings from the National Survey of Family Growth (1995). *Adoption Quarterly* 2000;3(3):1–23.
2. Kent, MM.; Mather, M. What drives U.S. population growth?. *Population Bulletin*. 2002. [cited 2006 March 8]. Available from: URL: <http://www.prb.org>
3. U.S. Department of Homeland Security. Table 10. Immigrant-orphan adopted by U.S. citizens by gender, age, and region and country of birth: Fiscal year 2003. [cited 2006 March 4] Available from: URL: <http://uscis.gov/graphics/shared/aboutus/statistics/imm03yrbk/IMM2003.list.htm>
4. The Evan B. Donaldson Adoption Institute. International adoption facts. [cited 2006 February 14] Available from: URL: <http://www.adoptioninstitute.org/FactOverview/international.html>

5. Mosher W, Bachrach C. Understanding U.S. fertility: Continuity and change in the National Survey of Family Growth, 1988–1995. *Family Planning Perspectives* 1996;28(1):4–12. [PubMed: 8822409]
6. Tizard B. Intercountry adoption: A review of the evidence. *Journal of Child Psychology and Psychiatry* 1991;32:743–756. [PubMed: 1918225]
7. Bachrach CA, London KA, Maza PL. On the path to adoption: Adoption seeking in the United States, 1988. *Journal of Marriage and the Family* 1991;53:705–718.
8. Brooks D, James S, Barth RP. Preferred characteristics of children in need of adoption: Is there a demand for available foster children? *The Social Service Review* 2002;76(4):575–605.
9. Selman P. Intercountry adoption in the new millennium: The ‘quiet migration’ revisited. *Population Research & Policy Review* 2002;21:205–225.
10. Hjern A, Lindblad F, Vinnerljung B. Suicide, psychiatric illness and social maladjustment in intercountry adoptees in Sweden: A cohort study. *Lancet* 2002;360:443–448. [PubMed: 12241716]
11. Proos LA, Hofvander Y, Tuvemo T. Menarcheal age and growth pattern of Indian girls adopted in Sweden. I. Menarcheal age. *Acta Paediatrica Scandinavica* 1991;80:852–858. [PubMed: 1957606]
12. Mason P, Narad C. Growth and pubertal development in internationally adopted children. *Current Opinion in Endocrinology & Diabetes* 2002;9:26–31.
13. Teilmann G, Pedersen CB, Skakkebaek NE, Jensen TK. Increased risk of precocious puberty in internationally adopted children in Denmark. *Pediatrics* 2006;118:e391–e399. [PubMed: 16882780]
14. Johnson DE, Miller LC, Iverson S. The health of children adopted from Romania. *Journal of American Medical Association* 1992;268:3446–3451.
15. Rutter M, O’Connor TG. Are there biological programming effects for psychological development? Findings from a study of Romanian adoptees. English and Romania (ERA) Study Team. *Developmental Psychology* 2004;40:81–94. [PubMed: 14700466]
16. The International Adoption Project. [cited 2007 February 4]. Available from: URL: <http://education.umn.edu/icd/IAP>
17. SAS language and procedures: Usage, Version 8. Cary, NC: SAS Institute Inc; 1999.
18. Minnesota Department of Health, Center for Health Statistics. 2002 Minnesota Health Statistics Annual Summary. [cited 2006 March 24]. Available from: URL: <http://www.health.state.mn.us/divs/chs/02annsum/index.htm>
19. Federal Interagency Forum on Child and Family Statistics. America’s Children, 2004. [cited 2006 February 14]. Available from: URL: <http://www.childstats.gov/ac2004/eco.asp>
20. Daly KJ, Sobol MP. Public and private adoption: A comparison of service and accessibility. *Family Relations* 1994;43:86–93.
21. Silverman, AR.; Feigelman, W. Adjustment in international adoptees: An overview. In: Brodzinsky, DM.; Schechter, MD., editors. *The psychology of adoption*. New York: Oxford University Press; 1990. p. 187-200.
22. Verhulst FC. Internationally adopted children: The Dutch longitudinal adoption study. *Adoption Quarterly* 2000;4(1):27–44.
23. Lindblad F, Hjern A, Vinnerljung B. Intercountry adopted children as young adults—a Swedish cohort study. *The American Journal of Orthopsychiatry* 2003;73:190–202. [PubMed: 12769240]
24. Versluis-den Bieman HJM, Verhulst FC. Self-reported and parent reported problems in adolescent international adoptees. *Journal of Child Psychology and Psychiatry* 1995;36:1411–1428. [PubMed: 8988275]
25. Stams GJJM, Juffer F, Rispens J, Hoksbergen RAC. The development and adjustment of 7-year-old children adopted in infancy. *Journal of Child Psychology and Psychiatry* 2000;41(8):1025–1037. [PubMed: 11099119]
26. Kim WJ. International adoption: A case review of Korean children. *Child Psychiatry and Human Development* 1995;25:141–154. [PubMed: 7736800]
27. Andresen ILK. Behavioral and school adjustment of 12–13 year-old internationally adopted children in Norway: A research note. *Journal of Child Psychology and Psychiatry* 1992;33:427–439. [PubMed: 1564084]

28. Verhulst FC, Althaus M, Versluis-den Bieman HJM. Damaging backgrounds: Later adjustment of international adoptees. *Journal of the American Academy of Child and Adolescent Psychiatry* 1992;31(3):518–524. [PubMed: 1592786]
29. Meier DI. Cultural identity and place in adult Korean-American intercountry adoptions. *Adoption Quarterly* 1999;3:15–48.
30. Lee RM. The transracial racial adoption paradox: History, research, and counseling implications of cultural socialization. *The Counseling Psychologist* 2003;31:711–744. [PubMed: 18458794]
31. The Evan B. Donaldson Adoption Institute. National Adoption Attitudes Survey: Research report. [cited 2006 March 24]. Available from: URL: <http://www.adoptioninstitute.org/survey/baexec.html#one>
32. Lee RM, Grotevant HD, Hellerstedt WL, Gunnar MR. Cultural socialization in families with internationally adopted children. *Journal of Family Psychology* 2006;20:571–580. [PubMed: 17176191]
33. Groza V, Ryan SC. Pre-adoption stress and its association with child behavior in domestic special needs and international adoptions. *Psychoneuroendocrinology* 2001;27:181–197. [PubMed: 11750778]
34. Hoksbergen RAC, ter Laak J, van Dijkum C, Rijk S, Rijk K, Stoutjesdijk F. Posttraumatic stress disorder in adopted children from Romania. *The American Journal of Orthopsychiatry* 2002;73(3): 255–265. [PubMed: 12921206]
35. Brazelton, TB. Issues for working parents. In: Zigler, EF.; Frank, M., editors. *The parental leave crisis: Toward a national policy*. New Haven and London: Yale University Press; 1988. p. 36-51.
36. Waldfogel, J. Family and medical leave: Evidence from the 2000 surveys; *Monthly Labor Review*. 2001. p. 17-23. [cited 2007 February 4]. Available from: URL: <http://www.bls.gov/opub/mlr/2001/09/art2full.pdf>

Table 1

Characteristics of 1,834 internationally adopted children in Minnesota, 1990–1998 by region of birth. International Adoption Project

Region of birth	<i>n</i>	Mean age at survey, years (SD)	Mean age at adoption, months (SD)	Female, %	Lived in hospital/baby home, for over half of pre-adoption life, %
Central America (excluding Guatemala)	74	10.0 (3.4)	23.4 (25.6)	63.5	22.5
Russia	152	7.1 (3.5)	31.1 (28.6)	52.6	86.8
China	219	5.7 (1.9)	13.6 (16.0)	98.2	84.4
Colombia	186	8.4 (3.9)	14.5 (30.1)	48.4	82.7
Eastern Europe (excluding Russia)	123	10.3 (3.3)	30.9 (27.3)	49.6	75.2
Guatemala	99	6.6 (24.7)	16.6 (24.7)	53.5	20.4
India	129	9.4 (3.6)	27.3 (30.5)	80.6	82.0
Korea	619	8.4 (3.2)	9.3 (14.8)	52.2	8.3
Southeast Asia	77	9.9 (5.2)	39.6 (47.7)	42.9	72.7
South America (excluding Colombia)	149	9.8 (2.8)	17.0 (29.9)	55.7	23.4
Other ^a	7	12.5 (5.1)	59.4 (55.5)	28.6	28.6
Total	1,834	8.3 (3.6)	17.8 (20)	59.5	46.3

^a“Other” areas include Africa, Greece, Japan, Marshall Islands, and not specified

Table 2

Characteristics of respondent parents who adopted 1,834 children internationally in Minnesota, 1990–1998.
International Adoption Project

Characteristics of respondent parent	
Mean (SD) respondent age, years	
Age at survey	44.5 (5.6)
Age at placement	37.7 (5.1)
Born in the U.S., %	98.2
Marital status, %	
Married	86.2
Living with a partner	2.2
Separated, divorced or widowed	4.2
Never married	7.4
Prior adoption experience, %	
Any prior adoption	
Respondent was adopted	2.7
Extended family adopted	35.7
Of those with a partner/spouse (<i>n</i> = 1,621)	
Partner/spouse was adopted	2.0
Annual household income, %	
< \$50,000	15.4
\$51,000–\$100,000	44.5
\$101,000–\$150,000	19.7
\$151,000–\$200,000	7.5
≥\$201,000	8.0
Missing	4.9
Education, %	
Two-parent family: both college degrees	49.5
Two-parent family: one college degree	24.4
Two-parent family: neither college degree	14.6
Single-parent family: college degree	9.4
Single-parent family: no college degree	2.0
Missing	0.1
Employment, %	
Two-parent family: both full-time employed	30.0
Two-parent family: both part-time employed	1.2
Two-parent family: one full-time, one part-time	29.9
Two-parent family: one full-time employed	25.7
Two-parent family: both not employed	1.0
Single-parent family: full- or part-time employed	10.4
Single-parent family: not employed	0.9
Missing	0.9

Note: 86% of the respondent parents were female

Table 3

Adoption-related experiences of 1,834 respondent parents who adopted internationally in Minnesota, 1990–1998. International Adoption Project

Adoption-related experiences	
Mean (SD) months from referral to placement	4.5 (5.0)
Adoption agencies used, %	
MN Adoption agency	90.3
County	0.4
Independent	1.3
Other	3.9
Multiple agency types	4.1
Medical review of referral, %	
International adoption medical specialist	14.4
Other health professional	28.5
Both international adoption specialist & other	9.6
Not reviewed	41.7
Missing	5.8
Pre-adoption travel to country of origin, %	60.6
Of those who traveled pre-adoption ($n = 1,111$), % who:	
Took health precautions	58.8
Got sick during travel	23.9
Saw child's living conditions	59.9
Did none of the above	10.4

Table 4

Adoption-related resources for 1,834 parents who adopted internationally in Minnesota, 1990–1998, by sex of respondent. International Adoption Project

	Female (n = 1,599)	Male (n = 214)
Stayed at home for some period after placement, %		
Stay-at-home parent	30.5	16.8
Yes, able to stay home	61.9	57.0
No, not able to stay home	5.8	23.8
Believe that parental leave is an issue in international adoption, %		
Yes	75.4	71.5
No	6.6	9.8
Unsure	15.3	16.4
<i>Among those who did not stay at home (n = 1111 mother and 178 father respondents):</i>		
Parental leave benefits available, %		
Yes	66.5	58.4
No	27.9	32.0
Not applicable, self-employed	4.4	8.4
Perceived difficulty receiving leave or flex-time similar to that of birth parents, %		
Difficult, treated different than birth parents	14.3	11.2
Difficult, treated the same as birth parents	5.0	6.7
Not difficult, treated different than birth parents	15.9	7.3
Not difficult	40.7	40.5
No response	24.0	34.3
<i>Among those who stayed at home (n = 973 mother and n = 118 father respondents):</i>		
Length of time stayed home after child arrived		
Mean (SD) number of months, (SD)	4.1 (7.2)	3.3 (4.5)
Minimum number of months	1	1
Maximum number of months	101	36

Note: Data missing about sex for 21 respondents (1.6%) and data missing for specific questions for 36–64 additional respondents, varying with question, thus percentages do not equal 100%

Table 5

Exposure to cultural experiences related to their country of origin since adoption placement for 1,834 internationally adopted children in Minnesota, 1990–1998, by child age at the time of the survey. International Adoption Project

Cultural experiences related to country of origin	Child age at time of survey			Total (<i>n</i> = 1,834)
	< 5 years (<i>n</i> = 391)	5–10 years (<i>n</i> = 860)	> 10 years (<i>n</i> = 583)	
Eaten/prepared meal from country of origin, %	47.3	57.3	52.3	53.6
Attended a cultural camp, %	6.1	28.0	27.3	23.1
Associated with group from country of origin, %	63.4	65.1	47.9	59.3
Played or spent time with children from country of origin, %	69.1	68.8	53.7	64.1
Learned the language of country of origin, %	27.1	40.0	32.6	34.9
Celebrated a traditional holiday/celebration specific ethnicity, %	37.3	36.9	25.7	33.4
Other country of origin cultural activity, not specified, %	14.1	20.0	13.6	16.7
Not exposed to any of the above cultural activities/experiences, %	15.9	12.7	21.8	16.3