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Adoptive Parenting: Correlates of Socio-Demographic Factors and Child Attachment among Domestically and Internationally Adopted Children in Nairobi, Kenya

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Abstract

This study examined correlates of socio-demographic factors and child attachment among domestically and internationally adopted children in Nairobi, Kenya. The objective of the study was to establish association of socio-demographic factors and child attachment behavior among adopted children. A clinical sample of 35 adopted children between the ages of two and five years together with their domestic and international adoptive parents were assessed. A non-randomized consecutive order convenience sample of adoptees was collected. The sample (n=15) comprised international adoptees while sample (n= 20) comprised domestic adoptees. Child attachment behavior was measured using the Attachment Q-Sort. Soco-demographic questionnaire was administered to measure the independent variable. Data was collected using observations, questionnaires and interviews. Data was analyzed utilizing SPSS version 21. A t-test was performed to compare mean age differences among adopted children. Chi Square (χ^2) was used to determine the relationship between age groups and attachment. The examination of the correlation between the independent and dependent variables was done by Pearson's correlation coefficient (p). One of the major findings was that most of the socio-demographic factors were not statistically significantly correlated with adopted children's attachment. Also, secure attachment increased over time for both domestically and internationally adopted children.
Key words: adoption, adoptees, adoptive parenting, child attachment, domestic adoptees, international adoptees and attachment Q-Sort.

Introduction and Background

Formation of secure attachment in relationships begins at infancy and is a significant developmental milestone in a child's life (Bowlby, 1982). From a human development perspective, Sroufe, Egeland, Carlson, and Collins (2005) described attachment as a main issue given its clear centrality to infant functioning and subsequent development. In normative situations, almost one-third of infants develop an insecure attachment relationship whereby in stressful situations they avoid seeking comfort from their parents or caregivers (insecure-avoidant) or they stay extremely focused on their parents or caregivers (insecure-ambivalent) (MacDonald & Borsook, 2010). Either way, this results in a less competent exploration of the environment (Sroufe et al., 2005). Insecure attachment also predicts the children's less optimal

development during childhood, and adolescence through to adulthood (Stams, Juffer, & Van IJzendoorn, 2002; Stoufe et al., 2005).

Formation of attachment problems have been linked to possible explanations for development continuing on a maladaptive pathway (Cantos, 1996; Lawrence, Carlson, & Egeland, 2006; Roy, Rutter, & Pickles, 2000; Rutter et al., 2007). One source of such problems may be adoptees' experience of separation from their existing attachment figures.

Factors such as age of a child at adoption, parental age, parental level of education, as well as the child's pre-adoptive history may impact the formation of secure attachment relationship (Houlin, 2010). Disrupted placements, the number of primary caregivers and repeated traumatic events may contribute to the overall mental health of the adoptee, and a greater number of occurrences could increase the risk of maladjustment (Hughes, 2004; Kottman, 1997; Verhulst, Althaus, & Beiman, 1992). This paper therefore examined the correlates of socio-demographic factors such as age of a child at adoption, adoptive parental level of education and child's pre-adoptive history may impact formation of attachment among domestically and internationally adopted children in Kenya**.**

Understanding Adoption and Child Attachment

Adoption is the process by which one undertakes full and legal parenting rights of a child, and in so doing, relieves the previous parent, whether biological or adoptive, of his parental responsibilities (Diamond & Senecky, 2011).

Child adoption is as old as human history (Benet, 1976). The Bible notes, "He was bringing up Hadassah, that is Esther, the daughter of his uncle, for she had neither father nor mother. The young woman had a beautiful figure and was lovely to look at, and when her father and her mother died, Mordecai took her as his own daughter" (Esther, 2:7). "I, the Lord, adopted you unto myself," is found in Isaiah 41:10. The Bible also refers to Moses' adoption by Pharaoh's daughter (Exodus, 2:10). Such Biblical references typically emphasize the adoptees' capacity to overcome personal odds and to conquer as leaders of their people.

During the Middle Ages, other forms of child care thrived. United Nations (2009) evidence suggested that during the 19th century, the practice of legal adoption declined while orphanages flourished. The central development regarding care of orphans prior to World War II was the change in the perception of institutionalization. This was embodied in a position paper issued by the First White House Conference on the Care of Dependent Children in 1909. Within a 40-year period, beginning in 1923, the USA saw the percentage of orphaned children taken in by adoptive families jump from 2% to 33% (Barr, 1994). With the arrival of tens of thousands of newly orphaned children resulting from World War II, adoption became an acceptable and widespread social norm. Surveys at the time reflected an overall "positive" attitude toward international adoption on the part of close to 90% of the American public, with close to 64%

indicating a personal connection with either friends or family members who had adopted a child (National Adoption Attitudes Survey, 2002).

The growing demand for adoptable children abroad was fueled by additional social and geopolitical developments (Houlin, 2010). First was the increasing age at which mothers (as well as fathers, to a lesser extent) chose to bear children, with the attendant decrease in fertility rates in Western countries (Houlin, 2010); and secondly, the fall of communism in Russia and Eastern Europe in the late 1980s, which released a torrent of babies and young children for adoption in the West (Diamond & Senecky, 2011).

In Africa, the value placed on children is priceless (Orabueze, 2015). Given the importance of children in this social reproduction system, there has always been a variety of child care patterns in African communities. According to Oabueze (2015), families often shared children with relatives who were unable to bear them, as a gesture of solidarity and responsibility towards the clan, thus evading the inherent shame of infertility.

Regardless of which part of the world child adoption occurs, it may have an implication on child attachment behavior. Attachment is an emotional, social and physical bond between a child and a primary caregiver (Grotevant, 2002). Indeed, attachment is the foundation on which many aspects of later developmental, emotional, and behavioral growth and functioning are built (Boris, Fueyo, & Zeanah, 1999; Gunnar, Bruce, & Grotevant, 2002).

Adoption provides a chance for positive development in many areas of development including psychological development for previously institutionalized children. In the past, adoption was considered a better solution for both adoptive parents who may have a desire to adopt for one reason or the other such as infertility, and for the child who has needs for a significant attachment figure to develop well in all aspects of development (Barconsl, 2012). When compared to non-adopted peers, most adoptees show difficulties in formation of secure attachment during childhood (Chisholm, 1998; Marcovitch, Goldberge, & Gold, 1997; van den Dries, Juffer, val IJzendoorn, & Bakermans-Kranerburg, 2009). Some show developmental delays (Beckett et al., 2006) while others show psychological problems in adolescence and adulthood; increased risks of psychiatric hospitalization, severe social problems, low cognitive functioning and poor academic performance (Dalen, Lindblad, Odenstad, Ramussen, & Binnerljung, 2008; Hjern, Lindblad, & Ringback, 2010; Tienman, van der Ender, & Velhulst, 2005; Weitoft & Hjern, 2010). Some children indicate more externalizing behaviors such as bullying, defiant problems and internalizing problems such as depression (Bimmel, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2003; Dulmen & the International Adoption Project Team; 2007; Juffer & Val IJzendoorn, 2005; Rispens, & Hoksbergen, 2000; Zeanah et al., 2009).

There is likely scarcity of literature in child attachment area in Africa. However studies have been carried out largely in the West**.** For example, in a study done among Chinese adoptees in the USA, approximately 85% of adoptees had some level of institutionalization experience in their birth countries (Gunnar, van Dulmen, & the International Adoption Project Facts, 2009). Along with pre-adoption parental quality and biological factors such as genetic predisposition,

the institutionalization experiences were found to be a significant factor in predicting post-adoption behavioral problems (Hawk & McCall, 2010; van den Dries, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2010). However, quality of institutional care received by adoptees varies from country to country (Liu & Hazler, 2015). Further, the negative influence of institutionalization on child attachment and relationships has been widely noted in some studies (Gunnar, Bruce, & Grotevant, 2000; Howe, 2005; Vorria et al., 2003).

According to studies on child attachment and relationships done by Gunnar, Bruce, and Grotevant (200) and Voriria et al. (2003), institutions were found to be a poor placement for children because their needs were not met in a sensitive and timely manner (Howe, 2005). It is important to understand that institutionalization does not condemn a child to a lifetime of psychopathology as originally predicted (Hawk & McCall, 2010; van den Dries et al., 2010). However, the negative impact of institutionalization on children's developmental aspects such as physical, intellectual, social, emotional and behavioral is greater when coupled with risk factors in the post-institutional environment (Gunnar & Grotevant, 2000).

This current study sought to investigate the correlates of socio-demographic factors such as age, adoptive parent's level of education as well as pre-adoptive history of the child and the child's attachment behavior in younger adopted children aged between two and five years in Nairobi, Kenya.

Methodology

The aim of this study was to investigate the correlates of socio-demographic factors and child attachment in a clinical sample of 35 domestically and internationally adopted children living with their adoptive parents. A descriptive correlational design was employed. Descriptive statistics explained socio-demographic factors of both domestically and internationally adopted children as well as their adoptive parents. Child, parent and family characteristics were described using means, and standard deviations for continuous data and frequency and proportions for categorical data. The research objective and question were addressed using univariate statistical procedures.

The participants were recruited from adoption agencies and adoptive snowballing technique. Children in the sample were those who had been in their adoptive home for at least six months. The researchers visited the participants in their adoptive homes to observe the dyad for 2 hours during their daily routine to acquire data for a measure of the children's attachment, and mothers completed a socio-demographic questionnaire.

Human subjects' approval for this current study was obtained from the Nairobi Hospital Research and Ethics Board as well as from National Commission for Science, Technology and Innovation (NACOSTI), Kenya. Informed consent of the mothers was obtained by phone or email prior to the home visit, with the signed consent returned to the researchers.

The attachment Behavior Q-Sort (AQS; Waters and Deane, 1985) has 90 items that describe children's behavior observed during periods of interaction with significant caregivers. The 90 items provide a wide spectrum of a child's use of the parent as a secure base of the appropriate balance between proximity seeking and exploration behavior. The scores are computerized then compared to the child's scores against a criterion sort. The AQS can be used for children aged at least 12 months who demonstrate object permanence and mobility. The upper range for children is five years. The AQS has been validated with children as old as six years in the Netherlands (Pool et al., 2000). It has also been used several times with pre-school age children in Canada, Israel, and the United States (Clark & Symons, 2000; Oppenheim, 1997; Posada et al., 1995; Symons et al., 1998). Therefore, it was appropriate for adoptive parents of children aged 12 months to five years.

The AQS demonstrated adequate to strong reliability and validity in previous studies (Waters & Deane, 1985). The alpha coefficients ranged from .77 to .91. In a meta-analysis conducted by van IJzendoorn et al. (2005), the reliability and validity of the AQS was tested in a series of meta-analyses on 139 studies with 13,835 children. . The observer AQS security score showed convergent validity with Strange Situation procedure (SSP) security (r5.31) and excellent predictive validity with sensitivity measures (r5.39). Its association with temperament was weaker (r5.16), which supported the discriminate validity of the observer AQS. Studies on the stability of the observer AQS are still relatively scarce but they have yielded promising results (mean r5.28; k54, n5162). It is concluded that the observer AQS, but not the self-reported AQS, is a valid measure of attachment (van IJzendoorn et al., 2004).

In measuring child-mother interaction and child secure-base behavior in Zambia, Mooya (2009) validated the AQS among children aged 2-5 years. Fathers of children being assessed were asked to make sorts for the mothers. Since most urban middleclass Zambian mothers read and understand English well, the English version of Q-Sort was used. Therefore, it was appropriate for adoptive parents of children aged two to five years in the Kenyan context and the adoptive parents were in middle and upper classes, thus understand English. According to Mooya (2009), the AQS demonstrated strong reliability.

A sociio-demographic questionnaire was created for the current study to measure both adopted child and adoptive parent characteristics. In analyzing the data, descriptive statistics and frequencies were calculated to describe the socio-demographic characteristics of the sample, and to check for normality in AQS scores. Second, Pearson's correlations were computed to determine the correlation between each child's AQS sort and the socio- demographic factors. All analyses used a priori alpha level of .05.

Results

To check for potential confounds, correlations and *t*-tests were computed to determine if a child's attachment behavior differed by socio-demographic variables: child' age at adoption,

child's gender, mother's age, mother's ethnicity, level of education and marital status, as well as the birth country, and presence of other siblings. A majority of the tests were significant as analyzed in the results below.

Child characteristics

Table 1: Child Characteristics for Domestically and Internationally Adopted Children

	Domestic(n=20)		International(n=15)	
	N	Percent	N	Percent
Age of child				
> 2- 3 years	9	45%	7	46.6%
> 3 - 4 years	3	15%	3	20.0%
> 4 - 5 years	5	25%	4	26.7%
> 5 years	3	15%	1	6. 7 %
	20	100%	15	100%
Sex				
Male	15	75%	5	33.3%
Female	5	25%	10	66.7%
	20	100%	5	100%
Child's Education Status				
Going to Pre school	12	60%	12	80%
Not going to School	8	40%	0	0%
Others	0	0	3	20%
Child residence before adoption				
Orphanage/agency	15	100%	15	75%
Family/Foster care setting			5	25%
	20	100%		
History of abuse or neglect prior to adoption				
Neglect or Abuse	9	60.0%	12	60%
No history of abuse/neglect	2	13.3%	4	20%
Don't know	4	26.7%	4	20.0%
	15	100%	10	100%

Most of the adoptees were children between the ages of 2-3 years for both domestic and international adoptees (45% and 46.7%, respectively). These results suggest that parents adopted younger children below the age of three years compared to those above that age.

Additionally, regarding gender, as shown in Table 1, three quarters (75.0%) of the domestic adoptees were males while a quarter (25.0%) were females. Regarding international adoptees, 33.3% were male and over half of the sample (66.7%) were females. The results suggest that the majority of domestic adoptees preferred adopting male children compared to international adoptive parents whose preference was female children.

Finally, as shown in Table 1, the majority (75%) of domestically adopted children lived in an orphanage prior to adoption, with only a quarter (25%) living with families or under foster care. All the internationally adopted children (100%) lived in orphanages. Both groups of children who had suffered neglect or abuse prior to the adoption process were 60%. These results indicate that the majority of children living in orphanages, families or under foster care were exposed to forms of psychological or physical abuse. These results also indicate that most of the children adopted therefore, had a prior history of neglect or abuse.

Figure 1 shows a graphical representation of the age groups of domestically and internationally adopted children.

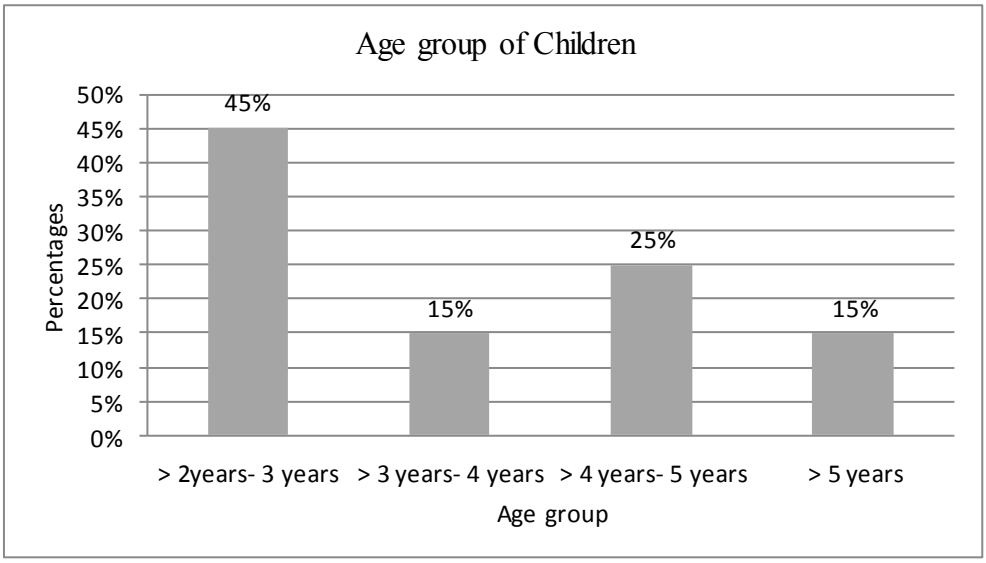

Figure .1: Age Group of Domestically and Internationally Adopted Children

In Figure 1, the majority of adopted children were between ages two and three. Table 2 presents independent *t* test for child and parents mean ages.

Table 2: Independent Sample t test for Child and Parents Mean Ages

Levene's Test for Equality of Variances				t-test for Equality of Means						
									95% C I of the Difference	
Age of child in Months	X	F	Sig.	T	df	Sig. (2-tailed)	x Diff	Std. Error Difference	Lower	Upper
Domestic Adoptees	43.6	.23	0.63	0.79	33	0.434	3.73	4.712	-5.854	13.32
International Adoptees	39.87									
Age of the parent in years										
Domestic Parent	38.00	3.2	0.07	-0.83	33	0.409	-1.933	2.457	-7.021	3.154
International Parent	40.00									

As Table 2 indicates, there was no statistical difference found in the mean ages for domestic and international adoptees ($t = 0.792$, $p > 0.05$). The average age for domestic adoptees was found to be 3.733 months more than that of international adoptees. These results indicate that both domestic and international adoptive parents adopted children who were on average of the same ages. The following indicate adoptive parents' socio- demographic factors.

Parents' Socio-Demographics

Table 3 presents a summary of parents' socio-demographics variables.

Table 3: Parent Demographics for Domestically and Internationally Adopted children

	Domestic		International	
Variables	N	Percent	N	Percent
Relationship of with child				
Mother	17	85%	8	53.3%
Father	3	15%	7	46.7%
	20	100%	15	100.0%
No. of Children btw Ages 2-4 in HHs				
0	11	55%	1	6.7%
1	5	25%	14	93.3%
2	2	10%		
3	2	10%		
	20	100%	15	100.0%
Marital Status				
Single	2	10%	1	6.7%
Married/Partnered	18	90%	14	93.3.%
	20	100%	15	100.0%
Education level of parent				
Partial high school	1	5%		
High school	2	10 %	1	6.6%
Partial college	5	25 %	1	6.7%
Bachelor's degree	6	30 %	4	26.7%
Graduate degree	6	30 %	9	60.0%
Age of parent				
25-29	3	15%		
30-34	4	20%	1	6.7%
35-39	10	50%	8	53.3%
40-44	2	10%	3	20.0%
50-54	1	5%	2	13.3%
55-59			1	6.7%
Total	20	100%	15	100.0%
Mean Age	38		40	

As indicated in Table 3, the majority (90%, *n*=18) of the domestic families and the majority (93.3%, *n*=14) of international families were married (couples). The sample was composed of two (10%) single domestic mothers and one (6.7%) international adoptive mother. Most (55%, *n* = 23) of the domestic parents were first-time parents while 93.3% of international

parents had one child who was equally adopted but did not meet the criteria for the sample as a participant.

The mean age for domestic parents was 38 years while that of international parents was 40 years as shown in Table 3. This indicates that the majority of adoptive parents were those in their middle adulthood age bracket.

Also, the sample of international adoptive parents was predominately white (60%, $n = 9$), with three Asian couples, one mother of African American descent and two mothers who were African. These results indicate that the majority of international parents who adopted Kenyan children were mainly of white origin

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Independent t test for mean ages of adoptive parents

An independent *t* test for mean ages of adoptive parents was performed (Table 4).

Table 4: Independent Sample t test for Parents Mean Ages

Levene's Test for Equality of Variances				t-test for Equality of Means						
									95% C I of the Difference	
Age of parents in years	X	F	Sig.	T	df	Sig. (2-tailed)	x Diff	Std. Error Difference	Lower	Upper
Domestic Adoptees	38.00	3.27	0.079	-0.83	33	0.409	-1.93	2.457	-7.021	3.154
International Adoptees	40.00									

According to Table 4, an independent-sample *t*-test was conducted to compare mean age difference in domestic adoptive parents (m=38, n=20) and international adoptees (m=40, n=15). The average age for the parents for domestic adoptive parents was found to be 1.933 years less than that of parents for international adoptees. However, a *t*-test (t = -0.836, p >0.05) did not produce any statistical difference in the mean age between domestic and international adoptive parents. These results also confirm the results displayed in Table 4 that the majority of adoptive parents of Kenyan children were those whose age ranges in the middle adulthood age bracket**.**

Correlations between AQS and Demographic Factors

A series of analyses were conducted using Pearson's Correlation Coefficient to test whether there was a linear relationship that existed between the dependent variable (child attachment behavior) and social demographic variables. The results are displayed in Table 5.

Table 5: Correlations between AQS and Demographic Factors at Baseline, Time 1 and Time 2

Variable	Correlation with Attachment Q sort (Correlation and *p* values)											
	Domestic (n=20)						International (n=15)					
	Baseline		Time1		Time 2		Baseline		Time 1		Time 2	
	R	p	R	p	R	p	R	p	r	P	r	P
Gender	0.108	0.650	0.059	0.80	-0.06	0.79	0.011	0.969	0.03	0.92	0.65*	0.011
Age at Adoption	-0.24	0.39	-0.10	0.67	-0.28	0.26	-0.07	0.78	0.17	0.55	0.13	0.65
Spouse's Education	-0.221*	0.02	-0.22*	0.04	-0.32*	0.03	-0.36*	0.03	0.40	0.14	0.44	* 0.1
Parent 's Education Level	-0.311*	0.02	-0.26*	0.03	-0.50	0.04	0.11	0.70	0.50	0.07	-0.49*	0.037
Age group of Parent	-0.312	0.18	-0.35	0.13	-0.32	0.17	0.31	0.27	0.02	0.95	0.12	0.68
Age of spouse	-0.052	0.84	-0.27	0.28	-0.50	0.04	0.41	0.14	0.25	0.37	0.15	0.58
History of child before adoption	0.464	0.04	0.52	0.18	0.02	0.44	0.03	0.93	-0.10	0.72	0.32	0.25

*Correlation is significant at the <0.05 level (2-tailed)

The results for correlation of socio-demographic factors indicated two variables that were significantly associated with changes in child attachment behavior from baseline to Time 1 and Time 2, namely gender and parents' education. Domestic adoptive parents' gender (r = 0.108) was found to have a positive relationship with attachment, though not statistically significant (p < 0.65).

In addition, international parents' gender was found to be statistically significant for low positive relationship with child attachment in Time 2 (r = 0.66, p < 0.05). Domestic parents' education (r=-0.221; p=0.02) at Time 1 and international parents' education (r=-0.36, P= 0.03) at Time 1 were statistically negatively correlated with child attachment. Parents' higher level of education (r = -0.495, p < 0.05) was statistically significant for an inverse correlation with changes in child attachment among international adoptive parents at Time 2. This suggests that the more highly educated a parent was, the more likely that a child would develop an insecure attachment. The interpretation for this could be in regard to the time spent with a child. Many highly educated, middle aged parents were more engaged in career development and work. These parents spent few hours with children as most of their time was spent at work places,

businesses or careers at the expense of spending quality attachment formation time with the children.

In contrast to the common belief, age at adoption and pre-adoption history were not significant predictors of child attachment status at post adoption and generally most demographic variables were not statistically significant. Notably also is that the study did not find a significant difference between boys and girls for attachment behavior from the AQS.

Relationship between Age group and Attachment

The relationship between age group and attachment using Chi Square is shown in Table 6. The Chi Square test was used to determine whether a specific age group was likely to form secure attachment earlier compared to the rest. As shown in the Table 6, among the domestic adoptees, all (100%) parents of children between two and three years in Time 1 indicated secure attachment compared to none of the parents of children above five years of age. However, this proportion dropped to 42.9% in Time 2 for children who were between two and three years; and increased to 14.3% among children aged five years and above. These results however, did not produce statistically significant different results when compared to the other age groups at p = 0.752; X^2 =3.429. This suggests that children below three years easily formed secure attachment compared to older children above three years.

Table 6 also shows that among the international adoptees, none (0%) of the parents of children below three years in baseline indicated secure attachment. However, this proportion increased to 100% in Time 2 for children below three years but remained at 0% among children above five years of age, neither were the results statistically significant when compared to the other age groups (p= 0.413, X^2 =9.271).

Overall, both results for domestic and international adoptees indicated that formation of attachment was well developed in children below the age of three years.

Table 6: Relationship between Age Group and Attachment utilizing Chi Square

Baseline										
	Domestic						International			
Age Group of Adoptee	Very unlike my child	Unlike my child	Neither like nor unlike my child	Like my child	Very like my child	P-value (X^2)	Age Group of Adoptee	Very unlike my child	Unlike my child	Neither like nc unlike m child
> 2- 3 yrs	50.0%	50.0%	33.3%	50.0%	100.0%	0.896	> 2- 3 yrs	50.0%	50.0%	50.0%
>3 - 4 yrs	25.0%	0%	11.1%	50.0%	0%	(6.370)	> 3 - 4 yrs	0%	25.0%	16.7%
> 4 - 5 yrs	25.0%	25.0%	33.3%	0%	0%		> 4 - 5 yrs	25.0%	25.0%	33.3%
> 5 years	0%	25.0%	22.2%	0%	0%		> 5 years	25.0%	0%	0%
Time 1										
> 2- 3 yrs	0%	60.0%	50.0%	36.4%	50.0%	0.709	> 2- 3 yrs	100.0%	25.0%	33.3%
> 3 - 4 yrs	0%	20.0%	0%	9.1%	50.0%	(6.303)	> 3- 4 yrs	0%	25.0%	16.7%
> 4 - 5 yrs	0%	0%	50.0%	36.4%	0%		> 4 - 5 yrs	0%	25.0%	50.0%
> 5 years	0%	20.0%	0%	18.2%	0%		> 5 years	0%	25.0%	0%
Time 2										
> 2- 3 yrs	50.0%	0%	0%	50.0%	42.9%	0.753	> 2- 3 yrs	25.0%	0%	33.3%
> 3 - 4 yrs	0%	0%	0%	25.0%	14.3%	(3.429)	> 3 - 4 yrs	50.0%	0%	0%
> 4 - 5 yrs	0%	0%	0%	25.0%	28.6%		> 4- 5 yrs	25.0%	0%	33.3%
> 5 years	50.0%	0%	0%		14.3%		> 5 years	0%	0%	33.3%

Discussion

This study sought to establish association of socio-demographic factors and child attachment behavior among adopted children. In this study, most of these factors were not statistically significant in influencing child attachment behavior. However, socio- demographic factors have been reported by some studies to be influential for insecure attachment in adopted children such as the age of the child at the time of adoption and the number of previous institutional placements a child experienced (Houlihan, 2010).

In this study, international adoptees were adopted after they attained the age of 12 months. This is a requirement for international adoption in Kenya whereas domestic adoption takes place when the child is at least six months. Though this study did not compare the adopted children to their non-adopted peers, the results did not find any statistically significant correlation between age at adoption and insecure child attachment behavior. However, the study found that secure attachment for adopted children was developed in both internationally and domestically adopted children. Also, secure attachment increased over time for both domestically and internationally adopted children. This may be because as adopted children and adoptee parents live together, they learn to adapt to each other, hence get securely attached. These results support the findings by a study by Houlihan (2010) in a non-random consecutive order convenience sample of children aged between 12 to 36 months adopted from an international adoption clinic in the United States. In her findings, secure attachment of adopted children increased overtime.

These results contradict a meta-analysis by van den Dries et al. (2009) who reported that children who were adopted before 12 months of age were as securely attached to their non-adopted peers, whereas children adopted after their first birthday were less securely attached than non-adopted children (d = 0.80, CI = 0.49–1.12). For this study, it is notable that most (75%) respondents, domestic and international adoptive parents, were satisfied with adoption.

The current study also found that younger children below the age of three years attached much faster than those above three years of age. Children between two and three years indicated secure attachment compared to children above four years. All domestic parents at Time 1 and all international parents at Time 2 who adopted children below three years indicated secure attachment compared to the parents of children above three years. From these findings, it can be concluded that secure attachment relationships appear to develop much faster in families with young adopted children in contrast to older adopted children of above three years.

Another socio-demographic factor found to be correlated with attachment was the education level attained by parents. Just as Berry (1988) found out that higher education levels in adoptive parents were predictive of child attachment, in the current study, parents' education level was found to be negatively associated with child attachment. Domestic parents' education (r=-0.221; p=0.02) at Time 1 and international parents' education (r=-0.36, P= 0.03) at Time 1 was inversely correlated with child attachment. These results suggest that higher education is a predictive of insecure child attachment. This may be explained by the time the educated parents spend with their children. Most highly educated parents spend most of their time at work places

and or pursing other careers. While Barth and Berry (1988) found higher education levels in adoptive mothers as a predictive for insecure child attachment, Partridge et al. (1996) found parents' education and adopted child behavior to be unrelated with child attachment.

This study did not find any significant difference between boys and girls in regard to secure attachment from the AQS. Previous studies in Portugal by Verı´ssimo and Salvaterra (2006) on maternal secure-base scripts and children's attachment behavior in an adopted sample revealed sex differences. Notable in this study was sex preference in that most (75%) of the domestic parents had adopted male children, compared to 13.3% of international parents. This seems to reinforce the gender stereotyping in the African culture where male children are preferred to female children.

In this current study, 63.3% of international parents had adopted female children compared to a quarter (25%) of domestic adoptive parents. This is in support of findings of a study among parents in Portugal with biological dyads whose preference for female children was only 9.7% for those who reported they would prefer a male, whereas 28% claimed to prefer female children and 68.3% did not express a preference (Verı´ssimo & Salvaterra (2006).

Variables related to the gender of a child and pre-adoption history of the children were not statistically significantly associated with the child's attachment scores from the AQS for both domestically and internationally adopted children. Some previous studies have similar findings where gender and pre-adoption history variables played a key role in post-adoption outcomes such as a child having experienced sexual abuse or physical abuse (Dozier & Rutter, 2008; Juffer & van IJzendoorn, 2005; Rutter & O'Connor, 2004; van IJzendoorn & Juffer, 2006).

Overall, these findings indicate that the quality of attachment does not exclusively depend on having a continuous relationship with one's biological mother and from birth. These findings are consistent with the attachment theory that postulates that the quality of attachment is a product of interactive exchanges characterized by responsiveness and cooperativeness on the part of the adult (Ainsworth et al., 1978).

Early intervention that serves children under the age of three may include assessment and treatment for developmental delays (e.g., motor skills, speech, and language comprehension). It may also include behavioral issues (e.g., hyperactivity). Not all children need these services, but the earlier the children are adopted and identified as candidates for these services, the earlier they begin to receive assistance to help them catch up developmentally.

One of the limitations of this study was that it as exploratory, as a result of which no causal inferences can be made for the results from the study. Secondly, the sample size was small (n = 35), which did not permit conducting more advanced statistical tests such as multivariate analysis.

Another limitation was the use of Attachment Q-sort only as a measure of child attachment behavior. Being a culturally sensitive measure, there is need to use multiple measures to capture attachment and that would strengthen the design of future studies and help to improve confidence in child attachment studies among African populations. Additionally, sampling was non-random and so no generalizations could be made about the findings on a larger scale. The

use of convenience sampling also meant that bias could not be ruled out. In a future study, the sampling method should be expanded to include multiple sources of sample recruitment. In addition to adoption agencies, recruitments could be made from support groups, as well as referrals from adoption specialty clinics.

The following recommendations emanate from the findings.

i) Mandated by The Hague Convention on adoption, pre-parenting psycho-education for adoption needs to cover topics such as attachment, culture and effects of institutionalization issues in both domestic and international adoption in adoption institutions.

ii) For women in particular, little attention is paid to how being a mother changes one's life. Such education may be particularly relevant given the fact that the majority of women in this study were over 35 years of age with some being single and most of them working whereby they were juggling motherhood and work responsibilities.

iii) In understanding issues that contribute to child attachment behavior, a clinician has the foresight to listen for attachment-related issues (past and present) that come up in the therapeutic work. The clinician needs to gently encourage ongoing exploration of those attachment-related issues that come up in the therapy sessions. This would provide space for the parents to feel safe in exploring with the clinician's attachment-related experiences and adoption-related experiences with their children. Many parents feel unsafe to disclose past and current information pertaining to adopted children to therapists in order to avoid being judged. It is important for clinicians to know that just as children need a secure base for attachment, parents also need a conducive therapeutic environment to vent out their crippling emotions.

Conclusion

Many questions regarding outcomes of attachment among adopted children are yet to be asked and answered. A major finding of this study was that most of socio-demographic factors were not significantly correlated with adopted child attachment. This encouraging finding to families adopting since attachment is thought to be the foundation of later social and emotional development. This contributes to attachment literature and practice regarding attachment of adopted. Child adoption may be the solution for taking care of children in orphanages and other institutions of care. This would enable these children to find families to develop in well and have places they can call home.

In conclusion, the more we understand child adoption and attachment, the more we can improve systems that deal with children to better serve adopted children's affairs. Too often, child adoption policies are created that are not based on reliable and valid research findings, and instead are fiscal or political decisions. This study provides valuable contribution of empirical literature to the field of psychology with information that may be utilized in understanding child

adoption and attachment as well literature on strengthening the bond between adoptive parents and their adopted children. When adopted children form secure attachment, the rest of other developmental aspects such as social, emotional, cognitive and physical are successfully and easily achieved.

Based on the findings of this study, several recommendations for future research can be made:

1. Replication of the present study with a larger sample of adopted children and non-adopted children is vital. The addition of this group would strengthen the study design by including controls with which adopted children could be compared.
2. A study into careers of adoptive parents vis-à-vis number of hours or time spent with adoptive children and child attachment behavior would be vital for future studies.
3. Future studies could include father-child-interactions.
4. Further studies could investigate early attachment behaviour of adopted children post adoption.
5. To further develop our knowledge of attachment in this population, association of other factors other than social demographic factors such as parental stress, family functioning, maternal responsiveness and child attachment need to be studied.

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