



5-2012

Parent Perceptions of Residential Crowding and Child Behaviors in a Post-Migration Burundian Refugee Community

Carole Ian McAteer
cmcateer@utk.edu

Recommended Citation

McAteer, Carole Ian, "Parent Perceptions of Residential Crowding and Child Behaviors in a Post-Migration Burundian Refugee Community." Master's Thesis, University of Tennessee, 2012.
https://trace.tennessee.edu/utk_gradthes/1179

This Thesis is brought to you for free and open access by the Graduate School at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Masters Theses by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a thesis written by Carole Ian McAteer entitled "Parent Perceptions of Residential Crowding and Child Behaviors in a Post-Migration Burundian Refugee Community." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Child and Family Studies.

Hillary N. Fouts, Major Professor

We have read this thesis and recommend its acceptance:

Carin Neitzel, Denise C. Bates

Accepted for the Council:

Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

Parent Perceptions of Residential Crowding and Child Behaviors in a Post-Migration Burundian
Refugee Community

A Thesis Presented for the Master of Science Degree
The University of Tennessee, Knoxville

Carole Ian McAteer

May 2012

Abstract

Residential crowding has been shown to negatively impact child socio-emotional development and behaviors. The current study explores residential crowding and positive social and distress behaviors of Burundian refugee children, aged 3 months-35 months, through naturalistic observations and interviews. Residential crowding was measured in three ways: the ratio of people per rooms in households, the number of people present during observations, and parents' perceptions of crowding. Qualitative parent perceptions of crowding and conceptualizations of crowding were obtained through interviews. The results showed that child behaviors were not predicted by the ratio of people per rooms or the number of people present during observations. Rather, parent perceptions of crowding predicted the positive social behavior of children. Qualitative results showed that Burundian refugees conceptualize homes as crowded when non-family members are present and associate crowding with space constriction. This study expands the research on refugee children and indicates that Burundian parent perceptions of crowding predict child behaviors.

Key words: crowding, refugee, Burundian, children, perception

Table of Contents

CHAPTER 1: Introduction.....	1
CHAPTER 2: Literature Review.....	3
Post-Migration Context for Refugee Families.....	3
Children in Refugee Families.....	5
Burundian Refugees in Knoxville, TN.....	6
Low SES and Environmental Risk.....	7
Environmental Chaos and Low SES.....	10
Environmental Chaos and Crowding.....	13
Culture and Perception of the Environment.....	18
Culture and Socialization.....	20
The Bioecological Model of Child Development.....	22
Purpose of the Current Study.....	27
Hypotheses.....	28
CHAPTER 3: Methods.....	29
Codes and Definitions.....	32
Analysis.....	35
CHAPTER 4: Results.....	37
Child Behaviors.....	37
Crowding Variables.....	39
Child Behaviors and Crowding Variables.....	41
CHAPTER 5: Discussion.....	46
Implications.....	51
Limitations.....	53
Summary and Conclusion.....	54
References.....	56
Vita.....	65

List of Tables

TABLE 1: Boys and Girls Behaviors and Crowding Variables.....	38
TABLE 2: Infant and Toddler Behaviors and Crowding Variables.....	39
TABLE 3: Average number in Observations.....	41
TABLE 4: Regression Table for Child Behaviors and Crowding Variables.....	41
TABLE 5: Frequency of Themes: “Do you think your house is crowded, why do you feel this way?”	44
Table 6: Frequency of Themes from “Tell me a time when your house was crowded...”	45

Chapter 1.

Introduction

Refugees experience an uprooting from a familiar social and physical context and placement into a new host society. Particularly, the unfamiliarity within the social and physical contexts can induce behavioral adaptation for refugees. The behaviors and adaptations in a post-migration society influence refugee parent-child interactions, parent's perceptions of their environment, child socio-emotional development, and child behaviors.

The physical and social aspects of post-migration context influence not only the behaviors of individuals, but also the development of the individual. The interactions of the physical and social environment provide the context for children's development. The physical environment influences the psychosocial (Evans, Lepore, Shejwal, & Palsane, 1998), cognitive (Wachs, 1989), socio-emotional (Evans, Gonnella, Marcynyszyn, Gentile & Salpekar, 2005), and physical development (Evans & Kantrowitz, 2002) of children. In particular, aspects of the physical environment such as toxins (Evans, 2006), ambient noise (Matheny, Wachs, Ludwig & Phillips, 1995), lack of social communication (Bradley, & Corwyn, 2002), lack of daily routine (Weisner, 2005), and poor housing quality (Evans, 2006) can pose risks to a child's socio-emotional development.

People who live in poverty or in low socio-economic contexts have a higher potential of exposure to physical context risks than those who do not live in low socio-economic contexts (Evans, Stalzman & Cooperman, 2001). The physical context of crowding or person density in homes has been noted to influence children's socio-emotional interactions with caregivers and children in crowded homes express more maladaptive social behaviors and tend to me more

withdrawn than children in non-crowded homes (Evans, Lepore, Shejwal, Palsane, 1998). Research in the United States has shown that crowding influences parent-child relationships, social behaviors, and children's emotional development (Evans, Lercher & Kofler, 2002; Wachs, 2010). Studies in non-western societies have also exemplified the detrimental effects of crowding on child behaviors and parent-child relationships. In a study by Evans and colleagues (1998), the influence of residential crowding on children's perceptions of parent-child conflict in India was demonstrated, as children living in crowded houses reported greater perceptions of parent-child conflict than those who did not live in crowded homes. Although studies suggest detrimental effects of crowding in western and non-western cultures, cultures may value personal space and crowding differently. Different cultures may have different perceptions of crowding, definitions of crowding, and behavioral responses in crowded situations.

In 2010, the United Nation's Population Fund estimated that there were 40 million refugees, worldwide, with over half of them being children (UNFPA, 2010). Refugee populations have experienced changes in their physical ecology and often times cultural changes in their transition to a post-migration society. Many refugee populations have experienced a time or period of displacement in refugee camps, where conditions vary but often pose physical environmental risks of overcrowding and a decrease of provisions from their pre-migration homes and transition to their placement in their new host society (Lustig, 2010). Although the physical context in the host society may be more stable than in the refugee camps, the conditions may be inadequate by the host society's standards of physical home quality and overcrowding (Evans, 2006). Individual perceptions of the environment are guided by cultural values and exemplify preferences in personal space and tolerance of crowding. The cultural values placed

on crowding may influence the way in which parents socialize their children and the way children behave in crowded environments. The effects of post-migration overcrowding may not be as influential on children's socio-emotional development and behaviors as among non-migrants perhaps due to variation in cultural perceptions of crowding and preferences for personal space. Cultural conceptions and perceptions of crowding may ameliorate distress and withdrawn child behaviors in a crowded environment. The purpose of the current study was to examine the extent to which Burundian refugee households are crowded and to gain Burundian parents' perceptions of crowding. This study examined relationships between crowding and children's positive social, withdrawal, and distress behaviors.

Chapter 2.

Literature Review

Post-Migration Context for Refugee Families

Many of the refugee or migrant populations face a challenge of living in a host society with low economic resources for survival and adaptation. These economic and contextual issues are stressors for many refugee populations in a post-migration context. Weine and colleagues (2011) explored the risks and protective factors that Burundian and Liberian refugees attribute to re-migration after resettlement. The authors reported that refugee families chose re-migration due to contextual and economic factors that originally placed them at risk for losing housing due to financial constraints and lack of social support due to their distance from relatives and members of their original community (Weine, Hoffman, Ware, Tugenberg, Hakizimana, et al., 2011). After re-settling in their chosen communities, the refugees improved their protective and

economic factors and reported a feeling of increased family stability, family pride and family agency.

Social and community contexts play a role in the well-being and adaptation of refugee families and children. A study by Georgiades, Boyle, and Duku (2007) described the negative influences a hostile neighborhood and acculturation can have on a child's behavior problems and school performance in youth of non-migrant and migrant families in Canada. The authors purported that the immigrant families were usually equipped with family protective factors such as strong family cohesion that may buffered the negative effects of social disadvantage in harsher neighborhoods. Those migrant children with poor family connections reported having more behavior problems in a low socio-economic context than those children who reported stronger family ties.

The results of Georgiades, Boyle, and Duku's (2007) study indicated that although distal processes such as socio-economic status seem to influence children's outcomes in behavior and school performance, it seems as though the migrant population within this study had a proximal influence that buffered the negative effects of poverty: family processes. In this study, the immigrant children living below the poverty line did not express internalizing and externalizing problem behaviors, which were the opposite results for their non-immigrant Canadian counterparts. Hostile parenting, parental depression, and family dysfunction partially mediated children's problem behaviors and family poverty in immigrant families.

Therefore, the family processes and functioning of the family can greatly reduce the risks of context imposed on individuals in refugee families. The context and location of the placement of refugees can influence the perceived community and social support of refugees. The perceived

support can also reduce the perceived economic risks imposed on the refugee family. Although the socio-economic status of a refugee family can influence child and family behaviors, not much is known about refugee families' responses and perceptions of the physical context of their post-migration homes (Georgiades, Boyle, & Duku, 2007; Weine, et al., 2011). In the current literature on refugees, little is known about the effects of post-migration cultural perceptions of environment. Furthermore, there is a lack of studies that examine young children's social behaviors in refugee populations.

Children in Refugee Families

Although context and socio-economic status can influence parent-child relationships and family dynamics during transitioning for refugees, not much is known about the children, infants, and toddlers in refugee populations. Most research on refugee children pertains to adolescents that have experienced migration and warfare (Heptinstall, Sethna, & Taylor, 2004) or children of refugee parents who have experienced traumatic events and exhibit PTSD symptoms and behaviors (Daud, Klinteberg, & Rydelius, 2008). According to Heptinstall and colleagues (2004), after relocation, those who have symptoms of PTSD continue to suffer from psychological distress through discrimination and loneliness, employment issues, and even the act of obtaining a refugee application. In a study by Daud and colleagues (2008), refugee children with traumatized parents displayed PTSD symptoms, scored lower on pro-social behaviors, psychological well-being, family reactivity, and exhibited more external behavioral problems than refugee children who did not have traumatized parents. In this study, the children of refugee parents with mental health problems associated with experiencing a traumatic event eventually exhibited maladjustment problems themselves.

The literature pertaining to refugee children has primarily looked at the social behaviors and mental health of older children, particularly ages ranging from 5-13 (e.g., Daud, Klinteberg, & Rydelius, 2008; Hepinstall, Sethna, & Taylor, 2004). A large population of refugee children, those aged 0-4 years are underrepresented in the literature. The psychological, social, and biological experiences in infancy and early childhood impact later socio-emotional and physical development (e.g., Bornstein, 2002; Evans, 2006; Shaw & Vondra, 1995). The post-migration context may influence later socio-emotional behaviors in the refugee child population. Since it is evident that refugee children are affected by the post-migration context, further studies are needed to examine social and emotional effects of post-migration contexts such as chaos and crowding on young toddlers or second-generation refugees. Younger children and toddlers may be susceptible to maladaptive behaviors and socio-emotional issues such as conflictual behaviors and withdrawal related to residential crowding.

Burundian Refugees in Knoxville, TN

The majority of the Burundian refugees in Knoxville have experienced recent migration to the United States after years of living in refugee camps in Tanzania. This particular refugee population may have experienced psychological, social, emotional issues stemming from life within the Tanzania refugee camps.

This Knoxville Burundian refugee population currently lives in low SES, government housing districts, and many utilize government-funded food stamps for provisions. Many of the refugee families live in the housing developments with multiple family members living in small quarters, a seemingly crowded home environment from a western perspective. Not only do the refugees face risks of low incomes and living in low SES contexts, they also face the post-

migration and transitioning risks associated with a post-migration context for refugees such as a lack of community and social support.

Little is known about the young children within this Burundian refugee population and their voices or roles in a post-migration context. Also, little is known about adult refugee perceptions of their post-migration environment or the potential risks of a low socio-economic status imposed on the families. As noted in ethnographic studies with African cultures, many collectivist cultures do not perceive contextual factors such as crowding as a risk, but rather prefer close personal space (Evans, 2000). Therefore, the Burundian refugee population may not perceive their post-migration physical context as adverse in terms of crowding.

Low SES and Environmental Risk

The physical and social contexts of an environment influence children's social relationships, behaviors, health, and development (Evans & Kantrowitz, 2002). In particular, low socio-economic status can impinge on children's development through exposure to various types of environmental risk. Social stressors or risks associated with low socio-economic status or low-income households include lack of parental responsiveness (Martini, Root & Jenkins, 2004), and unstable family and social routines (Weisner, 2010). Physical environmental risks include the potential exposure to toxins, poor air quality, ambient noise, and residential and neighborhood crowding (Evans & Kantrowitz, 2002). As indicated in the literature, a context of low socio-economic status increases the likelihood of exposure to cumulative or multiple risks for children with poor outcomes in development and social behaviors (e.g., Martini, Root, & Jenkins, 2004; Lanza, Rhoades, Greenberg, & Cox, 2011).

Low SES and Socio-Emotional Development. Low socio-economic status can influence children's socio-emotional development through the instability of socialization from parents (Dodge, Pettit & Bates, 1994). In a longitudinal study, Dodge and colleagues (1994) looked at the influence of socio-economic status and socialization practices and the development of conduct problems and social interactions with peers among non-immigrant elementary school children. The researchers used parent reports of income as a measurement of socio-economic status, parent interviews and observations on socialization practices with children, and teacher reports of child conduct problems over the course of four years. Children living in low SES contexts experienced high degrees of harsh criticism from mothers with lower indications of parental warmth and had higher reports of conduct problems in school than their middle-income cohorts. The authors suggested that the parental socializations have the potential to influence a child's social interactions with peers (Dodge, Pettit, & Bates, 1994). Huang and colleagues (2007) looked at variation in mother-child conflict related to context and socio-economic status in 16 and 18-month infants and their mothers in low SES families and moderate SES families. Poorer families had a higher frequency of conflict between the mother and the infant than wealthier families (Huang, Douglas, Caughy, Feldstein, & Genevro, 2007). Therefore the environment can influence the social interactions with individuals, particularly the parent-child dyad.

Evans and Kantrowitz (2002) argued that the recent literature on poverty did not attend to the effects of the physical environment and risk factors on children's socio-emotional development. In a study, Evans and English (2002) looked at the socio-emotional development as an outcome of stressors from the physical environment related to low socio-economic status in

a sample of children living in rural poverty. Parents reported on aspects of psychosocial stressors (violence, family turmoil, child-family separation) and physical stressors (crowding, noise, and housing quality). The parents of children who lived in poverty reported more psychosocial and physical stressors and had more difficulties in self-regulatory behaviors and reported more psychosocial distress than middle-income children (Evans & English, 2002). Therefore, the social and physical stressors related to poverty environments influence parent-child interactions and perceptions of psychosocial and physical distress.

Low SES and Child Behavior. The literature on the effects of poverty on child behaviors suggests that children living in low socio-economic households exhibit maladaptive social behaviors such as aggression that potentially contribute to the development of long-term antisocial behaviors (Dodge, Pettit, & Bates, 1994; Keenan & Shaw, 1994). Kupersmidt and colleagues (1995) looked at parallel factors of the neighborhood and family on the characteristics of aggression and peer relations in American children in a small Southern city. The researchers suggested that neighborhood context was associated with elevated levels of aggression in children in 2nd through 5th grade (Kupersmidt, Greisler, DeRosier, Patterson, & Davis, 1995). Keenan and Shaw (1994) looked at the stability of aggressive behaviors in toddlers at 18 months and 24 months of age in children from low-income households. Children of low socio-economic status aggressed toward toys and parents in low stress situations, even when not provoked (Keenan & Shaw, 1994).

In a longitudinal study, Dodge and colleagues (1994) investigated socialization and child conduct problems in low SES contexts. The authors noted that conduct behavioral issues were more frequent in children living in low SES at the end of a four-year study with kindergarten to

elementary school aged children (Dodge, Pettit, & Bates, 1994). The results of this study suggest detrimental effects on child behavior and conduct increase over time in a low SES context.

The literature on aggression and children primarily examines older children and not infants or toddlers and the onset of aggressive behaviors and continuance of aggressive behaviors may be more prevalent in young children from low-income households (Keenan & Shaw, 1994). The social behavior of aggression may be more prevalent in younger children than the age groups that have been previously studied. Therefore, research on the influence of socio-economic status or contexts of poverty and children is needed to examine infants and toddlers behaviors and social interactions.

Environmental Chaos and Low SES

Aspects of the physical environment such as loud noises, residential crowding, and poor housing quality are often associated with the inadequate living conditions in low SES contexts. The results of several studies have shown the deleterious effects of environmental chaos on the development of children, including poor temperament, cognitive problems, motivation, and behavioral problems (e.g., Hart, Petrill, Deckard, & Thompson, 2007; Matheny & Phillips, 2001; Maxwell & Evans, 2000; Maxwell, 1996). Environmental chaos refers to a conglomeration of overstimulation in aspects of the physical environment including human traffic, crowding or density, and ambient noise that provide stress or hindrances on child socio-emotional development (Wachs & Evans, 2010). Wachs and Evans (2010) described the relationship between environmental chaos and development as an inverted “U” shape curve with axes of stimulation and development. Human or child development is maximized at the top of the “U”, where stimulation is neither a low or high extreme. The authors suggested detrimental effects in

development occur in contexts of constant, high stimulation, and contexts of low, unstable stimulation. Environmental chaos occurs at levels of high stimulation and has the potential to impair development.

Environmental chaos acts as a mechanism by which low socio-economic status influences development (Wachs and Evans, 2010). In a low socio-economic context, there is low social support and high-density crowding conditions, which increase the likelihood of exposure to environmental chaos and risks and the potential for child morbidity and development of conduct problems (Wachs & Corapci, 2003). Although the context of low SES may be congruent with several aspects of environmental chaos such as overcrowding, ambient noise, and human traffic; environmental chaos can occur in contexts other than low SES (Wachs & Evans, 2010). Therefore, one must note that environmental chaos is a construct, independent of the social and psychological risks associated with low SES (Coldwell, Pike, & Dunn, 2006). Dumas and colleagues (2005) noted that home chaos is distinguished from SES. Matheny and colleagues (1995) found that the Confusion, Hubbub and Order Scale (CHAOS), in home environments could not be explained solely by SES, and therefore suggested that it is a separate construct than SES. Although low SES contexts increases the likelihood of a chaotic home, not every home is marked with environmental chaos and therefore there is variability in chaos within low socio-economic households. Whatever the process, environmental chaos seems to influence parents' socializations to children and children's socio-emotional development and social behaviors.

Environmental Chaos and Socio-emotional Development and Parenting.

Environmental chaos has implications for the social interactions of individual children and people within the environment. Wachs and Corapci (2003) suggested that the level of chaos in

the environment can influence parenting behaviors and therefore parent-child relationships. In a study with middle class English children aged 4-8 years old, Coldwell and colleagues (2006) looked at the moderating effects of household chaos on parenting and child behavior through self-report scales of parenting, child behaviors and the CHAOS scale. Children's reports of parental anger and hostility were highly correlated with household chaos and that chaos was associated with children's problem behaviors above the effects parenting, child age, and gender. Therefore, the author suggested that chaos was a moderator of parenting and child behaviors (Coldwell, Pike, & Dunn, 2006).

Environmental chaos may influence parenting strategies, not only through the manifestation of parental hostility, but it may also influence parental efficacy and parent behaviors. In a study by Corapci and Wachs (2002), parenting behaviors were influenced by the environmental chaos through increased family conflict and a decrease in perceived social support (Corapci & Wachs, 2002). Environmental chaos can influence parental behavior and therefore the socialization of children.

Environmental Chaos and Child Behavior. Environmental chaos not only seems to influence social and emotional children's development, but it also appears to influence children's temperament and behaviors with those in their social environment. In particular, research of young children and environmental chaos has found that children exhibit aggression and conflict toward those in their social environment or exhibit behaviors of withdrawal from social interactions (Huang et al., 2007; Regoeczi, 2003).

Evans and colleagues (2005) looked at the role of chaos on children (3rd-5th grade) living in poverty and their socioemotional adjustments and behaviors. The results of this study showed

that in lower income families who reported more crowding and environmental chaos conditions, children had more socio-emotional developmental problems than those families who did not report chaotic conditions (Evans, Gonnella, Marcynysyn, Gentile, & Salpekar, 2005). Chaotic home conditions not only influence the social interactions within the parent-child dyad but also appear to extend to children's socioemotional behaviors.

Environmental Chaos and Crowding

One aspect of environmental chaos that is particularly salient in the effects on children's socio-emotional development and behaviors is residential crowding. Residential crowding is denoted by western standards as having more than one person per room in a household and has been noted to create constant and often unwanted social interactions or stimulation for children (Evans, 2000). This construct deters individuals from having personal space and the ability to retreat from unwanted social circumstances within the home environment (Wachs, 2003).

Crowding is also associated with higher levels of risk for children being exposed to violence or conflict (Rogoczi, 2003). Children exposed to repeated acts of conflict in the home environment may be susceptible to developing and manifesting their own aggressive behaviors with people in their social environment (Baron & Richardson, 1994). Therefore, a context of crowding may influence social development, social interactions, and child behaviors.

Environmental Chaos, Crowding, Social Interactions, and Child Behavior. Residential crowding is a context in which individuals are often subjected to constant social interactions with limited ability to retreat to personal spaces (Wachs, 2010). Residential crowding has been linked to the behaviors of some children to act in aggression toward those in their home environment or

withdrawal from the social environment (Rogoezci, 2003; Evans, 2000). Crowding influences the social interactions and development of children and their behaviors in their social environment.

Children develop behavioral coping mechanisms as a result of a crowded environment such as withdrawal and aggression. Research suggests that children either implement a strategy of withdrawal or aggression to mitigate the risks of chronic social stimulation. Withdrawal is a behavior that specifically reduces social overload through social isolation. It is a behavior in which an individual can express self-efficacy by choosing to reduce social interaction in a social climate (Rogoezci, 2003). Evans (2000) noted that college students who reported living in crowded conditions had higher levels of social withdrawal than students not living in crowded conditions. In a study of coping strategies of adults in residential crowded neighborhoods, Rogoezci (2003) noted that individuals can implement coping strategies of both withdrawal and aggression in situations of crowding. Although this study was conducted with an adult population, the coping mechanisms in response to crowding may also be relevant for children.

Evans, Lercher, and Kofler (2002) studied the effects of crowding on Austrian 3rd and 4th graders overall well-being and mental health. The children living in crowded homes were reported as having more behavioral problems in schools, as reported by their teachers, and reported higher incidences of family conflict than those children not living in crowded homes (Evans, Lercher, & Kofler, 2002). Therefore, their social interactions within a context of crowding were mainly depicted as having high frequencies of conflict, which subsequently influenced their own development of conflictual behaviors.

Residential crowding conditions can impinge on the socio-emotional development of children by providing a context of chronic social stimulation. This social stimulation influences

children's relationships with siblings, parents, and those in their immediate social environment with greater potential for family conflict (Evans, 2000). However, residential crowding may not have the same effects on children's socio-emotional development and behaviors in different cultures due to variation in perceptions of the environment, cultural values and preferences of personal space, and the possible roles of family members as alloparents for young children.

Environmental Chaos, Crowding, and Different Cultures. Residential crowding may not have the same impact in every culture due to variation in preferences for personal space, higher thresholds of crowding, and cultural conceptions of the family (Evans, 2000). Weisner (2010) argued that the Eurocentric criteria of an adequate home environment such as low levels of ambient noise, housing quality, and residential space may not be appropriate for all cultures. The contextual aspects that are inappropriate for development such as compact residential space or the presence of alloparents as caregivers in one culture may be normative, desired, and valued in another culture (LeVine et al., 1994). The perceptions, meanings, and behaviors associated with a concept or environmental risk are socially and culturally constructed (Super, & Harkness, 2002). Perceptions of the environment likely influence parents' interactions with children and eventually may influence a child's own perception of his environment and behaviors. The meanings and perceptions of crowding can influence the effects of crowding on children's socio-emotional development and behavior.

Studies have addressed the effects of crowding on child behaviors and temperament in several non-western countries such as South Africa (Goduka, Poole, & Aotaki-Phenice, 1992), Nigeria (Ani & Grantham-McGreggor, 1998) and India (Evans, Lepore, Shejwal, & Palsane, 1998). Researchers have suggested that in some cultures, there may be a preference for less

personal space or a preference for higher person density in residences (Evans, Lepore, Allen, & Mata, 2000). In a study in Nigeria, boys who lived in crowded homes tended to be more aggressive than their peers who did not live in crowded homes (Ani & Grantham-McGreggor, 1998). The author suggested residential crowding influenced the behavioral conduct problems exhibited by the boys (Ani & Grantham-McGreggor, 1998). Although the study did not obtain the individuals' perceptions of residential crowding, it is evident that crowding was related to social conduct.

In a study by Evans (1998) conducted in urban India, children in India living in crowded homes reported higher perceptions of conflict with their parents than those children who did not live in crowded homes. Therefore, children living in crowded residences in India identified more social conflict and negative aspects of residential crowding. Studies with peer reports of conduct problems and personal perceptions of conflict of children living in crowded homes in Nigeria (Ani & Grantham-McGreggor, 1998) and India (Evans, Lepore, Shejwal & Palsane, 1998) have concluded that crowded homes provide detrimental social experiences for children.

Environmental crowding and home density may influence child behaviors and provide stress and added risks to the parent-child relationship. However, a crowded environment can provide the presence of alloparents available to the child for care. Konner (1977) suggested that some African cultures may not be negatively influenced by residential crowding in socialization and social-emotional development since the context of crowding enables the young child to experience more responsive caregiving from those within the immediate social environment. Wachs & Corapci (2003) suggested that a crowded situation may provide more available caregivers to a child, who may respond quickly to a child's cries of distress.

Future research regarding crowding in different cultures is needed to explore the meanings and perceptions of crowding. If some cultures do not associate crowding with negative social interactions and do not perceive that their environment is crowded, then this may not influence their behaviors. Also, the crowding literature has focused on older children, aged 5-12, and has not examined the socio-emotional influences of crowding on infants and toddlers (Ani & Grantham-McGreggor, 1998; Evans, 2000). Since the social environments of infants and toddlers impact their later socio-emotional development, there is a need for future research to explore crowding and how it relates to infant child behaviors and social interactions.

Environmental Chaos and Crowding in Refugee Populations. Refugees may experience environmental chaos in pre-, mid-, and post-migration processes. Many refugee populations have experienced often abrupt upheaval and displacement from their culture of origin (Lustig, 2010). This upheaval may lead to environmental of chaos in the post-migration contexts. As Lustig has suggested, “chaos is the refugee experience” (Lustig, 2010; pg. 242).

The pre-migration experiences of deprivation, the mid-migration experience of upheaval, uncertainty, fear, and the post-migration experience of loss accentuate the contextual risks imposed on refugees. In particular, refugee populations that have experienced life in refugee camps were often exposed to uncertainty, lack of routine, instability of resources, and conflict. These migration experiences can influence the perceptions of risks within the post-migration home environment (Lustig, 2010).

There is a gap in the literature with respect to refugees and their perception of crowding in post-migration contexts. In particular, the influence of parental perceptions of crowding on the behaviors and socio-emotional well-being in secondary refugees in a post-migration context has

not been examined. Parents' perceptions of their environment can influence their behaviors toward their children and subsequently influence the behaviors and perceptions of young children. Therefore, the refugee parents may have cultural definitions and perceptions of crowding that differ from the host society and may not exhibit behaviors consistent with crowding. In particular, refugee parents who have experienced multiple contexts may not perceive a post-migration context as crowded and therefore may not socialize their children to perceive the environment as crowded.

Little is known of the experiences children of refugees and secondary refugees. In a context that is post-migration for the adults and inherited for secondary refugees, there is potential for a social disconnect between the refugee and the next generation. The intergenerational literature on refugee populations pertains mainly to the acculturation gap experienced between the parent-child dyad (Berry, 2001; Merali, 2002). This acculturation process may not only influence parent socialization practices with young children. The refugee parent may have a different perception of the post-migration context due to previous cultural conceptions and experiences than their children, who are socialized within the cultural dynamics of their parents, yet in a context that is unfamiliar to the refugee parent. Future research is needed to explore the processes of socializations in early childhood and infancy in refugee populations.

Culture and Perception of the Environment

The impact of environmental risks, chaos, and more specifically, crowding may not be the same in all cultures. Cultural values influence perceptions of the environment, beliefs of human development, and socio-emotional behaviors of children in the environment (LeVine,

1994; Keller, & Otto, 2009). These beliefs and values are socially constructed and inform perceptions of the environment and the risks within the environment (Keller, & Otto, 2009). Since not all cultural values are the same, there is variability in the perception of risks in the environment in different cultures.

The concept of crowding may have different impact on children in different cultures due to cultural values for the constructs of personal space, crowding tolerance, and perceived environmental space (Evans, Lepore, & Mata Allen, 2000). Personal space is a way to control social interactions and crowded conditions may exceed this control. Crowding tolerance is an ability to withstand high-density crowding. Some cultures may have different preferences for personal space and may also have a different tolerance of crowding.

According to Evans (2000), cultural variability in the perceptions of crowding and tolerance of crowding may lead to differences in psychological distress. His study looked at the variability of density and psychological distress in collectivist (Latin and Asian Americans) and individualistic (African and Euro American) cultures to associate perceptions of crowding and psychological distress. Collectivist cultures may have more crowding tolerance than individualistic cultures. However, the results of the study suggest there was no significant interaction between culture, residential density, and psychological distress. For each of the cultural groups, higher density was associated with elevated levels of psychological distress. Therefore, there was no significant difference in cultural groups' tolerance of crowding. The authors also noted that acculturation did not influence the tolerance of crowding.

In this study (Evans, 2000), the perception of crowding differed for the cultural groups. For Anglo-Americans (individualistic culture), the perception of crowding was correlated with

greater intensity in perceived crowding than among the other cultural groups. Therefore, the individualistic cultural groups perceived crowding at different levels than the collectivist cultures.

Evans' (2000) study examined the role of culture in perceptions of crowding and distress in those living in residential crowding. Although the author suggested a difference between collectivist and individualistic cultures in crowding perceptions; however, these results may not generalize to populations other than African-American, Euro-American, Mexican-American, and Vietnamese-American groups that were studied.

Personal perceptions are informed by cultural values of the society in which the individual lives and is associated. Perceptions of crowding in a post-migration context are important in understanding socio-emotional development of children and behaviors of the refugee population. Since parental perceptions of the environment influence their behaviors and eventually their interactions with their children, parents who perceive their environment as crowded may exhibit behaviors such as hostility toward those in their social environment. These behaviors influence their interactions with their children, and eventually, these interactions could influence children's socio-emotional behaviors. In particular, future research is needed to examine the perceptions of crowding in individuals' and children's socio-emotional behaviors in order to better understand the effects of crowding.

Culture and Socialization

Parental Socialization in Infancy and Toddlerhood. Infancy and toddlerhood is a time of rapid physical and social development and dependency on parents for biological needs and survival (Trivers, 1974). Infants and young children aged 0-3 years depend on parents and those

within their social environments for support in maintaining biological resources such as food attainment and nourishment for development and survival, as well as physical protection and support.

Parents not only provide biological connections to their infants, but also social, and mental connections to their infants. Through social interactions with parents, infants gradually become more socially aware and imitate and maintain social interactions (Bornstein, 2002). Early childhood socio-emotional development stems from the social interactions with parents, siblings, and others in their social environment in infancy and toddlerhood. The main socialization experiences of infants and toddlers are within their microenvironment and include their interactions with parents and siblings that have an effect on the development of later socio-emotional behaviors (Bornstein, 2002).

Parental interactions often vary by the cultural and physical context (Bradley & Corwyn, 2002). A context of poverty provides added stressors for the parent's daily lives and influences their parenting behaviors toward infants (Brophy-Herb et al., 2011). However parenting is not solely influenced by the context, but is also informed by culture.

Culture and Parenting. Culture not only influences perceptions of one's risks and environment, but also the social interactions between parents and children. Parents directly socialize their children to develop skills and behaviors that are necessary for development within their culture and indirectly socialize their children by responding to their young children in culturally appropriate ways (Super, & Harkness, 2002). Several studies noted variability in parent socializations in different cultures in the description of parent-child interactions (e.g.,

LeVine et al., 1994; Super & Harkness, 1997; Whiting & Whiting, 1975). Therefore, parents socialize their children with values and beliefs that are socially important in their culture.

The behaviors of children and parents are molded by their contextual settings and social rules (Whiting & Whiting, 1975). The setting or ecology in which an individual lives defines the daily experience and provides for the interactions and physical locale of an individual (Super, & Harkness, 2002). Therefore, the context and culture play a role in the construction of meanings of the environment.

Culture and Protective Factors. Cultural values impact the meanings of the social and physical environment. Many African cultures place a high value on the connectedness of family members, closeness with family and kin, and the support of kinship networks (e.g., LeVine, et al., 1994; Nsamenang & Lamb, 1995). For example, LeVine and colleagues (1994) have shown that family communalism and kinship relationships influence the organization of the household among the Gusii of Kenya (LeVine, et al., 1994).

These cultural aspects that emphasize connectedness may have implications for how individuals conceptualize the physical environment and perceptions of crowding. Furthermore, concepts of bed sharing and having more than one person per room may not have negative implications for cultures that encourage interrelatedness and close connections with kin (e.g., LeVine, et al., 1994). For a family that values connectedness with kin, a seemingly crowded context with family members may be perceived as positive. Therefore, the cultural value of connectedness with kin may impact the conceptualization of crowding and therefore, the behavioral responses to crowded environments.

The Bioecological Model of Child Development

In order to understand the role of context on development and socio-emotional interactions with family members, the role of the individual within the context must be examined. The Bioecological Model of Human Development purports a person-centered approach to understanding the implications of context on human development over time (Bronfenbrenner, 2006). Within this model, the person is an active participant in the environment, establishing interactions within their available environment and social arena.

The Bioecological Model describes the interaction of context and person through complex reciprocal interactions of process and time, which mold the course of human development. As the context and person differ, the interactions of four major properties of the Bioecological Model create a unique foundation for individual development. Four properties to the bioecological model include process, person, context, and time, which form the systems that influence human development. The property of process involves the interaction between the child and the environment, which functions through the development of the person, within a particular context and over time. As described by Bronfenbrenner (2006), the property of the person is defined by three characteristics that influence the proximal processes and interactions with the immediate environment: disposition, resources of availability, and demand. These three characteristics influence interactions with family members, friends, teachers, which is subsequently described as the microsystem. The context property of the model is made up of the immediate and distal environments that foster the community and interpersonal social interactions with the individual. This property provides a forum of stability of the proximal and distal environment that in effect shapes the social-emotional development of the individual. The property of time considers the processes and person within the context for a particular duration

of time. This particular property enhances the bioecological model as an individual evolves within a larger society and community that also evolves or changes over time.

The bioecological model of human development is a theory that addresses the non-linear course of development. In this model, human development is a curvilinear track that is influenced by levels of stimulation from contextual processes. Within this curvilinear course, human development is optimized with a particular level of stimulation. Overstimulation and under-stimulation from the environment can deter an individual's achievement of optimal development. Overstimulation can result in a chaotic environment and influence social conduct and socio-emotional development and under-stimulation such as neglect can reduce a child's exposure to viable social interactions or even attainment of biological resources.

Within the bioecological model of human development, Bronfenbrenner stresses the person's capacity to influence their development and interactions with context, particularly through the child's perception of the environment. According to Bronfenbrenner (2006), "the demand characteristics invite or discourage reactions from the social environment that can foster or disrupt the operation of proximal processes (p. 796)." Therefore, the characteristic of the person modifies the proximal processes and social interactions within the immediate environment. Characteristics of the child may place the child as the focal instrument in dictating the interactions with the context; however, the environment and physical components of the context impact the capacity and type of interactions exposed to a child. It is the child's perception of this exposure that instigates a behavioral or emotional response to the context. Therefore, the individual and the context must be considered when investigating child development and behaviors.

Chaos and the Bioecological Model. The bioecological model informs the impact of an environment of chaos on development and child behaviors. Environmental chaos is noted to occur at levels of high stimulation that impairs human development. Environmental chaos effects child development and behaviors through the microsystem, mesosystem, exosystem, and macrosystem. From the bioecological theory, a disruption in one system can influence the individual's development through a ripple effect in each level. Distal processes of the exosystem and macrosystem can alter more proximal processes of the mesosystem and microsystem. Aspects of environmental chaos such as noise, crowding, and human traffic impact the stimulation and social interactions in the microsystem of a child. The context of chaos increases the likelihood of proximal processes within the microsystem and mesosystem of occurring.

Although the Bioecological model stresses the impact of the person to shape and mold the impact of the process of context on development, a context of chaos undermines the agency of the child. In a chaotic environment, with a lack of routine, instability of resources, constant stimulation from overcrowding or human traffic and noise the child cannot adapt to the context and therefore manipulate the context (Wachs, 2010). This immobilization can catalyze the impact of the context on human development and behavior. Wachs and Evans (2010) suggest that children in chaotic environments do not develop inhibitory behaviors and emotions. However, a child can moderate the impact of the chaotic environment, as described by the person property of the bioecological model. Although a child in a chaotic environment may not be able to directly change their environmental circumstances to decrease crowding, noise, or human traffic, child characteristics can influence the impact of chaos on the child's development.

Crowding and the Bioecological Model. The crowding aspect of chaos directly impacts child development through the proximal processes in the microsystem (Wachs, 2010). A crowded context creates the possibility of more social interaction with people in the environment and may cause overstimulation of social interaction for children. Crowding also can influence the microsystem through the quality of parent-child interactions. In a crowded context, the family dynamic and parent-child relationship may be compromised with the presence of more social actors to attend to the child's needs.

Refugees and the Bioecological Model. The Bioecological Model of human development can be used to describe the impact of context on refugee populations (Wachs & Coracpi, 2003). Refugees are greatly influenced by the macrosystem and mesosystem processes within the bioecological model.

The macrosystem context of an individual such as the political status of the society in which a child lives or the culture in which a child lives impacts child behavior and development through the theory of bioecological model of human development. The refugee experience of political upheaval and displacement influences the infrastructure of macrosystem processes and development. In this case, the macrosystem creates the refugee status. Particularly in post-migration contexts of refugees, there is a macrosystem change that impacts the microsystem. Many post-migration refugees experience a host society with a different culture, food, economic structure, and language. Through these macrosystem processes, the interactions of the refugee family, adults, and the child can be fragmented in a context of chaos (Lustig, 2010).

The refugee child's mesosystem can be a process that provides for a chaotic environment. Many refugee parents have an abrupt transition into a host society that may have drastic cultural

and occupational differences than their pre-migration context. Refugee parents may experience changes in occupations and work environments, the adoption of a new language and cultural values to provide for their families in a post-migration context. This transition can disrupt socializations and interactions of refugee parents and their children, therefore affecting the refugee child's mesosystem and microsystem (Lustig, 2010). Many refugee populations experience displacement in refugee camps that are crowded and lack efficient resource availability to the refugee population, which also impacts the microsystem of the refugee child (Lustig, 2010; Wachs & Corapci, 2003).

Refugees experience an entire context change through the migration process. The distal and proximal processes of the macrosystem, exosystem, mesosystem, and microsystem create the experience that is unique to the refugee population. Using the bioecological model of human development, the influence of context and chaos associated with the refugee experience is better understood.

Purpose of the Current Study

The purpose of the current study is to examine the extent to which young Burundian Refugee children's environments are crowded and if the variation in the crowding predicts children's positive social and distress behavior according to a) the number of people per room living in the household, b) the primary caregiver's perception of crowding in the home, and c) the number of people present during observations of children. The second purpose is to examine the extent to which Burundian perceptions of crowding cohere with the number of people per rooms (i.e., standard western definition of crowding).

Conceptualizing Crowding in Context

The crowding literature has mostly studied crowding utilizing one standard definition. The literature defines crowding as having more than one person per room in a household (Evans, 2000). The current study measures crowding in three different respects: the number of people per household, caregiver perception of crowding, and observation crowding, with naturalistic observations and demographic interview questions. This study will not only look at crowding as the number of people in the household but will also include measurements of the number of people in an observation and the perceptions of caregivers of residential crowding.

The current study provides a unique context for the crowding literature. The current study was conducted with post-migration Burundian refugees and their children in a mid-sized urban city in a southern state in the United States. Also unique to the crowding literature, this study looked at child behaviors of 3month- 35month old children in a low SES context.

The crowding literature that has looked at child behaviors as a result of crowding has primarily focused on child conflict behaviors (Evans, 2000; Ani, 1998). The term conflict is not developmentally appropriate for this age group infants (3months-1 year) and toddlers (1year-35 months), and therefore, in the current study, the conflict behavior is considered more broadly as distress. Distress is a behavior that socially indicates the feelings of discomfort and irritability manifested through fussing and often, aggressive behaviors.

Hypotheses

1. The first hypothesis is that children in crowded social microenvironments, or crowded homes will exhibit more conflictual/distressed and/or withdrawn behaviors toward others (those in their social environment). It is hypothesized that children in crowded homes or crowded social environments will either be more aggressive and distressed or withdrawn and

negativistic toward social stimulation. Since people in crowded homes can exhibit both withdrawal and distress social behaviors, it is important to look at both behaviors in the child refugee population. The second variable of parental/primary caregiver perception is that children of parents who perceive their homes as crowded will exhibit more distressed and/or withdrawn social behaviors. Since parenting practices are culturally informed, it is hypothesized that the parents' perceptions of the social environment will influence their children's behaviors in an environment. It is hypothesized that children observed with more people present during an observation would exhibit distressed or withdrawn behaviors.

2. The second hypothesis is that there is a difference in the Burundians' perceptions of crowding and the standard definition used to measure crowding of more than 2 people/room. Currently, there is no evidence that Burundian perceptions of crowding conform with this standard definition and the refugees may have a higher threshold of crowding and definition of crowding due to past experiences in Africa and refugee camps.

Chapter 3.

Methods

The data collected in the current study are a part of a larger study examining caregiver-child interactions in the Burundian Refugee community in Knoxville.

Participants. The participants included Burundian refugee parents, aged 18 years or older. The focal children include Burundian refugee children (N=21) aged 3-35 months. For families with multiple children aged 3-35 months, one child was chosen to participate in the study. Participants were not included if the focal child or parent was ill.

The Knoxville Burundian Community

The Republic of Burundi has faced ethno-political turmoil between the Hutu and Tutsi tribes since gaining independence in the 1960s. Tribal violence in the early 1970s caused mass diaspora into refugee camps in neighboring countries such as Tanzania, Rwanda, and Kenya. Many of the Burundian refugees were housed in refugee camps until the early 2000's, and are termed the "1972 Burundians." In 2006, many of the refugee camps could no longer house the Burundian refugees, forcing many of the Burundian refugees to face migration, yet again. Many western countries such as the US, Australia, and the UK resettled the displaced Burundian refugees.

From 2007-2010, approximately 50 Burundian families were resettled in Knoxville (Bates, Njororai, Ejike-King, Rufyiri, n.p.). In 2012, there are approximately 300 Burundian refugees located in Knoxville, TN. The majority of the Burundians in Knoxville are termed the "1972" Burundians and many of the younger Burundian refugee population in Knoxville were not born in Burundi, but in refugee camps in Tanzania, the Congo, or Kenya.

Currently, the majority of the population live in subsidized government housing developments in Knoxville and live in a low socio-economic status. The University of Tennessee has close ties with the community through a student-run organization "Healthy Transitions" that aids the refugees indirectly through fund-raising for the Burundian Refugee Organization Solidarity, Development and Light Association (SODELA), and directly through volunteering for child-care at Burundian-led events in the community.

Sampling. The participants were recruited by a member of the Burundian Refugee community. Participants were scheduled for their first observation over the phone and were then scheduled for their second and third observations at the conclusion of observation one. At the

close of each observation, participants were given a 10 dollar gift card as incentive for their participation in the project. At the end of the observations and demographic survey, the parents had received a total of 40 dollars in gift cards to a major grocery store.

Procedure. Before the first observation, translators read the consent form to the parents of the focal child in their local language. Before the parents signed the consent form, the researcher asked the parents if they had any questions about the project to ensure that they understood the research design and procedure.

The focal child was observed on three different days for 2 hours during their regular daily routine. The focal child was observed once in the morning (9-11AM), afternoon (12:30-2:30PM), and evening (4-6PM). The focal child was observed for 45-minutes using naturalistic observation method of recording. After 45-minutes of observation, the observers had a 15-minute rest period and noted some field notes and would then proceed to the next 45-minute observation. On a behavioral checklist, observers noted child behaviors and all behaviors directed toward the child on-the-mark in 30 second intervals (20 seconds observing, 10 seconds recording). The observations were recorded on a paper checklist with a pen at 30-second intervals. The observers wore a small ear phone attached to a digital player that cued them to the recording sequence. This observation method has been used in many cultural contexts, including African communities, and provides for variation in social interactions in the social environment (e.g., Fouts, Roopnarine, & Lamb, 2007; Roopnarine, Fouts, Lamb, & Lewis-Elligan, 2005). Prior to data collection, each coder was trained to a 90% criterion for each code on the checklist. Observer inter-rater reliability was re-assessed in 10% of the field observations.

Observers refrained from interacting with those in the social environment of the child, unless the caregiver had any questions for the observer. For each observation, a trained Kirundi-English translator was present in case the parents or caregivers needed translation for clarification of the research project or had any questions and concerns.

After each observation, the observers recorded qualitative field notes that included descriptive, methodological, and interpretive annotations of the observation. The field notes were utilized to further explain and provide depth of information for the coded observations with each focal child. For methodological field notes, the observers noted their process of data collection throughout the observation.

The parents of the focal child also completed a demographic survey after the three observations were conducted. Within the demographic survey, information was collected on the number of people living in each household and the parent's perceptions of their homes and whether they thought their homes were crowded.

Codes and Definitions

Crowding Variable. The standard definition of crowding used in previous research states that residential crowding occurs when there are more than two people/room in a household (Evans, et al., 2000). For this study, three crowding variables were used: people per rooms in a household, average number of people present in an observation, and parents' perception of crowding. The crowding variable of average people/observation was created from the methodological notes in each observation. The number was calculated by counting the number of people in the beginning of the observation and the number of people present during each interval the child was observed indoors. Averages were calculated for the total number of people, adults,

and children in an observation. Within each 45-minute segment, I identified the range of people present in the observation and took the median to form an average score. For each data point, I assessed the number of people present across the 540 data points for each observation. The count did include the number of observers/researchers and translators, but did not include the focal child, as that was a constant. For each participant, the order of the morning, afternoon, and evening observations varied. The crowding variable of the ratio of people in a household was computed by taking the number of people that lived in the household divided by the rooms in a household for each participant. The crowding variable of parent perception was created by tallying the responses to “do you think your home is crowded?” as a Yes or No response for each participant.

Child Behaviors

Two child behavioral variables were created: distress and positive social. The child behavior variables were pro-rated according to the number of intervals the child was observed indoors. The observation codes that apply to these variables were aggregated in a statistical program SPSS 18.0 to constitute each variable. However, in order to prevent over-coding, each code must be mutually exclusive. If two or more codes occurred simultaneously, the code was only counted as occurring once.

Distress. In this study, distress behaviors include any aggressive (physical and non-physical) interactions with any person. This would include a reaction to fighting with a sibling for a toy or resource or initiating an aggressive interaction such as hitting, punching, biting, tackling, fussing at or yelling at an individual. Distress behaviors include a focal toddler (1 year-3 years) aggressing toward others (physically and non-physically) or fussing at individuals.

Infants (aged 3 months-1 year) were coded as distressed if they were expressing signs of distress toward individuals including fussing or crying at an individual. The distress variable was created by combining the following codes: fussing, crying, and acting negativistic toward others. Since the codes (fuss, cry, negativistic) were not mutually exclusive, when they occurred simultaneously, it was counted as one instance of distress. Aggression was rare and thus it was not included in the distress variable.

Positive Social. In the current study, positive social behaviors included interactions with individuals that promote positive affect or positive affect responses or initiate a positive social interaction. This included responding to an individual with a smile or laugh, initiating physical and non-physical affect such as hugging or caressing an individual. This also included offering resources or toys to other individuals within the environment. In order for these codes to qualify as positive social engagement, they had to occur in the absence of fussing or negativistic or aggression, or in response to aggression. The positive social behavior variable was created by combining any instance a child was observed smiling, offering objects to another person, playing, and laughing. The codes (smile, offer, play, laugh) were not mutually exclusive; therefore when they occurred simultaneously, it only counted as one instance of positive social, rather than two instances.

Withdrawal. The withdrawal variable was not included in the quantitative observation data analysis because the observed codes did not indicate behaviors of withdrawal, but qualitative methodological field notes of withdrawal were noted. In this study, withdrawal was considered as a social behavior in which a focal child specifically ignored stimulation or left a room of crowded people to play/occupy oneself in a room with fewer people.

Analysis

Due to the small sample size, the focus of the analysis was on description and exploration of patterns of crowding variables and child behaviors. Although inferential statistics were used, significant effects ($p < .05$) were interpreted with caution. Basic demographic information including child age, gender and household characteristics were provided in Table 1.

Crowding. There were three crowding variables included in quantitative analysis: persons per room, crowding perceptions, and observation crowding. The first phase of the analysis included assessing the extent to which homes are crowded. In order to assess the extent to which homes were crowded in this study, a table of descriptive statistics was created for the three variables of crowding including the ratio of the number of people living in the home to the rooms in the home, the perceptions of crowding ($Y=1/N=0$), and the number of people in an observation for each participant. The overall Means, and Standard Deviations were provided (see Table 1) across all of the participants and provided basic statistical representation of the mean number of people across the observations and living in the home.

Paired samples t-test was conducted for each of the combinations of crowding variables to compare the variables. First, a t-test compared the perception of crowding and the ratio of number of people/room in a household. The second t-test compared the ratio of number of people/room in a household and the average number of people in an observation. The third t-test of the crowding variables compared the perception of crowding and the number of people in an observation.

The qualitative variable of crowding included the perceptions of crowding from the demographic survey. The answers to the demographic questions “Tell me about a time when

your home was crowded” were analyzed using constant comparative method and separating the answers into themes. The answers were characterized and organized according to the themes and presented in the table of crowding variables. The demographic survey questions were analyzed by constructing themes of the answers provided for the questions. Once themes were constructed, another coder analyzed the questions and the themes were compared between coders. The inter-coder reliability for the responses to “do you think your house is crowded; why do you feel this way” was 94%. For the responses to “tell me a time when your house was crowded, the inter-coder reliability was 86%. A table was created with the themes and the number of participants who answered according to the themes (see Table 5).

Descriptive tests for the participants’ behaviors (Distress and Positive Social) and the crowding variables (ratio of people/household, average number of people over observations 1-3, and perceptions of crowding) were calculated and summarized in a table. The descriptives are presented in Table 2 for the participants (N=21) by gender and by age category: infants (3 months-18months)/toddlers (18months-35 months). A t-test and t-statistic was included in the analysis to compare the number of people present during the time of day for the age groups: infants (3 months-1 year) and toddlers (1 year-3 years).

Overall Child Behaviors. The variables of child behavior in this study included distress, withdrawal, and positive social. In order to understand the average observed child behaviors, descriptive statistics, such as the means and standard deviations of distress behaviors and positive social behaviors were conducted to indicate the average behaviors across the observations for both infants and toddlers and boys and girls. The variables distress and positive social were tested for inter-rater reliability between coders. For distress, the Cohen’s kappas

included an agreement of 1.00 for fuss, 0.99 for negativistic, and 1.00 for cry. For the positive social variable, the agreement between coders was 0.98 for play, 1.00 for laugh, 0.98 for smile, and 1.00 for proffer.

Child Behaviors and Crowding. In order to understand the relationship between the crowding variables and child behavior, two multiple linear regressions were conducted, with the dependent variable as child behaviors and three independent crowding variables (number of people/room in a household, average number of people in an observation, and perception of crowding). One multiple linear regression was conducted to look at the effects of the three crowding variables (ratio of people/household, average number of people in observations 1-3, and the crowding perception) on distress and one multiple linear regression was conducted to look at the effects of crowding variables on pros-social behaviors. This analysis model was used to explain the effects of the three crowding variables on child behaviors in this sample. I looked at the issue of multicollinearity with the independent variables and found no problem with the independent variables of crowding and multicollinearity.

Chapter 4.

Results

Child Behaviors

Focal children (N=21) expressed positive social behaviors 54.08% ($SD=23.74$) of the time they were observed in the house, which was more frequently than distress behaviors, $M=3.24$, $SD=1.94$. The results of a paired samples t-test show that behaviors of distress and positive social ($t(20)=9.50$, $p \leq .0001$, two tailed, 95% CI= 39.68 to 61.99) have significantly different means.

Child Behaviors According to Sex

Table 1

Boys and Girls Behaviors and Crowding Variables

Variables	Boys		Girls	
	n	<i>M (SD)</i>	n	<i>M (SD)</i>
Child Behaviors				
Distress	7	4.84 (1.73)	14	2.43 (1.54)
Positive Social	7	33.08 (29.28)	14	64.58 (10.72)
Crowding Variables				
Crowding Perception	7	0.43 (0.54)	13	0.15 (0.38)
Ratio (People: Rooms)	6	0.76 (0.17)	13	1.06 (0.27)
People in Observations	7	5.03 (1.00)	14	5.41 (1.49)

Note: The means for the child behaviors represent the percent of time the behavior occurred when the child was observed in their home.

Boys (N=7) expressed distress 4.84% of the time they were observed indoors ($SD=1.73$), which was more frequently than girls (N=14, $M=2.43$, $SD=1.54$) and the difference between the means was significant, $t(19)=3.24$, $p=.004$, two tailed, 95% CI= .85 to 3.96.

The difference between the means was significant for positive social behaviors ($t(6.82)=-2.8$, $p=.029$, two tailed, 95% CI= -58.8 to -4.32); Girls ($M=64.58$, $SD=10.72$) expressed positive social behaviors more frequently than boys, $M=33.08$, $SD=29.28$. Levene's test ($F=14.63$, $p=.001$) for the positive social behavior suggests that equality of variance was violated, therefore reports of positive social behavior were provided for equal variances not assumed.

Child Behaviors According to Age

Table 2

Infant and Toddler Behaviors and Crowding Variables

Variables	Infants		Toddlers	
	n	<i>M</i> (<i>SD</i>)	n	<i>M</i> (<i>SD</i>)
Child Behaviors				
Distress	10	4.05 (1.63)	11	2.50 (1.98)
Positive Social	10	39.11 (25.58)	11	67.68 (10.51)
Crowding Variables				
Crowding Perception	9	0.44 (0.53)	11	0.09 (0.30)
Ratio (People: Rooms)	8	1.01 (0.30)	11	0.94 (0.27)
People in Observations	10	5.39 (0.98)	11	5.18 (1.63)

Note: The means for the child behaviors represent the percent of time the behavior occurred when the child was observed in their home.

Infants ($N=10$, $M=4.05$, $SD=1.63$) and toddlers ($N=11$, $M=2.50$, $SD=1.98$) exhibited distress for similar amounts of time.

Toddlers expressed positive social behaviors 67.68% ($SD=10.51$) of the time they were observed indoors, which was more frequently than positive social behaviors for infants ($M=39.11$, $SD=25.58$) and the difference between the means was significant, $t(11.72)=-3.29$, $p=.007$, 95% CI=-47.54 to -9.59. Levene's test ($F=12.21$, $p=.002$) suggests that the equality of variance was violated; therefore, reports of positive social behavior were provided for the equality of variances not assumed.

Crowding Variables

Since two of the crowding variables have not been previously studied according to this methodology, the crowding variables were compared using t-tests. Paired t-tests were conducted for the three crowding variables (crowding perception, ratio of people/household, and the

average number of people in observations 1-3). The results suggest that the three crowding variables are significantly different variables. The first pair of crowding perception and the ratio of people per room in a household ($t(17)=-6.93, p \leq .0001$), the second pair of crowding perception and the average number of people in observations 1-3 ($t(19)=-14.84, p \leq .0001$), and the third pair was the ratio of people per room in a household and the average number of people in observations 1-3, $t(18)=-14.06, p \leq .0001$.

Crowding Perception

Overall, 25% of parents perceived their homes as crowded, $SD=0.44$. One participant did not answer the question to the survey (Do you think your home is crowded?) and was therefore not included in the analysis.

Ratio of People/Household

Overall, the mean ratio of people per rooms in a household ($N=19$) was 0.97 ($SD=0.28$), which shows that most of the households had less than one person per room. Two participants did not state the number of rooms in the household, and were not included in the analysis.

Average People In Observations

Table 3

Average number in Observations

Observations:	1		2		3		1-3	
	<i>M</i> (<i>SD</i>)	<i>V</i>	<i>M</i> (<i>SD</i>)	<i>V</i>	<i>M</i> (<i>SD</i>)	<i>V</i>	<i>M</i> (<i>SD</i>)	<i>V</i>
All People	4.63 (1.01)	1.06	5.26 (1.65)	2.75	6.20 (3.21)	10.30	5.28 (1.33)	1.78
Adults	3.90 (0.71)	0.51	4.07 (0.76)	0.58	3.91 (1.57)	2.52	3.97 (0.56)	0.32
Children	0.73 (0.27)	0.39	1.18 (1.35)	1.82	2.19 (2.19)	4.79	1.31 (0.98)	0.96

Note: The order of the observation time (morning, afternoon, evening) of the observations varied among participants. Observation 1 refers to the morning observation and Observations 2 and 3 refer to the afternoon and evening observations. Means represent the average number of people in an observation and across observations for participants 1-21. One participant did not have an observation 3, so N=20 for observation 3.

Child Behaviors and Crowding Variables

Table 4

Regression Table for Child Behaviors and Crowding Variables

Variables	<i>R</i> ² (adjusted)	<i>SE</i>	<i>p</i>	<i>Beta</i>	<i>p</i>
Distress	.198 (.026)	1.98	.364		.048
Crowding Perceptions Ratio (People/Room)				.090	.729
People in Observations				-.524	.086
Positive Social	.421 (.297)	19.17	.048		.002
Crowding Perceptions Ratio (People/Room)				-.684	.007
People in Observations				.058	.814
People in Observations				-.354	.186

1. The first hypothesis is that children in crowded social microenvironments, or crowded homes will exhibit more distress behaviors toward others (those in their social environment).

It was hypothesized that children in crowded social microenvironments or crowded homes would exhibit more distress behaviors. Results of a multivariate regression indicate that there was no statistically significant relationship between the crowding variables on the behaviors of distress. Therefore, behaviors of distress were not predicted by the crowding variables of ratio of people/rooms, average number of people in observations 1-3, and crowding perception. The multivariate regression indicated that children's positive social behaviors were predicted by the crowding variables, $F=3.397$, $p=.048$. In particular, the parental perception of having a crowded household was negatively associated with positive social behaviors, $B=-.684$, $p=.007$.

It was hypothesized that children of parents who perceive their homes as crowded will exhibit more distress social behaviors and less positive social behaviors. Since parenting practices are culturally informed, it is hypothesized that the parents' perceptions of the social environment will influence their children's behaviors in an environment. The results of the multivariate regression suggest that children's positive social behaviors were related to their parents' perception of a crowded environment, but not the children's distress behaviors. The t-test results suggest that there are not significant differences between the means of distress and positive social behaviors according to crowding perception. However, the bivariate regression results suggest that parental perceptions of the environment predicts positive social behaviors, $F=10.936$, $p=.004$.

It is hypothesized that children observed with more people present during an observation would exhibit distress behaviors. The bivariate regression results indicate that the average number of people in observations 1-3 did not predict the distress behaviors.

Description of Withdrawal Variable in observation crowding

It was hypothesized that children in crowded homes or crowded social environments would either be withdrawn or negativistic toward social stimulation. There was only one instance of a child withdrawing during an observation. The child showed signs of “withdrawal” by retreating from a room with 15 people in the room to a room with no social actors in the room. The observation included many home visitors, both adults and children. This is worth noting, considering the child expressed behaviors of fussing and distress before exiting the social environment. When the child left the room, she found a water bottle on the ground and sat quietly, playing with the water bottle in the middle of the floor.

Crowding Perceptions and Definitions

It was hypothesized that is that there would be a difference in the Burundians’ perceptions of crowding and the standard definition used to measure crowding of more than 1 people/room. Results from thematic analysis in demographic survey questions reveal that Burundian parents conceptualize crowding to include themes such as family vs. non-family, space/house size.

Table 5

Frequency of Themes: “Do you think your house is crowded, why do you feel this way?”

Themes	Yes	No
Own Family	4	1
Big Family	0	1
Small Family/Not Many	4	0
House is Big Enough	3	0
Makes me Happy	1	0
Not Enough Space	0	2

Note: The numbers represent the frequency of the themes for those who answered “yes” and those who answered “no.” Some participants did not answer the question “why do you feel this way” and therefore were not included in the analysis. Also, some people provided answers that fell into two themes.

Three themes emerged for those who answered “yes” to the question “Do you think your house is crowded.” The themes included own family, big family, and not enough space. For *own family*, the description a participant provided included “it is our own family, it is ok,” suggesting that even though they thought their house was crowded, it was manageable because everyone in the house is family. The theme *big family* includes a description that the number of people in the family made them feel that their home was crowded. The final theme *not enough space* suggested that those participants considered their homes crowded due to constrictions in space. The results indicate that for those who think their home is crowded, they feel that it was crowded due to spatial constriction and a large number of family members.

For those who did not think their house is crowded, responses included themes of *own family*, *small family/not many*, *house is big enough*, and *makes him/her happy*. The theme *own family* included descriptions of “it is my own children,” another response includes “it is normal, we are family” and “it is my family; it is my kids.” The theme of *small family/not many* included responses that there were not many people living in the house. The theme of *the house is big enough* suggested their responses were based on their description of the space in the house. One individual stated “it makes me happy” with a lot of people in his home.

Table 6

Frequency of Themes from “Tell me a time when your house was crowded...”

Themes	Number
Big House	1
Too Many People	2
Not my Family	3
Visitors	4
Never Crowded	6
Total	15

Note: The number represents the frequency of the themes. Some participants (n=6) did not answer the question “tell me a time when you felt your house was crowded,” and were not included in the analysis.

For the description of “tell me a time when your house was crowded,” five themes emerged: big house, too many people, not my family, visitors, and never crowded. The most frequent response was that they never thought their house had been crowded. The second most frequent response was that the participants felt that when they had visitors, they felt their house

was crowded. The response of not my family suggests that when there are non-family members in the house, the participants consider their home crowded.

Overall, the answers to the demographic interview questions reveal that Burundian refugees not only consider the number of people in a household as crowding, but they also take into consideration whether the people are family members or non-family members. Based on the qualitative thematic analysis, of the Burundians who did not consider their homes as crowded, 5 participants had people/room household ratios of over 1.0. These participants fall under the theme of own family, which suggests that even though there are more than 1 person/room in the household, they do not consider the house crowded because they are family members.

Chapter 5.

Discussion

The current study looked at the effects of three crowding variables: the number of people/rooms in a household, the average people in an observation, and the crowding perception, on the child behaviors of distress and positive social. According to the Bioecological model of human development, context influences social interactions and child behaviors (Bronfenbrenner, 2006). It was predicted that children who live in homes with more people/room in a household and those who had more people in an observation would exhibit signs or behaviors of distress. Other studies suggest negative effects of residential crowding on child behavior in western (Evans, Lercher, & Kofler, 2002) and non-western cultures (Evans, Lepore, & Allen; 2000; Ani, & Grantham-McGregor; 1998). In this study, the results of bivariate regressions suggest that the ratio of people/rooms in a household did not explain or predict behaviors of distress or positive

social behaviors and the average number of people in observations also did not predict child distress behaviors.

These results are not consistent with the literature on the effects of crowding on child behaviors. Contextual factors such as the number of people per room in a household have affected child and adult behaviors in past studies (Evans, Lepore, & Allen, 2000; Ani, & Grantham-McGregor, 1998). However, contextual factors such as the number of people in an observation and the number of people per rooms in a household did not predict child behaviors in this particular refugee sample, possibly because this refugee population does not consider their environments crowded and may define crowding differently than the contextual definitions. If an individual does not perceive their environment as crowded, according to the contextual definitions of the number of people per room in a household and the number of people in an observation, then he will not behave as though the environment is crowded. Therefore, current contextual definitions of crowding may not apply to this particular group of refugees.

Overall, toddlers expressed more positive social behaviors than the infant group. This finding is consistent with the child development literature, suggesting that there is an increase in social interactions as children develop more social competencies (e.g., Crick & Dodge, 1994; Eisenberg, Fabes, Guthrie, & Reiser, 2000). There was only one distinct account of a child behavior of withdrawal, which suggests that an observation with more people could predict child behaviors of withdrawal. This observation had a larger number of people compared to other observations. However, this behavior of withdrawal was based on one observation for one participant, and is therefore not conclusive of the effects of context on child behaviors of withdrawal.

It was hypothesized that children of parents who perceived their house as crowded would exhibit behaviors of distress. However, the results suggest that the perception of crowding predicted positive child behavior, but not distress behavior. For those who did not think their homes were crowded, the children exhibited high rates of positive social behavior. For those who did think their home was crowded, the children exhibited low rates of positive social behavior. It is possible that the parental perception of crowding could be informed by broader factors such as the parents' life satisfaction and outlook toward their post-migration environment. Even though a family may have more than 1 person per room in their home, they may not perceive it as crowded, and therefore do not behave in ways that facilitate child distress (e.g., high stress). As the parents have experienced recent migration from refugee camps, which may have had contextual crowding (Lustig, 2010), the post-migration context could have been perceived as a positive environment and may be generally more happy and positive with their lives in the pre-migration context. If a parent perceives his or her life in a positive way, this encourages positive parenting and interactions with their children, which eventually influences positive child behaviors (Eisenberg, et al., 2005). Since parents' perceptions predicted positive child social behavior and not distress behaviors, then the parents could be interacting with their children in a positive manner, thus instilling positive social behaviors in their children. However, this hypothesis cannot be tested by the data from this study, since data on parents' general outlook and life satisfaction were not collected.

Although the contextual variables of the people/rooms in a household and the number of people in an observation did not predict child behaviors, the parents' perceptions of the environment predicted child positive social behaviors. This is consistent with the Bioecological

model's concept of the microsystem and social interactions with parents that influence child behavior. In accordance with the literature on the perception of crowding (Evans, Lepore, & Allen, 2000), perceptions of residential crowding seem to predict the behaviors of children living in the home. Parent perceptions of residential crowding did predict lower rates of positive social child behavior, therefore the results are consistent with previous literature on the perceptions of crowding negatively impacting child behaviors (Evans, Lepore, & Allen, 2000). These results also coincide with the literature on parental socialization of cultural values to children (e.g., Super, & Harkness, 2002; LeVine et al., 1994). Parents are key social actors in passing down cultural values and meanings to children. Since parents' perceptions predicted child behaviors in this study, it seems as though parents may have behaved differently due to their perceptions of crowding and thus influenced children's behaviors through their parenting practices. The Burundian parent perception predicted child behavior, rather than the contextual factors of crowding and context. Many East African cultures place a high emphasis on the sense of community and connectedness with kin (e.g., Konner, 1977; LeVine, et al, 1994). The Burundians in Knoxville may place high value in close kinship ties and, therefore, a crowded house that is full of family is thought of as positive and may therefore be a protective factor rather than connected to negative implications for child behavior.

The results of the qualitative interview questions to parents suggest that, in this study, Burundian's parent definition included crowding is more than just the number of people in a household; they also consider whether the person is a family member or not. Parents conceptualized crowding through themes of family membership, the presence of visitors, the number of people in a household, and spatial constriction. In this study, many of the respondents

did not feel that their house was crowded, even though they had a people/room ratio of greater than one. Their descriptions of crowding suggest that crowding is not merely just the number of people in the household or the space in a household, but the familial connection or kinship that matters in identifying a crowded situation. As predicted, the Burundians in this study defined crowding differently from the standard definition of number of people/rooms in a house definition. The results of this study suggest that perceptions of crowding predict child positive social behavior and that the perceptions and definitions of crowding are different from the standard definition of the number of people/room in a household. The qualitative results in this study provide insight into the conceptualizations of crowding for this population of Burundian refugees. The conceptualization of crowding in this group includes identifying family relationship or kinship ties to the number of people in a household. This extends the previous definitions of crowding of the number of people/room in a household and specifies a familial-non-familial stipulation to the current definition. Since the Burundians in this study defined crowding differently than person/room in a household, there must be some cultural variation in the definition and perception of the construct of crowding. Various cultures' definitions may influence the way they not only define crowding, but perceive crowding and subsequently react to crowded situations through behaviors. The current literature has not explored the perceptions of crowding with this refugee population. Perceptions of crowding may be culturally-informed, and based on cultural values of physical context and social actors in an environment. Since it is evident by the results of this study that perceptions guide behaviors and that perceptions and definitions may vary, it is important for future studies on crowding to include methodologies of obtaining perceptions of crowding.

Implications

Many Burundian refugees in Knoxville live in government housing developments and are exposed to environmental risks of low SES standards of living, such as crowding. Although crowding has been measured in diverse populations such as Nigeria (Ani & Grantham-McGreggor, 1998), India (Evans, Lepore, Shejwal, & Palsane, 1998), and South Africa (Goduka et al., 1992), studies have not looked at naturalistic child behaviors, particularly aged 3 months-35 months, in relation to crowded homes and crowding social situations. Since early social interactions influence later child socio-emotional development, this study enhances the literature on young children and the influences of parental-child interactions. The perceptions of the parents, not the contextual variables of crowding, predicted the positive social behaviors in children aged 3 months-35 months. The results of the current study suggest the importance of parental influence on child behaviors. Parental perceptions predicted social behaviors, so there may be a mechanism by which parents instill their attitudes and values to their children. Therefore, it would be useful for future studies to explore the processes of parent-child interactions in this Burundian refugee population.

The naturalistic observation methodology also expands the exploration of conflict. Previous studies suggest that residential crowding increases family conflict (Evans, Lercher, & Kofler, 2002; Evans, Lepore, & Allen, 2000), based on parental or child report. Although retrospective accounts of conflict are influential in determining child behavior trends, the naturalistic observations obtained direct report of child social interactions with anyone in their micro-social environment. Therefore, if conflict is present, there are more detailed accounts rather than retrospective accounts. This methodology of naturalistic observations enables the

observer to directly measure child behaviors and social interactions at a specific time, and provides a detailed description of who the conflict was with and the behaviors associated with the event of conflict, rather than other methodologies that explore the retrospective behaviors, that lack the time-specific detail of the conflict. However, with this methodology of direct naturalistic observations, conflict that does not occur during the observed period of time is not accounted for. Therefore, naturalistic observations may miss some instances of conflict that can be presented in retrospective methodologies.

Also, this study considered three quantitative crowding variables; the ratio of the number of people/household, the average people in an observation, and the crowding perceptions. The current study expands the crowding literature and the conceptualizations of crowding to not only consider the contextual concept of people/room in a household, but to consider the perceptions of the individuals. Along with Evans Lepore, and Allen (2000), this study expresses the importance of perception in crowded contexts. This study provides insight to the way people contextualize crowding, as there may not be one universal definition of crowding of more than one person/room in a household, but the definition and conceptualization of crowding may be more complex and culture-specific. This study expands the current literature on the influence of context and human behavior in post-migration refugees. The previous literature on refugees does not specifically identify post-migration contextual issues that may predict behaviors and perceptions of refugee populations. In the current study, the contextual issues of crowding did not predict child behaviors, but the parental perception of crowding did predict child positive social behaviors. Therefore, future studies on the effects of crowding on post-migration refugee behavior should implore more diverse methodology to include perceptions of individuals.

This study expands the knowledge of Burundian refugee children's socio-emotional development and behaviors. This study provides insight to the behaviors of children aged 3 months-35 months in this population, which has never been studied in this refugee population. Not much is known on this age group in the refugee populations and the effects of context on young migrants or refugees. It is important to consider the younger refugee populations, those aged 3 months-35 months, since their socio-emotional development and behaviors are influenced by the environment and socializations with those in their immediate social environment. The current study adds to the refugee child literature and the socio-emotional behaviors of young children. The current literature on refugee children primarily explores the mental health of older children and lacks the younger age groups of 0-5 years (e.g., Daud, Klinteberg, & Rydelius, 2008; Hepinstall, Sethna, & Taylor, 2004). Therefore, this study expands the literature on refugee children and their socio-emotional development and well-being.

This study could also have implications for agencies such as refugee services and post-migration placement services. Utilizing the results of this study, refugee services could gain a better understanding of the variability in family functioning from a perspective that there may be protective factors in contextual constructs such as crowding. Therefore, it could be beneficial for refugee services to consider newly arriving refugee families' cultural values when placing them into a post-migration home.

Limitations

One limitation to this study is that for the demographic interview questions, translation into Kirundi and English could have different meaning of concepts for crowding or different words used to describe crowding that do not translate to English. Although the survey was

constructed with the help of a translator for best interpretation and translation results, some of the participants could have misinterpreted the meanings of the questions. Some of the interviews were not completed with the primary caregiver and many of the fathers insisted that they would answer the questions, which could provide some conflicting or different answers if it was solely the primary caregiver.

Another limitation is that during some of the observations, the translator would often talk to the parents or primary caregiver during the observation, potentially interfering with possible daily routine activities and parent-child interactions. Also, in some observations, siblings or other individuals present within the house would “perform” or do things to show the researchers something, such as showing us their homework, talking to us, playing with the focal child. This could have potentially disrupted the normal routine. Also, some parents did not want us to follow the focal child if he or she went into a room or upstairs in the apartment or did not want us to watch the child being fed or bathed or diaper changed. In these observations, this limited the number of intervals a child was observed, potentially influencing the averages of people in an observation and behaviors.

Summary and Conclusions

This study provides insight into the overall child behaviors of a refugee child population aged 3 months-35 months, looked at the effects of crowding on child behaviors and explored parents’ perceptions of crowding. Overall, children expressed more positive social behaviors than distress behaviors. The current study found that parent perceptions of crowding predicted child positive social behaviors. Contextual measures of crowding, the number of people/room in a household and the average number of people in an observation, did not predict positive social

or distress behaviors. Since the parent perceptions predicted child behaviors, and not contextual factors of residential crowding, future studies should implore methodologies that gain the perceptions of the individuals. Also, in this study, the Burundian definition of crowding differed from the standard definition of more than one person per room in a household, therefore there may be cultural variation in the perception and conceptualization of crowding.

Future studies on the effects of crowding on child behaviors should implore a naturalistic observation and interview methodology to obtain direct accounts of child behaviors and perceptions of the environment, because it provides a description of specific child social interactions and behaviors, rather than retrospective accounts of their behaviors. Perceptions of crowding may be culturally-based and therefore, the conceptualization of crowding should be expanded to include cultural definitions of the construct. As future studies are conducted with different cultures, the construct of crowding will be more robust and will lead to better measurement of the construct.

List of References

- Ani, C.C., & Grantham-McGregor, S. (1998). Family and personal characteristics of aggressive Nigerian boys: Differences from and similarities with western findings. *Journal of Adolescent Health, 23*, 311–317.
- Baron, R.A. & Richardson, D.R. (1994). *Human Aggression* (2nd Ed). New York, NY: Plenum Press.
- Bates, D., Njororai, F., Ejike-King, L., & Rufyiri, C. (2011). *Healthy Transitions: Using a community based participatory research approach with Burundians with refugee status*. Unpublished manuscript.
- Berry, J.W. (2001). A psychology of immigration. *Journal of Social Issues, 57*(3), 615-631.
- Bornstein, M.H. (2002). *Handbook of Parenting: Children and Parenting, Vol 1* (2nd Ed). New Jersey: Lawrence Erlbaum Associates.
- Bradley, R.H., & Corwyn, R.F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*, 371-399.
- Bronfenbrenner, U. (2006). The bioecological model of human development. In W. Damon & R.M. Lerner (Eds.). *Handbook of Child Psychology. Vol. 1: Theoretical Models of Human Development*, (6th Ed, pp. 793-828). New York: Wiley.
- Brophy-Herb, H.E., Schiffman, R.F., Bocknek, E.L., et al. (2011). Toddlers' social-emotional competence in the contexts of maternal emotion socialization and contingent responsiveness in a low-income sample. *Social Development, 20*(1), 73–92.
- Coldwell, J., Pike, A., Dunn, J. (2006). Household chaos-links with parenting and child behavior. *Journal of Child Psychology and Psychiatry, 47*(11), 1116-1122.

- Corapci, F., & Wachs, T.D. (2002). Does parental mood or efficacy mediate the influence of environmental chaos upon parenting behavior? *Merrill-Palmer Quarterly*, 48(2), 182-201.
- Crick, N.R., & Dodge, K.A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin*, 115(1), 74-101.
- Daud, A., Klinteberg, B.a., & Rydelius, P.A. (2008). Resilience and vulnerability among refugee children of traumatized and non-traumatized parents. *Child and Adolescent Psychiatry and Mental Health*, 2(7), 1-11.
- Dodge, K.A., Pettit, G.S., & Bates, J.E. (1994). Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Development*, 65(2), 649-665.
- Dumas, J.E., Nissley, J., Nordstrom, A., Smith, E.P., Prinz, R.J., & Levine, D.W. (2005). Home chaos: Sociodemographic, parenting, interactional, and child correlates. *Journal of Clinical Child and Adolescent Psychology*, 34(1), 93-104.
- Eisenberg, N., Fabes, R.A., Guthrie, I.K., & Reiser, M. (2000). Dispositional emotionality and regulation: Their role in predicting quality of social functioning. *Journal of Personality and Social Psychology*, 78(1), 136-157.
- Eisenberg, N., Zhou, Q., Spinrad, T.T., Valiente, C., Fabes, R.A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development*, 76(5), 1055-1071.
- Evans, G. W. (2006). Child development and physical environment. *Annual Review of Sociology*, 21, 423-451.

- Evans, G.W., Stalzman, H., & Cooperman, J.L. (2001). Housing quality and children's socioemotional health. *Environment and Behavior*, 33, 389-399.
- Evans, G.W., & English, K. (2002). The environment of poverty: Multiple stressor exposure, psychophysiological stress, and socioemotional adjustment. *Child Development*, 73(4), 1238-1248.
- Evans, G.W., Gonnella, C., Marcynyszyn, L.A., Gentile, L., & Salpekar, N. (2005). The role of chaos in poverty and children's socioemotional adjustment. *Psychological Science*, 16(7), 560-565.
- Evans, G.W., & Kantrowitz, E. (2002). Socioeconomic status and health: the potential role of environmental risk exposure. *Annual Review of Public Health*, 23, 303-331.
- Evans, G.W., Lepore, S.L., & Allen, K.M. (2000) Cross-cultural differences in tolerance for crowding: Fact or fiction? *Journal of Personality and Social Psychology*, 79(2), 204-210.
- Evans, G.W., Lepore, S.L., Shejwal, B.R., & Palsane, M.N. (1998). Residential crowding and children's well-being: An ecological perspective. *Child Development*, 69(6), 1514-1523.
- Evans, G.W., Lercher, P., & Kofler, W.W. (2002). Crowding and children's mental health: The role of house type. *Journal of Environmental Psychology*, 22, 221-231.
- Evans, G.W., Rhee, E., Forbes, C., Allen, K.M., Lepore, S.J. (2000). The meaning and efficacy of social withdrawal as a strategy for coping with chronic residential crowding. *Journal of Environmental Psychology*, 20, 335-342.
- Fouts, H. N., Roopnarine, J. L., & Lamb, M. E. (2007). Social experiences and daily routines of African American infants in different socioeconomic contexts. *Journal of Family Psychology*, 21(4), 655-664.

- Georgiades, K., Boyle, M.H., & Duku, E. (2007). Contextual influences on children's mental health and school performance: The moderating effects of family immigrant status. *Child Development, 78*(5), 1572-1591.
- Goduka, L., Poole, D., & Aotaki-Phenice, L. (1992). A comparative study of black South African children from three different contexts. *Child Development, 63*, 509-525.
- Hart, S.A., Petrill, S.A., Deckard, K.D., & Thompson, L.A. (2007). SES and CHAOS as environmental mediators of cognitive ability: A longitudinal genetic analysis. *Intelligence, 35*(3), 233-242.
- Heptinstall, E., Sethna, V., & Taylor, E. (2004). PTSD and depression in refugee children: Associations with pre-migration trauma and post-migration stress. *European Child & Adolescent Psychiatry, 13*(6), 373-380.
- Huang, K, Douglas M.T., Caughy, M.O., Feldstein, S., & Genevro, J. (2007). Mother-child conflict interaction in the toddler years: Behavior patterns and correlates. *Journal of Child and Family Studies, 16*(2), 219-241. DOI: 10.1007/s10826-006-9081-6.
- Keenan, K., & Shaw, D.S. (1994). The development of aggression in toddlers: A study of low-income families. *Journal of Abnormal Child Psychology, 22*(1), 53-77.
- Keller, H., & Otto, H. (2009). The cultural socialization of emotion regulation during infancy. *Journal of Cross-Cultural Psychology, 40*(6), 996-1011.
- Konner, M. (1977). Infancy among the Kalahari Desert San. In P.H. Leiderman, S.R. Tulkin, & A. Rosenfeld (Eds.). *Culture and Infancy: Variations in the Human Experience* (pp. 287-328). New York: Academic Press.

- Kupersmidt, J., Greisler, P.C., DeRosier, M.E., Patterson, C.J., & Davis, P.W., (1995). Childhood aggression and peer relations in the context of family and neighborhood factors. *Child Development, 66*(2), 360-375.
- Lanza, S.T., Rhoades, B.L., Greenberg, M.T., Cox, M. (2011). Modeling multiple risks during infancy to predict quality of the caregiving environment: Contributions of a person-centered approach. *Infant Behavior and Development, 34*, 390-406.
- LeVine, R. A., Dixon, S., LeVine, S., Richman, A., Leiderman, P. H., Keefer, C. H., et al. (1994). *Child care and culture: Lessons from Africa*. Cambridge, UK: Cambridge University Press.
- Lustig, S.L. (2010). An ecological framework for the refugee experience: What is the impact on child development? In G.W. Evans and T.D. Wachs (Eds.). *Chaos and Its Influence on Children's Development: An ecological perspective* (pp. 239-252). Washington, DC: American Psychological Association.
- Martini, T.S., Root, C.A., & Jenkins, J.M. (2004). Low and middle income mothers' regulation of negative emotion: Effects of children's temperament and situational emotional responses. *Social Development, 13*(4), 515-530.
- Matheny, A., & Phillips, K. (2001). Temperament and context: Correlates of home environment with temperament continuity and change, newborn to 30 months. In T.D. Wachs, & G.A. Kohnstamm (Eds.). *Temperament in Context* (pp.81-101). Mahwah, NJ: Lawrence Erlbaum Associates.

- Matheny, A.P., Wachs, T.D., Ludwig, J.L., & Phillips, K. (1995). Bringing order out of chaos: Psychometric characteristics of the confusion, hubbub, and order scale. *Journal of Applied Developmental Psychology, 16*, 429-444.
- Maxwell, L. (1996). Multiple effects of home and daycare crowding. *Environment and Behavior, 28*, 494-511.
- Maxwell, L., & Evans, G.W. (2000). The effects of noise on pre-school children's pre-reading skills. *Journal of Environmental Psychology, 20*, 91-97.
- Merali, N. (2002). Perceived versus actual parent-adolescent assimilation disparity among Hispanic refugee families. *International Journal for the Advancement of Counseling, 24*, 57-68.
- Nsameng, A.B., & Lamb, M.E. (1995). The force of beliefs: How the parental values of the Nso of northwest Cameroon shape children's progress toward adult models. *Journal of Applied Developmental Psychology, 16*(4), 613-627.
- Regoeczi, W.C. (2003). When context matters: a multilevel analysis of household and neighborhood crowding on aggression and withdrawal. *Journal of Environmental Psychology, 23*, 457-470.
- Roopnarine, J. L., Fouts, H. N., Lamb, M. E., & Lewis-Elligan, T. Y. (2005). Mothers' and fathers' behaviors toward their 3- to 4-month-old infants in lower, middle, and upper socioeconomic African American families. *Developmental Psychology, 41*(5), 723-732.
- Super, C. M., & Harkness, S. (1997). The cultural structuring of child development. In J. W. Berry, P. R. Dasen, & T. S. Saraswathi (Eds.), *Handbook of cross-cultural psychology:*

- Vol. 2. Basic processes and human development* (2nd ed., pp. 1-39). Boston, MA: Allyn & Bacon.
- Super, C.M., Harkness, S. (2002). Culture structures the environment for development. *Human Development, 45*, 270-274
- Trivers, R.L. (1974). Parent offspring conflict. In *Ecology and evolution of social organization. American Zoology, 14*(1), 249-264.
- UNFPA (2010). United Nations: Population Fund: State of the World Population 2010. Living without an anchor: refugees and the internally displaced (chap 6). pp 69-75.
- Wachs, T.D., & Corapci, F. (2003). Environmental chaos, development and parenting across cultures. In C. Raeff & J. Benson (Eds.). *Social and Cognitive Development in the Context of Individual, Social, and Cultural Processes*, New York: Routledge.
- Wachs, T.D., & Evans, G.W. (2010) Chaos in context. In G.W. Evans and T.D. Wachs (Eds.). *Chaos and Its Influence on Children's Development: An ecological perspective* (pp. 3-15). Washington, D.C: American Psychological Association.
- Weine, S.M., Hoffman, Y., Ware, N., Tugenberg, T., Hakizimana, L., et al. (2011). Secondary migration and relocation among African refugee families in the United States. *Family Process, 50*, 27-46.
- Weisner, T.S. (2010) Well-being, chaos, and culture: Sustaining a meaningful daily routine. In G.W. Evans and T.D. Wachs (Eds.). *Chaos and Its Influence on Children's Development: An ecological perspective* (pp. 211-224). Washington, D.C: American Psychological Association.
- Whiting, B. B., & Whiting, J. W. M. (1975). *Children of six cultures: A psycho-cultural*

analysis. Cambridge, MA: Harvard University Press.

VITA

Carole McAteer graduated with a Bachelor of Arts in Psychology, with a minor in Biology from Purdue University in May 2010. In 2010, she accepted a graduate assistantship at the University of Tennessee, Knoxville, Early Learning Center and a graduate student position in the Master's program in the Department of Child and Family Studies. She has focused her studies in refugee populations, particularly the Burundian refugees in Knoxville, as well as Kenyan populations in the slums of Nairobi. In November, 2011, as part of an NSF funded grant, she traveled as a graduate research assistant to Nairobi, Kenya and conducted field work for 3 weeks, working closely with an NGO *Orphans and Vulnerable Children* in Mlolongo and Athi River District, Kenya. Following graduation in May, 2012, she plans to continue the research project and conduct two months of field work research in Mlolongo, Kenya.