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For millions of Americans the choice between food for their family or allowing their young child to sit in a dirty diaper is a daily struggle. Across the United States, 9.1 million American families are living in poverty. For low-income families with young children, the cost of diapers is a significant expense for which there is no federal assistance. Families experience diaper need when they are forced to make decisions to reduce the allocation of household finances towards basic needs such as housing, utilities, food, or soap, to instead purchase diapers. The consequences of diaper need affect families economically, socially, physically, and emotionally.

Diaper banks work to address diaper need by providing low-income parents and caregivers with the basic need of diapers so that they may change their children's diapers as often as needed to achieve and maintain health and well-being. The peer-reviewed literature about diaper need and diaper banks is limited in quantity and scope.

Headquartered in Durham, North Carolina, the Diaper Bank of North Carolina provides local families in need with a supplemental supply of free, disposal diapers. Using a case study approach, this dissertation will examine the work of the Diaper Bank of North Carolina to meet diaper need in a community, assess the unmet needs of recipients and offer insights/recommendations to inform the work of diaper banks in other locations.

This dissertation documented a case study of diaper need in Durham County, North Carolina by triangulating qualitative and quantitative findings from a variety of data sources. Community-based organization staff members (n=9) and diaper recipient

families (n=15) participated in face-to-face interviews. Diaper recipient families (n=396) completed paper surveys at the time they received diapers.

It was estimated that 10,415 children under the age of four in Durham County were at risk for the experience of diaper need given their families' annual household incomes. Of these children, 982 were served by the diaper bank. Findings revealed that more than 60% of diaper recipients incorrectly reported that the Diaper Bank of North Carolina was sponsored by the government and/or diaper manufacturers rather than existing as a volunteer-run organization relying on community donations. Of diaper recipient families, 40% felt the quantity of diapers received was "not enough" whereas 60% of families felt the number was "just right." Families whose youngest child was older than 1 year of age or who did not experience diaper need after receiving a monthly supplemental supply of 50 diapers, were statistically significantly more likely to report the number of diapers received met their needs. Most families (77%), needed additional diapers beyond the supply provided, reporting a median of 13 additional diapers per child per month. Findings are relevant for communities looking to institute or modify services to address diaper need.

UNDERSTANDING DIAPER NEED IN UNDER-RESOURCED  
COMMUNITIES: A DURHAM COUNTY,  
NORTH CAROLINA CASE STUDY

by

Kelley Erin Carpenter Massengale

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## CHAPTER I

### INTRODUCTION

For millions of Americans living in poverty the choice between food for their family or allowing their young child to sit in a dirty diaper is a daily struggle. For low-income families with young children, the cost of diapers is a significant expense for which there is no federal assistance (Porter & Steefel, 2015). Families experience diaper need when they are forced to make decisions to reduce the allocation of household finances towards basic needs such as housing, utilities, food, or soap, to instead purchase diapers (Raver, Letourneau, Scott, & D'Agostino, 2010). The consequences of diaper need affect families economically, socially, physically, and emotionally (Porter & Steefel, 2015).

Diaper banks work to address diaper need by providing low-income parents and caregivers with the basic need of diapers so that they may change their children's diapers as often as needed to achieve and maintain health and well-being. The peer-reviewed literature about diaper need and diaper banks is limited in quantity and scope. Headquartered in Durham, North Carolina, the Diaper Bank of North Carolina provides local families in need with a supplemental supply of free, disposal diapers. Using a case study approach, this dissertation examines the work of the Diaper Bank of North Carolina to meet diaper need in a community, assesses the unmet needs of recipients and offers insights/recommendations to inform the work of diaper banks in other locations.

The aims of the dissertation are to: 1) examine the relationship between diaper need and utilization of the diaper bank in the case community and 2) understand recipient families' experiences of diaper need.

### **Statement of the Problem**

In the United States, nearly half of all young children are from low-income families (Jiang, Ekono, & Skinner, 2015). When parents and caregivers of low-income children purchase diapers, they are often unable to employ cost saving measures available to middle and upper-income families (Porter & Steefel, 2015). For example, families with more available income often purchase diapers in bulk quantities, either online or at discount clubs, while low-income families may not have enough money saved to make bulk purchases, lack internet access for online ordering, operate in a cash-based economy rendering them unable to order products on-line, or may not be able to receive home delivery of orders placed online (Porter & Steefel, 2015). Low-income families without access to measures for costs savings spend as much as \$125 a month on diapers and often pay a higher cost per diaper compared to families with more income, paying 33% more for the same number of diapers (Porter & Steefel, 2015). For the poorest 20% of families in the United States, spending on diapers consumes 13.9% of household income compared to 2.8% of income for the middle 20% of families and only 1% of income for the richest 20% of families (Cashman, 2015).

Babies require up to 12 clean diapers daily while toddlers may use as few as six diapers a day (Porter & Steefel, 2015; Smith, Kruse, Weir, & Goldblum, 2013). Even though toddlers use fewer diapers daily, the cost per diaper increases as the size of the

diaper increases. Thus, families are unlikely to experience overall cost savings as the number of diapers used per day decreases. To acquire the number of diapers needed, families often ask family members, friends, or neighbors for diapers or money to purchase diapers (Massengale, Erausquin, & Old, 2016b). When these requests are frequent, they strain familial and social relationships (Massengale et al., 2016b).

In the face of diaper need, families are forced to apply unconventional strategies for addressing children's diapering needs including: prolonging the amount of time between diaper changes; using cloths, towels, or plastic bags instead of diapers; having a child wear no diaper at all; cleaning and reusing a soiled diaper; or using a diaper that is too large or too small (Massengale et al., 2016b). Ill-fitting diapers or skin contact with materials such as plastic that do not allow for air circulation may contribute to skin irritation. Diapers that are too large leak and require families to wash more laundry than usual. Extra laundry poses additional financial difficulties as families who experience diaper need also struggle to afford other nonfood basic needs such as soap and toilet paper (Massengale et al., 2016b).

The children of families experiencing diaper need often receive diaper changes at intervals less often than is recommended to maintain health (Raver et al., 2010). The diapers of newborns should be changed hourly while the child is awake and periodically during the night while infants require diaper changes every three to four hours (Shin, 2005). Children wearing soiled diapers maintain skin contact with urine and feces until the diaper is changed. The discomfort of a wet or soiled diaper leads babies and young children to cry or to become fussy or irritable (Porter & Steefel, 2015). Soiled diapers

also cause children to wake more often at night which can contribute to caregivers' stress and fatigue (Porter & Steefel, 2015). Dermatological problems (Adalat, Wall, & Goodyear, 2007; Clark-Greuel, Helmes, Lawrence, Odio, & White, 2014; Friedlander, Eichenfield, Leyden, Shu, & Spellman, 2009; Shin, 2005) as well as urinary tract infections (Sugimura et al., 2009) may occur because of the prolonged contact with urine and feces. North Carolina families having trouble providing enough diapers indicated that their children both experienced diaper rashes and were unhappy because of diaper need (Massengale et al., 2016b). Children's experiences of diaper rash contribute to parents' anxiety (Adalat et al., 2007). In addition, children who are sick often necessitate diaper changes more frequently than normal which may place additional strain on caregivers who need to budget for or acquire more diapers than usual. A study of low-income mothers found that those who displayed indicators of poor mental health (e.g. difficulty managing stress, sadness or depression, and/or or coping with trauma) were statistically significantly more likely to report diaper need than mothers without mental health needs (Smith et al., 2013).

If children attend daycare outside of their homes, their families are generally required to provide all the diapers needed for the duration of care, even if the tuition or cost of childcare is subsidized (Smith et al., 2013). Daycare facilities are generally required to meet state-mandated guidelines for the operation and licensure of childcare facilities. Among these guidelines, states often mandate a frequent interval for inspecting whether a diaper is wet or soiled (American Academy of Pediatrics, 2011). Therefore, parents are required to send more diapers to the childcare facility than they otherwise

might have elected to use at home during the same period of time. If parents or caregivers do not have enough diapers to send with the child to childcare, adults may be forced to stay home with the child (Massengale et al., 2016b; Raver et al., 2010). Thus, parents miss their own work, school, or job training obligations, which in turn has implications for families' income and educational opportunities (Massengale et al., 2016b; Smith et al., 2013). Compared to families with higher paying jobs, low-income families are less likely to have paid employment leave (Clemans-Cope, Perry, Kenny, Pelletier, & Pantell, 2008).

The intention of diaper banks is to provide a supplemental supply of diapers to families experiencing diaper need so that they can meet the basic need of diapers and experience fewer of the consequences of unmet diaper need. As a result of receiving diapers, recipient families experience a range of positive outcomes related to health, education, and household finances (Massengale et al., 2016b). However, little guidance exists for diaper banks on addressing barriers families may experience when accessing diaper bank resources or for determining the size of the supplemental supply families need. Examining the diaper bank in Durham County, the following research questions were pursued to examine ways in which the diaper bank can better meet the needs of the community and inform future research and efforts to address diaper need in other communities.

### **Research Questions**

Question #1a: What is the unmet diaper need among financially vulnerable families in Durham County, North Carolina?

Question #1b: What are diaper bank recipient families' perceptions of their local diaper bank and suggestions for improvement?

Question #2: What household characteristics influence families' satisfaction with the quantity of diapers in the supplemental supply received?

### **Overview of Methodology**

This dissertation employed case study methodology to document diaper need in Durham County, North Carolina from many sources of data. Research questions were analyzed using previously collected data along with new data collected during the fall of 2016. Individual manuscripts produced from this dissertation each utilized only some of the data sources analyzed during the case study.

Data previously collected were from October 2014 to July 2015 during a process evaluation of the Diaper Bank of North Carolina [*Principal Investigator* Kelley E. C. Massengale with *Faculty Mentor* Dr. Jennifer Toller Erausquin and funded by a University of North Carolina Greensboro Community-Based Research Grant]. During the mixed-methods multiphase process evaluation, diaper recipient families (n=150) responded to written survey questions about demographic characteristics, their experiences of diaper need, challenges of daily living, their satisfaction with the size and frequency of the supplement supply of diapers provided, and any outcomes experienced as a result of receiving diapers from the diaper bank. At the time these data were collected, the size of the supplemental supply was generally 25 diapers per month per child. To address research question #1a, descriptive statistics were calculated using data provided by the diaper bank's distribution records and publicly available population data.



To address research question #1b, the quantitative data collected from diaper recipient families during the process evaluation were analyzed using descriptive statistics.

To supplement existing data, diaper recipient families participated in brief face-to-face interviews (n=10) and completed brief surveys (n=246) at the time diapers were received. A one page survey was distributed during the fall of 2016 to recipient families to quantify on average, how many diapers families are short each month, document families' experiences of diaper need, and satisfaction with the quantity of diapers received. The data collected from these surveys were analyzed to address research question #2. Specifically, independent samples t-tests analyzed differences in families' monthly spending on diapers and the number of extra diapers needed. Next, chi-square tests and logistic regression analyses tested household characteristics associated with families' satisfaction with the quantity of diapers received. Then, thematic analysis of verbatim transcripts from the face-to-face interviews with diaper recipient families and community-based organization staff members who provide diapers from the diaper bank addressed research question #2 using qualitative data.

### **Definition of Terms**

1. Diaper need: the experience of having to choose between spending money on diapers and spending money on other basic needs such as food, rent, or utilities (Raver et al., 2010).
2. Diaper bank: an entity that provides a supplemental supply of free diapers to families in need, like the way that a food bank provides a supplemental supply of food items to families experiencing food insecurity.

### **Assumptions**

The dissertation was based upon the following assumptions: 1) families living within 200% of the federal poverty line are susceptible to diaper need based on their annual household income, 2) adults who were provided with diapers from the Diaper Bank of North Carolina needed them for children in their households, and 3) the supplemental supply of diapers helps families financially by allowing them to divert household income to other basic needs.

### **Limitations and Delimitations**

The data analyzed during this dissertation were collected from families in Central North Carolina. The results of this study provide insight into the local context, and while relevant for other communities, may not reflect unique circumstances of families experiencing diaper need outside of this locale. The completed study was cross-sectional, capturing participants' experiences at one point in time. However, our findings suggest experiences of poverty and diaper need may be fluid, changing as families' economic and household characteristics change over time.

Although the Diaper Bank of North Carolina served low-income families in 15 North Carolina counties at the time this dissertation began, this case study was bound to Durham County, NC. Durham County was selected because: 1) the organization was founded here therefore the diaper bank has been serving Durham County the longest and 2) Durham County community-based organizations receive more diapers than organizations in any other county.

Families invited to participate in a qualitative interview were chosen from a convenience sample of families receiving diapers at the time I or a research assistant was present to conduct interviews. Interviews took place at the two community-based organizations where families can receive diapers without enrollment in a formal program. This means that families who only receive diapers via home-based or formal community-based organization programming would not have been invited to participate in an interview. However, families are often eligible to (and some do) receive diapers from more than one organization each month, meaning that they could potentially be included in the convenience sample. As one of the goals of the interviews was to explore families' experiences receiving diapers and their suggestions for improvement, families receiving diapers for the very first time on the day of the interview were not eligible to participate. The process evaluation, the source of some of the data analyzed in this dissertation, intended to interview both English and Spanish-speaking families. However, challenges recruiting a native Spanish-speaking research assistant prevented the occurrence of any Spanish-language interviews. Although the families who participated in the interviews represent a range of experiences of diaper need, they do not represent all Durham County recipient families.

During the survey distributed in 2016, respondents were asked about their monthly spending on diapers. The dollar amount was divided by the number of children in the household wearing diapers to calculate household monthly spending on diapers per child. Porter and Steefel (2015) referenced a diaper manufacture's estimate that the

monthly cost of diapers may be as high as \$125 per child. Therefore, outlier estimates of monthly spending >\$125 per child were recorded as \$125.

### **Purpose of the Study**

The purpose of this study was to contribute to the scant peer-reviewed literature about diaper need and diaper banks by assessing the unmet diaper need in a case study of the local community, evaluating diaper recipient families' perceptions of the local diaper bank, and assessing families' satisfaction with the quantity of diapers received. Diaper banks operate with limited resources and except for a few cases, without any public funding. Determining how many diapers to provide a family experiencing diaper need would allow diaper banks to make better use of limited resources and allow for informed decision making about the size of the monthly supplemental supply of diapers to provide families. To date, many diaper banks have considered the finding from the industry study by Raver et al. (2010) that families are short on average, 12 diapers per week, when determining how many diapers to give. However, some families participating in our study revealed need for diapers beyond the 50 provided each month.

### **Significance of the Study**

The results of this dissertation are of interest not only to the Diaper Bank of North Carolina and its partner organizations who distribute diapers on behalf of the diaper bank, but also to the National Diaper Bank Network, an organization providing leadership and resources to more than 320-member diaper banks, and potentially to healthcare providers and community-based organizations that serve low-income families.

Within the field of public health, the findings of this dissertation expand the field of Maternal and Child Health and contribute to the broader understanding of health disparities. Families' household income, a social determinant of health, affects their access to healthcare and resources for healthy living (Pickett & Wilkinson, 2015), including diapers. Experiences of poverty during childhood are linked to negative health outcomes (Blair & Raver, 2016). Addressing basic needs, such as diapers, equips individuals and families to making healthy behavior changes (Thompson et al., 2016).

## CHAPTER II

### REVIEW OF THE LITERATURE

This dissertation explored a case study of diaper need in Durham County, North Carolina. The foundation for the research built upon literature on experiences of childhood poverty and lack of access to basic needs from the fields of: medicine, nursing, social work, nutrition, and public health. Given the dearth of research on diaper need and diaper banks, relevant literature on food banks provided a basis for comparison and a starting point for understanding diaper recipients' perceptions of the local diaper bank. Within the following literature review, the reader will find an explanation of the guiding theoretical framework, an overview of the general health consequences of childhood poverty and specifically, consequences of a lack of access to basic needs including diapers, an explanation of the operational model of diaper banks, and a description of potential barriers to accessing a community-based diaper bank. Finally, a justification of the current case study and implications for the research findings describe potential applications of the results.

#### **Theoretical Framework**

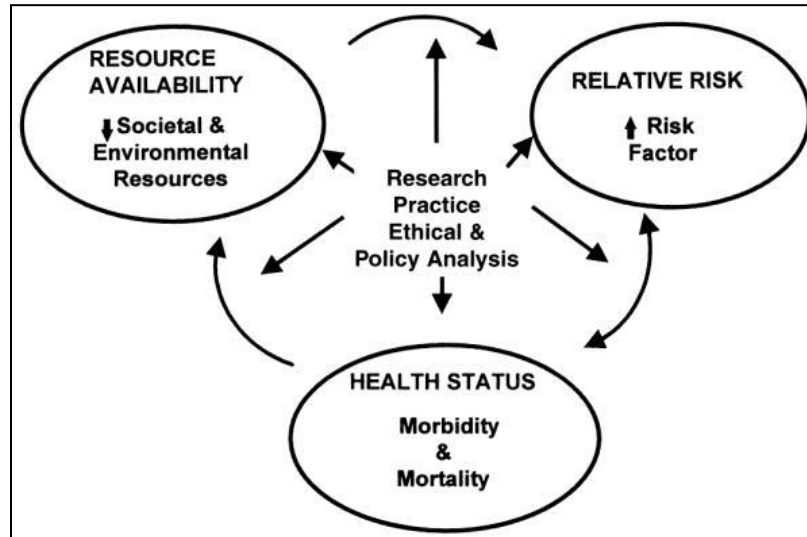
Recognizing that the entire community is responsible for the health of all citizens, Flaskerud and Winslow (1998) created the Vulnerable Populations Conceptual Framework to examine vulnerability due to poverty, stigmatization, and/or marginalization. The framework depicts the impact of research, practice, policy, and

ethics on the relationships between: health status, resource availability, and the relative risk of poor health among vulnerable populations (Flaskerud & Winslow, 1998). The Vulnerable Populations Conceptual Framework provided the theoretical framework for this study. In adopting this framework, the following constructs were defined: *health status* describes the negative health outcomes for both children and parents that may occur as a result of diaper need, *resource availability* represents both the basic need of diapers as well as access to the community-based organizations that distribute diapers on behalf of the diaper bank, and lastly, *relative risk* refers to the risk of diaper need consequences among low-income families compared to families without diaper need. In applying this framework, it was recognized that the relationships between these constructs are impacted by: federal policies which do not provide benefits for diapers, a dearth of research on diaper banks and diaper need, and the work of community-based diaper banks who distribute diapers to low-income families (Figure 1).

**Figure 1. Theoretical Framework**

Basic need of diapers and community-based organization partnerships developed to distribute diapers

Less access to diapers among low-income families with young children



Poorer health outcomes resulting from diaper need

**Conceptualizing Vulnerable Populations Health-Related Research.**  
Flaskerud, Jacquelyn; Winslow, Betty  
Nursing Research. 47(2):69-78, March/April 1998.

### **Childhood Poverty**

As a social determinant of health, income affects families' access to healthcare for prevention, health maintenance, and disease treatment, as well as access to healthy foods and safe spaces for physical activity (Pickett & Wilkinson, 2015). The relationship between socio-economic status and health is reciprocal (Mulatu & Schooler, 2002). Limited financial resources affect health status and access to health resources; health



status influences the ability to change one's socio-economic status and the cost of accessing health resources may drain financial resources. Children born into poverty or whose families experience poverty during their childhoods are at risk for a range of negative health outcomes. Poverty negatively affects children's brain development with brain differences observable as young as infancy between children living in poverty and those who are not (Blair & Raver, 2016). Substandard housing exposes children to environmental pollutants that increase the risk of asthma or lead poisoning (Tyler, Conroy, Fu, & Sandel, 2011). Childhood experiences of poverty, including a lack of access to basic needs, have been linked to experiences of homelessness in adulthood (Koegel, Melamid, & Burnam, 1995). Socio-economic status and health in childhood influence these same factors in adulthood (Palloni, Milesi, White, & Turner, 2009).

Increasingly, healthcare providers are called upon to recognize the social determinants of health that affect their patients (Chung et al., 2016). However, a review of the screening tools created for healthcare providers to assess patients' social determinants of health reveals a lack of screening for families' access to nonfood basic needs such as diapers, soap, or toilet paper (Chung et al., 2016). Further, a study of healthcare providers found that while the majority felt it was within their purview to address patients' social determinants of health, most lacked sufficient training to ask patients about their needs and to connect them to relevant resources (Naz, Rosenberg, Andersson, Labonté, & Andermann, 2016).

In the United States, federal safety net policies exist to allow eligible citizens access to basic needs such as: housing through federally funded public housing projects

or the Section 8 housing voucher program, home heating and cooling through the Low Income Home Energy Assistance Program [LIHEAP], healthcare through Medicaid, food through the Special Supplemental Nutrition Program for Women, Infants, and Children [WIC] or the Supplemental Nutrition Assistance Program [SNAP], programs for families through Temporary Assistance for Needy Families [TANF] and phone and internet communication through the Federal Communication Commission's Lifeline program (Federal Communications Commission, 2016; Tyler et al., 2011). Although one municipality, San Francisco, CA, has designated a portion of its TANF funding to provide diapers for eligible families (City and County of San Francisco, 2015), no federally funded program provides all low-income citizens with the nonfood basic needs required for health and hygiene, including diapers.

### **Access to Basic Needs**

Basic needs are generally accepted as the requirements for survival. Basic needs for survival in the 21<sup>st</sup> Century United States include: shelter with a kitchen and bathroom, utilities and potable water, transportation, means for communication with the community, healthy food, and hygiene products (Weir, 2015). Individuals struggling to meet their most basic needs spend a great deal of time acquiring what they need for survival and meeting basic health needs such that their capacities to develop skills for improving their economic outlooks are greatly diminished compared to individuals whose basic needs are already met (Elmes, 2016). Families and individuals who struggle to meet one basic need often struggle to meet multiple basic needs (Fiese, Koester, & Waxman, 2014). This was true of families with young children experiencing diaper need who also

had trouble meeting other basic needs such as housing and utilities (Massengale et al., 2016b) as well as families forced to choose to “heat or eat” during winter months when they could afford home heating or food but not both (Tyler et al., 2011). In recent years, food pantries have been increasingly called upon to provide nonfood basic needs such as soap, toothpaste, and toilet paper (Fiese et al., 2014). Nonfood hygiene products, such as diapers and tampons, were identified by food pantry recipients as items necessary for survival (Fiese et al., 2014). Food pantry recipients felt that having an adequate supply of hygiene products was important for self-respect, a sense of good parenting, and overall health maintenance (Fiese et al., 2014).

A need for nonfood basic needs affects health directly by the absence of the basic need or indirectly as meeting basic needs may take precedence over addressing health concerns. Callers to a resource help-line requesting assistance with basic needs such as housing, utilities, and food were much more likely to follow-up on referrals for their own health concerns if their initial basic need problem had been resolved (Thompson, Kreuter, & Boyum, 2016). This finding suggests that vulnerable populations may be more receptive to health promotion efforts and more likely to make lasting health behavior changes once their basic needs have been met (Thompson et al., 2016). In fact, Frazee, Lewis, Rodriguez, and Fisher (2016) assert that meeting nonmedical basic needs will improve both population health and the overall quality of healthcare while decreasing healthcare spending. Diapers are an example of a basic need whose absence affects health for both children and their caregivers (Massengale et al., 2016b; Porter & Steefel, 2015; Smith et al., 2013).

## **Diaper Need**

Families experiencing diaper need are forced to make choices between which basic needs, including diapers, to spend their money on. As described in the previous chapter, families deploy a range of strategies for coping when they do not have enough diapers to change their children's diapers at a rate to promote health and prevent infection. Children in contact with urine and feces for a prolonged period of time are prone to skin and urinary tract infections (Adalat et al., 2007; Clark-Greuel et al., 2014; Friedlander et al., 2009; Shin, 2005; Sugimura et al., 2009) as well as sleep disturbances (Porter & Steefel, 2015) and negative effects on affect (Massengale et al., 2016b). Cloth diapers are often suggested by individuals in middle and upper income brackets as a possible solution for diaper need. However, many challenges prevent low-income families from using cloth diapers including: the cost of soap and water needed for frequent loads of laundry, laundromats which do not allow the washing of cloth diapers, and childcare facilities which do not allow cloth diapering while the child is in care (Raver et al., 2010). Early toilet training is another strategy suggested by some to reduce families' need for diapers. In fact, some families experiencing diaper need may indeed push early toilet training before their children display developmental signs of readiness to save the money spent on diapers (Horn, Brenner, Rao, & Cheng, 2006; Porter & Steefel, 2015). Early attempts at toilet training before a child shows developmental signs of readiness is not only unlikely to work but increases the risk of child abuse (American Academy of Pediatrics, n.d.; Schmitt, 2004). Families aware of a diaper bank in their community may turn to the diaper bank for help addressing diaper need.

## **Diaper Bank Service Delivery Model**

Readers unfamiliar with diaper banks may appreciate the parallel comparison to food banks. Both serve as stopgap solutions to address poverty-- food banks provide a supplemental, short-term supply of food for individuals experiencing food insecurity while diaper banks provide a supplemental, short-term supply of diapers for families experiencing diaper need. A food bank generally does not serve clients directly but instead acts as a repository for donated food that is then shipped to and distributed to clients by food pantries and other community-based organizations (Feeding America, 2016). Diaper banks operate in the same way by storing diapers and providing program and operational management while community-based organizations, many of whom provide additional services to families besides diaper distribution, disburse the diapers to families (Massengale, Erausquin, & Old, 2017). Both types of organizations are generally nonprofits supported largely by private, local donations (Jiang, Davis, De Mleo, & Terry, 2013). Given these similarities in poverty reduction goals, operations, and funding streams as well as the deficit of peer-reviewed literature about diaper banks, literature about food banks serves to inform diaper bank researchers and practitioners. While food banks, food pantries, and charitable organizations offering some degree of assistance with food needs are seemingly ubiquitous to individuals who have not suffered food insecurity, diaper need and diaper banks receive less recognition in both the peer-reviewed literature and popular press. Therefore, the food bank model provides both a relevant and familiar starting point of comparison for the exploration of barriers to accessing diaper banks.

**Diaper bank partnerships with community-based organizations.** The community-based organizations that partner with diaper banks to distribute diapers offer a range of services and resources for families with young children including: other basic needs such as food and housing, childcare and early childhood education, parenting education and resources, domestic violence support, job placement and training, healthcare, and financial literacy. Although families often gain knowledge, skills, support, and/or material goods from their participation in community-based organization programming, many organizations use incentives to initially attract and/or retain participants. Upon asking parents which incentives would encourage families to enroll in a parenting intervention, participants voiced a stronger preference for diapers and other parenting supplies than money (Katz et al., 2001). Restrictions on grant funding or budget limitations prevent some organizations from purchasing incentives or extra items beyond those required for program delivery (Massengale et al., 2017). For these organizations, forming a partnership with a diaper bank has allowed them to offer diapers to families and retain them in their programming longer than they did prior to providing diapers from the diaper bank (Massengale et al., 2017). Other benefits community-based organizations derived from distributing diapers from a community-based diaper bank included increased opportunities for: communication with clients between visits, connecting clients to additional resources, and discussion with clients to problem-solve how they would obtain the additional diapers needed after exhausting the supplemental supply (Massengale et al., 2017).

## **Community Perceptions of the Diaper Bank**

Nonprofit organizations are increasingly called upon to provide social services formerly or never provided by the government (McDougle, 2014). Due to the increased privatization and devolution of social services, service recipients are increasingly unaware of who provides the services they receive (McDougle, 2014). In fact, one study found that individuals most likely to access services provided by nonprofit organizations- those with the lowest educational attainment or smallest household incomes- were less likely to be aware of nonprofit organizations in their community compared to individuals with more education or income (McDougle, 2014).

Community perceptions of nonprofit social service providers have implications for public health practitioners in the nonprofit sector or those in other sectors who refer clients to nonprofit organizations. To community members with resources of money and/or time, nonprofit status is an important factor when determining to which organizations to donate or become involved (Handy et al., 2010). The ability to attract donors and volunteers has implications for the long-term sustainability of many nonprofit social service providers and their abilities to serve clients. For current and future clients, the services of nonprofit community-based safety nets enable individuals and families to meet basic needs in the absence of government support.

Barriers experienced or perceived influence uptake of community-based resources and thereby influence perceptions of community-based organizations. As with delivery of any social service, families experiencing diaper need may encounter any number of barriers or challenges to accessing a diaper bank to receive a supplemental supply of

diapers. Families may not be aware of the resource or may not be able to access the resource due to eligibility, timing, or a lack of transportation (Loopstra & Tarasuk, 2015; Stella, Huang, Schwalberg, & Kogan, 2005). Previous negative experiences with staff providing social services or internal feelings of shame may prevent families from accessing community-based resources such as diaper banks (van der Horst, Pascucci, & Bol, 2014). Families who do not speak English may be concerned that no one at the service organization speaks their language (Massengale, Morrison, & Sudha, 2016).

Challenges experienced by individuals accessing food banks are well documented (Loopstra & Tarasuk, 2015; Tarasuk & Eakin, 2003; van der Horst et al., 2014) and while they are specific to the experience of meeting the basic need of food, they are mirrored by families accessing diaper banks to meet the basic need of diapers (Table 1).



**Table 1. Factors Influencing Utilization of Food Bank and Diaper Bank Services**

<b>Factor</b>	<b>Food Banks</b>	<b>Diaper Banks</b>
<b>Lack of Awareness</b>	Immigrant families less likely aware of community resources (Stella et al., 2005).	Diaper recipients who incorrectly believe diaper bank is government or corporate sponsored may therefore assume ineligibility, especially if immigrant.
<b>Employment Status</b>	Unemployed families more likely to experience food insecurity (Shackman et al., 2015).  Families may be working when organizations are distributing aid; policies may exclude employed individuals; staff may imply those employed should not access (Loopstra & Tarasuk, 2015).	Employed and unemployed families alike may experience diaper need.  Families may be working when diapers are distributed. Volunteers at partner organizations may imply employed families do not need help.
<b>Contents of Supplemental Supply</b>	Quantity varies (Tarasuk & Eakin, 2003) or may be exhausted (Loopstra & Tarasuk, 2015).  Families demeaned when expressing concern or complaint for receiving expired or spoiled food (Loopstra & Tarasuk, 2015; Tarasuk & Eakin, 2003; van der Horst et al., 2014).	When community partners run out of a particular size of diaper, a different size may be substituted. If a community partner's diaper stores are limited, families could receive fewer diapers or none at all.  Families have preference for specific brand(s) or type of diapers that may not be available.
<b>Prior CBO Experiences</b>	Demeaning interactions with staff, poor quality of items received, feelings of shame and diminished social status for needing services (van der Horst et al., 2014).	Negative interactions with staff, brand desirability of items received, feelings of shame for not being able to provide for their children, CBO staff who may not speak their language.

### **Lack of Awareness**

Families needing diapers may lack awareness of diaper banks as a resource for addressing diaper need. Misperceptions about community-based diaper banks suggest there may be community members experiencing diaper need who incorrectly assume they may be ineligible to receive diapers from the diaper bank if they have been ineligible for government safety net programs in the past. A study of low-income families with young children found immigrant families were less likely than U.S. born families to be aware of available community resources (Stella et al., 2005). Once families gain awareness of a community-based resource, other barriers may still prevent them from accessing services.

### **Employment**

For working low-income families, community-based organizations increase or enhance access to basic needs unmet by government safety net program. (Allard, 2011). As one might expect, utilization of food banks has been correlated with trends in unemployment (Shackman, Yu, Edmunds, Clarke, & Sekhobo, 2015). When individuals are out of work they may consequently experience food insecurity and therefore seek support from a local food pantry (Shackman et al., 2015). However, employment does not guarantee one will be able to meet all basic needs and presents additional barriers to accessing resources. The operating hours of community-based organizations distributing aid may not be compatible with employees' work schedules (Loopstra & Tarasuk, 2015). Institutional policies may exclude employed individuals from receiving help (Loopstra & Tarasuk, 2015). Staff or volunteers distributing aid may explicitly or implicitly imply that employed individuals should not be accessing services (Loopstra & Tarasuk, 2015).

Thus, employed individuals must navigate a unique set of logistical challenges and potentially condemnatory interactions in order to access services needed for their families.

### **Contents of the Supplemental Supply**

Considering the experiences of families receiving a supplemental supply of food from a food bank provides a starting point for understanding families' experiences receiving a supplemental supply of diapers from a diaper bank. Based on available resources, food banks make decisions on the frequency of food distribution and the amount of food provided in the supplemental supply (Tarasuk & Eakin, 2003). When donations and stores are limited, those in need consequently receive less food even though their needs may not have decreased accordingly (Tarasuk & Eakin, 2003). Food pantries may run out of food, unexpectedly closing their doors early even though people still need help (Loopstra & Tarasuk, 2015). In some cases, food pantries distributed food that was expired or spoiled, questioning the need of recipients who expressed concern or complaint (Loopstra & Tarasuk, 2015; Tarasuk & Eakin, 2003; van der Horst et al., 2014). When deciding whether to travel to a food pantry, those seeking aid must weigh the costs of transportation and time against the probability of receiving food of variable quality (Loopstra & Tarasuk, 2015; Simmet, Depa, Tinnemann, & Stroebele-Benschop, 2016). Thus, people accessing food pantries may indeed be those with the most desperate needs (Loopstra & Tarasuk, 2015). Similarly, diaper banks distribute multiple brands of diapers received via donation or bulk purchase. Individual families may have preferences

for particular diaper brands or styles that may differ from the diapers offered by a diaper bank.

### **Prior Experiences Accessing Community Resources**

Food bank recipients in the Netherlands reported feelings of shame that stemmed from their experiences accessing food banks (van der Horst et al., 2014). Demeaning interactions with food pantry workers, finding expired and spoiled food among the items they received, and feelings of a diminished status in a social hierarchy left food bank recipients questioning their own self-worth (van der Horst et al., 2014). Families experiencing diaper need who have not accessed the diaper bank could have previously had negative experiences accessing other community resources and safety net programs and thus may fear a similar negative experience.

### **Measuring Unmet Diaper Need**

Utilization of food banks in upper-income countries is often extrapolated into an indicator of the prevalence of food security in the communities in which the food banks are located (Loopstra, & Tarasuk, 2015). However, for a number of reasons previously described, not all who experience food insecurity access local food banks (Loopstra & Tarasuk, 2015). Loopstra and Tarasuk (2015) propose that a more accurate way to measure food insecurity and therefore inform policy efforts is through the systematic collection of monitoring data at the population level. By this same logic, estimating diaper need by the number of families who received diapers from a diaper bank would not accurately quantify the number of families who need additional diapers. Diaper banks estimate that they serve families whose annual incomes average 200% or below the U.S.

Poverty Income Guidelines. Therefore, a more precise measure of diaper need may come from estimates of the number of children under the age of 4 years old living in Durham County multiplied by the percentage of North Carolina children under the age of 4 years old who are members of families whose income is 200% of the poverty level or below as calculated from publicly available data from the Annie E. Casey Foundation (2016) and the North Carolina Office of State and Budget Management (2016).

### **Gaps of Current Literature**

The lack of literature on diaper need and diaper banks creates a gap for healthcare and social service providers, policy makers, and community leaders wishing to learn from others' experiences in order to address diaper need in practice or with policy. This bounded case study of diaper need in Durham County, North Carolina seeks to contribute to the limited research by documenting experiences of diaper need from multiple viewpoints including the experiences of diaper recipient families and community-based organization staff members who distribute diapers from the local diaper bank.

The most frequently cited outcome among families who received diapers from a community-based diaper bank was an increase in parental and caregiver happiness (Massengale et al., 2016b). Upon receiving diapers, parents and caregivers described a reduction in their own stress which was felt by the rest of the family positively influencing the happiness of the entire family (Massengale, Erausquin, & Old, 2016a). Other families described having more time to play together as receiving diapers from the diaper bank reduced the amount of time they spent addressing diaper need (Massengale et al., 2016a). These findings are consistent with literature that describes how low-income

families must prioritize daily survival over time to play (Milteer et al., 2012). Playing with parents and guardians helps children to bond with the caregiving adults in their lives as well as to grow socially and emotionally (Milteer et al., 2012). Maternal nurturance, which may be facilitated through play, has shown to mitigate some of the negative health effects of childhood poverty that are experienced later in life (Miller & Chen, 2013). When families receive diapers from the diaper bank instead of spending time and emotional energy addressing their diaper need and caring for prolonged or recurring cases of diaper rash, they are afforded increased opportunities to facilitate playful interactions with their children and (Massengale et al., 2016a).

In addition to a reduction in stress and an increase in parental happiness (Massengale et al., 2016b), families receiving diapers from a community-based diaper bank experienced several other benefits. Families reported the ability to divert household finances to other basic needs such as food, utilities, and healthcare. Parents and guardians observed that their children were happier and healthier. The supplemental supply of diapers provided allowed adults to attend work or school as families had enough diapers to send children to childcare. Uncovering community perceptions of the diaper bank will allow the diaper bank to address misperceptions while expanding its community outreach efforts so that more families will be able to experience the health, social, and economic benefits possible from receiving a supplemental supply of diapers.

Quantifying the number of diapers in the supplemental supply needed to satisfy the diaper need of the majority of families served would allow the diaper bank to make the best use of its limited resources while maximizing the impact for families. For some

families, the incentive of diapers might initially encourage enrollment in community-based organization programming. However, over time the incentive may not be substantial enough for families to fully participate in or complete programming given the competing stressors of daily living (Gross, Julion, & Fogg, 2001). When the Diaper Bank of North Carolina first began distributing diapers in June 2013, families were provided a supplemental supply of 12 diapers each time diapers were received. Feedback to the diaper bank's Executive Director from community-based organizations distributing the diapers indicated that some families were expending their resources of time and money daily to visit one of the partnering organizations to receive 12 diapers. Therefore, in the Spring of 2014, the quantity of the supplemental supply of diapers increased to 25 diapers each time diapers were distributed. In response to a call from the National Diaper Bank Network [NDBN] to standardize practices across member diaper banks, the supplemental supply increased again in December 2015 to meet the minimum quantity of 50 diapers set by the NDBN. Determining families' satisfaction with the quantity of diapers provided in the supplemental supply will allow the diaper bank to allocate its stores of diapers to recipient families in quantities that best meets families' needs while being mindful of the finite resource of donated diapers. The thorough understanding of multiple experiences of diaper need in Durham County, North Carolina that result from this case study have implications for the practice of the local diaper bank and the work of diaper banks across the country.

Estimating the number of children in the county at risk for diaper need provide data needed to set benchmarks towards reducing diaper need in the case community.

Understanding diaper recipients' perceptions of the diaper bank and their program improvement suggestions have implications for reaching families in need who have not yet accessed the diaper bank. Quite possibly the most impactful way to address families' needs for additional diapers is through policy change which would facilitate the diaper bank's ability to both increase the size of the supplemental supply provided and to serve additional families. One policy change that would also improve families' access to diapers is the repeal of the state sales tax charged on diapers (Weir, 2017). The amendment of federal policies such as the Social Security Act to allow for the provision of diapers and the allocation by states of federal block grants such as Temporary Assistance for Needy Families [TANF], would support the infrastructure created by diaper banks for addressing diaper need and increase individual families' access to the health resource of diapers (City and County of San Francisco, 2015). However, in the midst of a national political climate rendering bipartisan support for such legislation unlikely (Civic Impulse, 2016), healthcare providers, social service providers, and community members alike are called upon to address diaper need.

Addressing diaper need would allow low-income families with young children to experience the health, social, and economic benefits achieved when their needs for diapers are met (Massengale et al., 2016b). In addition, supporting the work of diaper banks also assists community-based organizations working with low-income families in addressing families' other needs besides diapers (Massengale et al., 2017). The findings of this dissertation document the experiences of diaper recipients in Durham County, North Carolina to inform the work of diaper banks, social service providers, healthcare



providers, and community members so that families experiencing diaper need may live with the dignity that comes from having their most basic needs for health and hygiene met. In turn, low-income families with children could work towards meeting familial and personal goals and dreams, instead of living each day focused on meeting basic needs for survival.

## CHAPTER III

### METHODS

This dissertation documents a case study that examined diaper need in an under-resourced community for the purpose of advancing future research and practice. As a research design, a case study is suited for documenting multifaceted experiences; guiding discovery when theories, measurement strategies, or prior research is lacking; and exploring a shared experience from multiple points of view (Kohn, 1997). The current case study was bounded by geography (Creswell, 2013) to Durham County, the physical location of the main branch of the Diaper Bank of North Carolina. Multiple sources of data allowed for the exploration of diaper need from the viewpoints of many Durham County families and community-based organization staff members (Creswell, 2013; Kohn, 1997; Stake, 1995; Yanzen, 2015). Utilizing population data from the state of North Carolina, the diaper bank's diaper distribution records, key informant interviews with community-based organization staff members who distribute products from the diaper bank, surveys completed by families receiving assistance, and focused interviews with recipient families, this case study of diaper need in Durham County, North Carolina documents the shared experiences of families who struggled to provide the basic need of diapers. The results of this study have implications for diaper banks working to address diaper need in other communities nationwide.

## **Research Questions**

Question #1a: What is the unmet diaper need among financially vulnerable families in Durham County, North Carolina?

Question #1b: What are diaper bank recipient families' perceptions of their local diaper bank and suggestions for improvement?

Question #2: What household characteristics influence families' satisfaction with the quantity of diapers in the supplemental supply received?

## **Research Design**

This dissertation presents a case study of diaper need in Durham County, North Carolina. Multiple sources of data shed light on how diaper need was experienced within the county (Table 2). Collected during multiple phases, data were triangulated to provide an understanding of the experiences of diaper recipient families from multiple viewpoints (Figure 2). First, qualitative and quantitative data collected during a process evaluation of the Diaper Bank of North Carolina documented diaper recipients' perceptions of the diaper bank as well as suggestions for program improvement. Then, diaper recipient families completed brief surveys at the time diapers were provided to document household expenditures on diapers, household characteristics, experiences of diaper need, and satisfaction with the quantity of diapers received. Lastly, analysis of publicly available population data and the diaper bank's records of diapers distributed in the community informed an estimation of the unmet diaper need in the case community.

**Table 2. Case Study Sources of Data**

<b>Data Source</b>	<b>Participants</b>	<b>Date of Data Collection</b>	<b>Type of Data</b>	<b>Data Collected</b>	<b>Application of Results</b>
2014-2015 Process Evaluation of the Diaper Bank of North Carolina	Community partners	Fall 2014	key informant interviews (n=9)	<ul style="list-style-type: none"> <li>Experiences distributing diapers</li> <li>Outcomes experienced as a result of distributing diapers</li> </ul>	Document experiences of diaper need in Durham County Understand benefits to families
2014-2015 Process Evaluation of the Diaper Bank of North Carolina	Diaper bank recipients	F014-summer 2015; December 2016	surveys (n=150); interviews (n=15)	<ul style="list-style-type: none"> <li>Experiences, consequences, outcomes of diaper need</li> <li>Household characteristics</li> <li>Factors influencing satisfaction with quantity of diapers received</li> </ul>	Document experiences of diaper need in Durham County Document satisfaction with number of diapers received Better understand factors that influence families' satisfaction
Diaper bank recipient Fall 2016 Survey	Diaper bank recipients	December 2016-January 2017	surveys (n=246)	<ul style="list-style-type: none"> <li>Household characteristics</li> <li>Experiences of diaper need</li> <li>Satisfaction with quantity of diapers received</li> </ul>	Document satisfaction with number of diapers received among groups of recipients with shared characteristics
Annie E. Casey Foundation's Kids Count Data Center	NC children < age 4	Publicly available data	population estimates	<ul style="list-style-type: none"> <li>Percentage of children &lt; age 4 living ≤ 200% poverty</li> </ul>	Calculate diaper need in Durham County
NC Office of State and Budget Management	Durham County children < age 4	Publicly available data	population estimates	<ul style="list-style-type: none"> <li>Number of children &lt; age 4 living in Durham County</li> </ul>	Calculate diaper need in Durham County
Diaper Bank of North Carolina diaper distribution records	Number of diapers distributed	2016	number of diapers distributed	<ul style="list-style-type: none"> <li>Diapers distributed to community-based organizations in Durham County</li> </ul>	Calculate met and unmet diaper need in Durham County

## Figure 2. Case Study Design

### Process Evaluation

*Fall 2014 – Fall 2016*

- Community-based organization staff key informant interviews (n=9)
- Diaper recipient family surveys (n=150)
- Diaper recipient family interviews (n=15)



### Additional Data Collected for Dissertation

*December 2016 – January 2017*

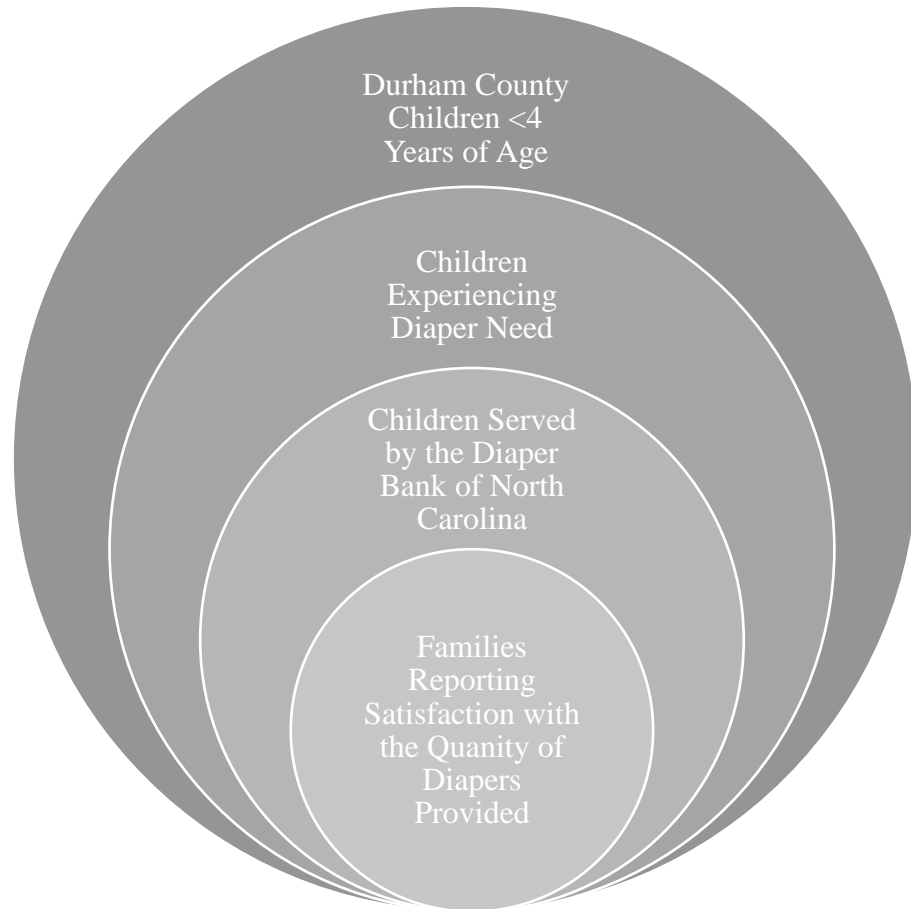
- Diaper recipient family surveys (n=246)
- Analysis of diaper distribution records, publicly available population data

### Calculation of Diaper Need in the Durham County Community

Across the state of North Carolina, 48% of children under the age of 18 are members of households whose annual incomes are less than 200% of the federal poverty level, or, for a family with two children and two adults, \$48,072 (Annie E. Casey Foundation, 2016). According to the North Carolina Office of State and Budget Management (2016), 21,698 children ages 0-4 years old live in Durham County, North Carolina. Thus, 10,415 children under the age of four in Durham County were estimated to be at risk for the experience of diaper need given their families' annual household incomes.

Then, calculations of met and unmet diaper need in Durham County were calculated using distribution records from the diaper bank. The Diaper Bank of North Carolina's records for the number of diapers distributed in Durham County, North Carolina each month during 2016 were obtained from the organization. During this period, an average of 49,140 diapers per month were distributed to families in the county who were experiencing diaper need. As families are generally provided 50 diapers per month, it is estimated that 982 Durham County children were served each month, or 9.4% of the children in Durham County experiencing diaper need. The 982 Durham County children served by the diaper bank were subtracted from the total number of children estimated to be experiencing diaper need, resulting in an estimation that 9,433 Durham County children are experiencing diaper need but have not accessed the services of the local diaper bank. Lastly, the proportion of diaper recipient families indicating on surveys that the supplemental supply of diapers was "just right" was multiplied by the number of number of families served to estimate the total number of Durham County diaper bank recipient families satisfied with the quantity of diapers received (Figure 3).

**Figure 3. Visualizing Diaper Need in Durham County.**



### **Research Setting**

The Diaper Bank of North Carolina is a 501c(3) nonprofit organization whose mission is to address North Carolina families' need for access to nonfood basic needs for health and hygiene, including diapers. The diaper bank implements its mission through the provision of free disposable diapers, diaper wipes, and diaper rash cream to low-income families in three regions of the state. The main branch and headquarters of the diaper bank is the Triangle Branch located in Durham, North Carolina. Other branches are located in the Triad and Lower Cape Fear regions of the state. Monthly, the diaper

bank distributes approximately 165,000 diapers across the state, 100,000 of which are distributed by the Triangle Branch to families in Durham, Orange, Wake, and Alamance counties. The diaper bank does not distribute diapers to families directly. Rather, the diaper bank has formed partnerships with community-based organizations already serving low-income families who distribute diapers to families in need. Provided families meet eligibility criteria set by the community-based organization distributing diapers on behalf of the diaper bank, it is possible for some families to receive diapers from more than one organization each month.

### **Participants**

Data previously collected from community-based organization staff members who distribute diapers and diaper recipient families contributed the data for the analyses completed during this dissertation. During the course of this dissertation, some new data were collected. To support Research Question 2, data were collected from: surveys completed by diaper recipient families who received diapers during the fall of 2016 (n=246), and face-to-face interviews with diaper recipient families (n=10).

### **Data Collection**

Primary data collection occurred via survey and face-to-face interview of diaper recipient families. During the course of this dissertation, surveys were distributed by community-based organization staff members at the time families received diapers. At two diaper distribution locations, the diaper bank's Executive Director and study PI (Kelley Massengale) both visited the organization to distribute surveys while families



were waiting to receive services. Any family who was receiving diapers and willing to respond to survey questions in English or Spanish was invited to participate in the survey.

Families waiting to receive diapers at an organization which provides diapers as a part of their baby supply and children's clothing closet were recruited to participate in face-to-face interviews. This location was selected as it was one of two locations in Durham County where families could receive diapers without being enrolled in a program offered by the CBO. Using a recruitment script, the study PI invited families who had previously received diapers to participate in an English-language interview. Any adult over the age of 18 years of age who had received diapers at least once before the date of the interview was eligible to participate. In appreciation of their time, all interview participants were provided with a gift bag of skincare products made locally by a nationally recognized brand. A semi-structured interview guide (see Appendix A) utilized during the face-to-face interviews with diaper recipient families ensured all participants were asked about the same topics while allowing the interviewer to probe for clarification and ask follow-up questions if the interviewee introduced new subjects.

### **Instrumentation**

Quantitative data analyzed in response to Research Question 1B were obtained from the survey (see Appendix B) of diaper recipient families (n=150) during the previously described process evaluation. The additional items added to the surveys distributed to diaper recipient families in the fall of 2016 (see Appendix C) were developed after assessment of the findings of the process evaluation describing recipient

families' household characteristics and outcomes experienced as a result of receiving diapers (Massengale et al., 2016b).

### **Data Analysis**

Triangulation of data analyzed from qualitative interviews, quantitative surveys, publicly available population data, and diaper bank distribution records describe multiple experiences of diaper need in Durham County, North Carolina (Creswell, 2016).

### **Qualitative Data Analysis**

For both sets of interviews, those with key informants from community-based organizations and those with diaper recipient families, development of the thematic codebooks began after the first few interviews were completed. Additional themes were added to each codebook during review of subsequent interviews. Two researchers independently coded each transcript for thematic elements and case contextual significance then assessed for patterns present across the cases in accordance with the cross-case analytic approach (Creswell, 2013; Yin, 2009). In places where coding differed, the two researchers discussed their decision making until researching consensus on all themes.

**Documenting community perceptions of the diaper bank.** Community perceptions of the diaper bank were assessed using qualitative and quantitative data from multiple sources. First, community-based organization staff members who distribute diapers to their clients participated in key-informant interviews. During these interviews, key informants described what they thought their clients knew about the diaper bank and any information they had passed along to their clients. They were also asked whether

their clients ask questions about the diaper bank. After analyzing the themes described during these interviews, quantitative survey questions were designed to capture diaper recipient families' perceptions of the diaper bank.

### **Quantitative Data Analysis**

Descriptive statistics were used to analyze quantitative data collected to address both research questions. In addition, quantitative data collected to analyze Research Question #2 were analyzed using nonparametric Chi-square tests for association and logistic regression analyses.

**Documenting community perceptions of the diaper bank.** Diaper recipients responded to survey questions indicating how they first learned about the diaper bank and which organization(s) had provided them diapers in the past. To gauge diaper recipients' knowledge about the diaper bank's funding sources and volunteer staff, survey respondents were asked to indicate whether statements about the diaper bank were true, false, or whether the participant did not know the answer.

**Demographics.** Diaper recipients designated their self-identified gender identities as well as their racial and ethnic identities. Diaper recipients also indicated their birth year and receipt of SNAP and/or WIC benefits.

**Household members.** Respondents specified the ages of any children wearing diapers, the number of children in the household who were not wearing diapers, and the number of household adults. From these responses, variables were created for multiple children wearing diapers and families headed by single parents. A variable for the age of

the youngest child wearing diapers was created as the younger child would require the greatest number of diapers daily among individual children in the household.

**Employment status.** Respondents were asked to specify the number of adults in the household “working full-time,” “working part-time,” and “looking for work.” From these responses, a variable was created to indicate whether households had an adult who was currently working.

**Experience of diaper need.** Diaper need was measured by the question, “*In the past year, has there been a time when you had to make a choice between spending money on diapers and spending money on something else for your family?*” Families who answered “Yes” were asked to indicate whether they had to choose between diapers and basic needs of: food; rent or housing; utilities; car payment; gas for a vehicle; medicine or healthcare; and nonfood basic needs like soap, toilet paper, or toothpaste.

**Frequency of receiving diapers.** Respondents were asked to specify how often they received diapers from any location that were from the diaper bank using the answer choices: every week, a few times a month, once a month, and every few months. Responses were collapsed into two categories, families receiving diapers more often than once a month, and once a month or less often.

**Duration of receiving diapers.** Respondents were asked to specify how often they received diapers from any location that were from the diaper bank using the answer choices: this is my first time, a few weeks, about a month, a few months, several months, about a year, and a few years. Responses were collapsed into two categories, families

who had received diapers longer than a few months, and those who had received diapers for less time.

**Household spending on diapers.** Respondents were asked, “*About how much do you spend each month on diapers?*” or to indicate no spending on diapers. The dollar amount was divided by the number of children in the household wearing diapers to calculate household monthly spending on diapers per child. Porter and Steefel (2015) referenced a diaper manufacture’s estimate that the monthly cost of diapers may be as high as \$125 per child. Therefore, outlier estimates of monthly spending >\$125 per child were recorded as \$125.

**Number of extra diapers needed.** The number of extra diapers needed each month was calculated by multiplying numeric responses to the questions: “*In the past month, how many days did you not have enough diapers to change your child’s diaper as often as you wanted?*” and “*On the days when you have needed extra diapers, about how many MORE diapers did you need each day?*” If a respondent answered only the second question, it was assumed all diapers were needed for those days. The number of diapers used daily was estimated as: newborn to 3-months, 12; 4-months to 8-months, 10; 9-months to 12-months, 8; and  $\geq 13$ -months, 6. If a respondent specified >15 extra diapers per day were needed, the number was not multiplied by the number of days specified in question one as we assumed the number recorded “per day” was a total needed for the entire month.

**Satisfaction with the quantity of diapers received.** Families were asked to indicate whether the number of diapers received in the supplemental supply was “*not enough,*” “*just right,*” or “*too much.*”

### **Assumptions and Limitations**

An exact number of families experiencing diaper need in Durham County at any given time is difficult to estimate as families can experience a range of anticipated and unexpected household, economic, social, and employment changes that may lead to the experience of diaper need or change a family’s economic circumstances such that diaper need is no longer a concern. The estimation of the percentage of families with children living < 200% of the federal poverty level is an estimate for the entire state of North Carolina. The actual percentage in Durham county may vary.

The results of this dissertation may be of interest to individuals and organizations addressing diaper need in other communities. However, the findings of this case study document the experience of diaper need in one community- Durham County, North Carolina. The context of diaper need in other communities may represent unique circumstances warranting their own investigation.

### **Summary**

This dissertation documented a case study of diaper need in Durham County, North Carolina by triangulating quantitative and qualitative findings from a variety of data sources. The findings from this study serve to inform the Diaper Bank of North Carolina’s short and long-term planning as the organization works towards a goal of serving families experiencing diaper need in all 100 North Carolina counties. In addition,

the results of this dissertation are of interest to other diaper banks as they consider the context of diaper need in their own unique communities.

## CHAPTER IV

### RECIPIENT FAMILIES' KNOWLEDGE AND PERCEPTIONS OF A COMMUNITY-BASED DIAPER BANK AND SUGGESTIONS FOR PROGRAM IMPROVEMENT

#### **Abstract**

Diaper banks work to address low-income families' needs for diapers by providing community-based organizations with diapers and related products to distribute to their clients with young children. Program improvement suggestions from current recipients provide diaper banks with guidance for 1) expanding services to retain current families and 2) better addressing unmet diaper need in the community. Our mixed methods study explores the experiences of community-based organization staff members distributing diapers (n=9 interviewees representing seven agencies) and recipient families (n=15 interviewees; n=150 survey respondents) from a community-based diaper bank. Staff shared varying amounts of information with clients about the diaper bank and desired opportunities for clients to volunteer. Recipient families desired: shorter waiting times and additional distribution locations, diaper-related information including toilet training guidance, additional hygiene products, and volunteer opportunities. Recipients held misperceptions about the diaper bank's organizational structure that suggest needed improvements in organizational branding. Findings are relevant for communities looking to institute or modify services to address diaper need.

**Key Words:** diaper need, diaper bank, poverty, child health, program improvement



## **Introduction**

About half of children under age 4 in Durham County, North Carolina are susceptible (i.e. live in households whose annual incomes are less than 200% of the federal poverty level) to diaper need (Annie E. Casey Foundation, 2016), yet distribution records from the Diaper Bank of North Carolina indicate only an estimated 9.4% of these children have received a free, supplemental supply of diapers from the organization. Families experience diaper need when they reduce spending on basic needs such as food, housing, or healthcare to instead purchase the basic need of diapers (Raver, Letourneau, Scott, & D'Agostino, 2010). Diaper banks work to address diaper need by providing community-based organizations with diapers and related products to distribute to their low-income clients with young children (National Diaper Bank Network, 2017). Program improvement suggestions from current recipients provide diaper banks with guidance for 1) expanding services to retain current families and 2) better addressing unmet diaper need in the community. Our current study explores the experiences of recipient families and community-based organizations distributing products from a diaper bank working to address diaper need in one community. Findings from our study are relevant for social service and healthcare providers serving low-income families with young children.

Our first goal was to identify what recipient families knew about the diaper bank and how they perceived the organization. Diaper banks help families meet the basic need of diapers (Massengale, Erasquin, & Old, 2017; Porter & Steefel, 2015); however, little is known about what recipients know or perceive about diaper banks. One factor that influences the ability of community-based safety-net programs such as diaper banks to

meet basic needs and connect families to available resources is community members' knowledge about local nonprofits (Allard, 2011). Understanding recipients' knowledge and perceptions about the diaper bank is important for meeting clients where they are to better serve their needs.

Documenting what recipients know about their local diaper bank can guide efforts to increase community awareness of the organization. Families could be reluctant to receive services from an organization they presume is government run if they have been ineligible for federal assistance in the past, are fearful of accessing government entities due to immigration status, or have a general distrust of government (Zedlewski et al., 2003). In one study, unemployed families living in deep poverty who were not receiving federal cash assistance cited several reasons for their lack of participation in government sponsored welfare programs including: frustration with administrative procedures required to receive or maintain benefits, negative experiences with staff, pride, distrust, and immigration status (Zedlewski et al., 2003).

Our second goal was to explore recipients' suggestions for improving access to the diaper bank to inform efforts to reduce barriers and allow diaper banks to serve more community members. Barriers, whether they are experienced or perceived, can influence whether families access diaper banks and how they perceive a diaper bank in their community. Barriers including: a lack of awareness, ineligibility, timing, or a lack of transportation (Loopstra & Tarasuk, 2015; Stella, Huang, Schwalberg, & Kogan, 2005) may prevent families from accessing diaper banks. Families who had previous negative experiences with staff at social service organizations or who had internal feelings of

shame for needing services (van der Horst, Pascucci, & Bol, 2014) may not access diaper banks even if they have need for the services provided.

Immigrant families may experience additional barriers to accessing diaper banks. A study of low-income families with young children found immigrant families were less likely than U.S. born families to be aware of available community resources (Stella et al., 2005). Families who do not speak English may be concerned that no one speaks their language (Massengale, Morrison, & Sudha, 2016). As diaper banks work with community-based organizations, some of whom may be government agencies, to distribute diapers to families in need, sensitivity to concerns about immigration status in a changing political climate warrants consideration.

Diaper banks present a unique infrastructure that could be harnessed to mitigate families' experiences of diaper need. Families' needs and knowledge of their local diaper bank influence whether they will visit initially, return for services, or access expanded programming. We explored the case of the Diaper Bank of North Carolina's work to address diaper need in the Durham County, North Carolina community, documenting the experiences of both recipient families and the community-based organization staff members who distributed diaper bank products to their clients. The aims of the present study are: 1) to identify recipients' knowledge about and perceptions of the diaper bank as a community-based resource, and 2) to identify recipients' and community-based organization staff members' suggestions for program improvement. The findings from our current study are relevant for others working to address diaper need and/or improve low-income families' access to basic needs in their own communities.

## **Methods**

### **Community Setting: Diaper Bank of North Carolina**

As a 501(c)3 nonprofit organization, the three branches of the Diaper Bank of North Carolina provide diapers to community-based organizations working with low-income North Carolina families. Disposable diapers, baby wipes, and diaper rash cream are distributed from the regional diaper bank branches to local community-based organizations. These organizations provide a range of services and resources to low-income families in the community including: parenting education, housing, job training, healthcare services, and also distribute the diapers and other items directly to families in need. All but two organizations deliver the diapers during home visits; the remaining provide diapers and other material support (e.g., food, clothes, baby equipment) at their facilities. At the time of the staff member interviews, family survey, and first five family interviews, each family received a supplemental supply of 25 diapers per child each time they received diapers. During the time when the remaining 10 family interviews were conducted, the diaper bank increased the quantity of diapers distributed to 50 diapers per child. At the time of this evaluation, the primary mode of financial support for the Diaper Bank of North Carolina were individual community members who donated diapers and money towards the bulk purchase of diapers.

In the spring of 2014, the Diaper Bank of North Carolina experienced a theft of diapers (Dave, 2014). In the days that followed, community members reported being approached by people selling diapers packaged with the diaper bank's labeling (Dave, 2014). The ensuing media coverage increased community awareness about the Diaper

Bank of North Carolina as a local resource, resulting in both increased donations and requests for diapers (Wilson, 2014). The incident occurred three months prior to the start of data collection and may have had some influence on perceptions and awareness of the Diaper Bank of North Carolina. Although the theft was not the subject of any of our interview or survey questions, it was noteworthy to three community-based organization staff members who mentioned it during interviews.

### **Study Design**

The design of our study allowed us to address our aims by gathering data from the perspective of community-based organization staff members who serve diaper recipient families, and then from recipient families themselves. This study was approved by the Institutional Review Board at the University of North Carolina at Greensboro.

**Staff member interviews.** We interviewed community-based organization staff members (n=9) who distribute products from the diaper bank to their clients about their experiences distributing diapers. All staff members who distributed diaper bank products to their clients received an email invitation to participate in the study. Those interviewed represented seven of the 12 organizations distributing diaper bank products at the time interviews were conducted. As the diaper bank does not serve clients directly, these interviews were integral to our initial understanding of diaper recipients so that we could best prepare for collecting data from families. We used a focused interview guide (Merton, Fiske, & Kendall, 1990; Yin, 2009) to ask each key informant about diaper bank practices and suggestions for improvement, including: whether the organization distributes diapers to all clients or to select clients and why, ways the organization uses

the diapers as incentives to program participation, clients' knowledge about the diaper bank, suggestions for what the diaper bank could do differently to benefit families, and anything the key informant thought would be important for us to include on our survey for families (Table 3). Each interview was digitally recorded and transcribed verbatim. We used findings from these interviews to develop of the survey that we then distribute to diaper recipient families.

**Community-based organization staff member demographics.** The staff members who participated in the interviews were paid employees of community-based organizations who distribute items from the diaper bank to families in need. Within their organizations, they served as substance abuse counselors (n=2), program managers (n=2), home-based visiting staff (n=3), and family care coordinators (n=2). The community-based organization staff members who participated represented seven different agencies providing social services for: substance abuse treatment, homelessness, early childhood education, parenting education, support for developmental disabilities and traumatic brain injuries, and pantries for clothing and baby items or food.

**Family surveys.** The community-based organization staff members distributed surveys to their clients along with postage-paid envelopes for mailing the completed survey to research staff. Recipient families (n=150) completed the survey in either English or Spanish to assess: demographic and household characteristics, experiences receiving diapers including wait time, actions taken with any extra diapers received, and additional diaper-related information families would like the diaper bank to provide. To gauge families' knowledge about the diaper bank's funding sources and volunteer staff,

survey respondents indicated whether statements about the organization were true, false, or whether the participant did not know the answer. The findings informed the development of the recipient family interview guide.

**Diaper recipient survey respondents.** Survey respondents identified as: African American or Black (42%), Latino or Hispanic (42%), White (9%), Asian (3%), American Indian or Alaska Native (1%), and with two or more races (4%). Of the Latino families in our study, 80% completed the survey in Spanish.

Families reported first learning about the diaper bank from a variety of sources including: a friend (39%) or family member (14%), the community-based organization that gave them the diapers (34%), a news story (4%), or from the Internet (1%). Some participants did not have any awareness of the diaper bank at the time they received diapers and completed the survey (8%). Two-thirds of families reported receiving diapers from one community-based organization, with 28% receiving them from two different organizations, and 5% receiving them from three or more organizations.

**Family interviews.** English-speaking diaper recipients (n=15) participated in brief face-to-face interviews about their experiences receiving assistance from the diaper bank. Interviews took place during a regularly scheduled diaper distribution at a community-based organization. Families invited to participate were chosen from a convenience sample of those receiving diapers at the time research staff were present. Interviews were brief by design (averaging 8 minutes, range 5-12 minutes) so they could be completed while families waited to receive services without losing their spot in line or missing public transportation home. Our focused interview guide asked about

families' experiences receiving diapers from community-based organizations, suggestions for improving the process of receiving diapers, and about ways they thought the diaper bank could better help families in the future (Table 3). Each interview was digitally recorded, transcribed verbatim.

**Diaper recipient interview participants.** Fourteen mothers and one father participated in face-to-face interviews. Four of the women were single mothers; the rest of the participants represented two-parent households. Interview participants identified as: Black or African American (n=10), Asian (n=2), White (n=2), and Latina (n=1).

**Table 3. Semi-structured Interview Questions**

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**Questions for community-based organization staff members who distribute diapers**

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Can you tell me about your organization? What you do and who you serve?

What do you think would be important for us to understand about the families you serve?

Can you tell me about the way your organization distributes diapers from the diaper bank?

Does providing the diapers for clients allow you to serve them differently? In what ways?

How do your clients feel about receiving the diapers?

What do you think your clients understand about the diaper bank where the diapers come from?

Do clients ever ask where the diapers come from? What have clients told you about receiving the diapers?

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What do you think could be done to improve the process by which the diaper bank distributes diapers to families who need them?

Is there anything you think would be important for us to know as we create a survey for people who have received diapers?

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**Questions for diaper recipient families**

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Do you have any questions about the diaper bank?

Are there other places or organizations you have received diapers from before?

Are there other organizations or places in the community you visit regularly to receive other services?

Can you tell me about receiving the diapers?

Is there anything you would like to change about receiving the diapers?

Do you think the diaper bank could do something different to help families?

Is there anything else you would like to share?

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**Analysis**

**Qualitative analysis.** After listening several times to recordings of the first few community-based organization staff member interviews, the first author began to develop a codebook of themes. As more themes emerged from subsequent interviews, we added additional themes to the codebook using an inductive approach (Seale, Gobo, Gubrium, & Silverman, 2004). A codebook of themes from the interviews with recipient families was created per these same procedures. To address inter-rater reliability, the first author

and a Graduate research assistant, independently coded all interview transcripts then discussed differences in their coding until reaching mutual consensus (Barbour, 2001).

**Quantitative analysis.** Data collected from the diaper recipient family surveys were analyzed using descriptive statistics.

## **Results**

The interviews with community-based organization staff members and diaper recipient families revealed the two themes detailed below. Within the first theme, recognizing the diaper bank as a community-based resource, we identified five subthemes centering around the ways that families demonstrated recognition. Table 4 lists the subthemes and provides illustrative quotes for each. Within the second theme, program improvement, we identified participants' suggestions for improving the experience of receiving diapers. Table 6 lists provides illustrative quotes for these suggestions.

### **Theme One: Recognition of the Diaper Bank as a Community Resource**

In response to an interview question about what they thought families know about the diaper bank, community-based organization staff members described varying degrees of awareness. Most staff members (n=7) made a point to tell families about the diaper bank. One staff member felt that sharing the information would empower families to take ownership of the diaper bank since families could learn about additional organizations where they may also receive diapers. Another staff member who worked at an organization where diapers are distributed from a food and clothing pantry indicated that clients did not ask questions about the source of any of the material goods provided,

including the diapers. At other organizations, news about the theft prompted new and existing clients to inquire about the diaper bank.

Through sharing their knowledge and perceptions about the organization, families described actions and suggestions that expressed ownership of the organization (Table 4). During interviews, community-based organization staff members described families returning extra diapers in sizes their children had outgrown so others could use them. Through this action, families took ownership of the diaper bank. One-third of families indicated they had experienced a time when they had extra diapers previously received from the diaper bank. Some families reported multiple ways of distributing these extra diapers; specifically, families with extra diapers gave them to a friend, family member or neighbor (93%), returned the diapers to the community-based organization that distributed them (20%), gave the diapers to the child's daycare facility (5%), traded for a different size diaper (2%), or traded the diapers for something else they needed more (2%). No families reported selling the extra diapers.

Both community-based organization staff members and families alike desired opportunities for families to volunteer at the diaper bank. Staff members (n=2) wanted to bring clients to the diaper bank to volunteer, recognizing that it would provide families opportunities to: see themselves as capable of helping others even though they might need help themselves, recognize their own gifts and talents, and learn more about the diaper bank. The sentiment of wanting to volunteer at the diaper bank was echoed by diaper recipient families (n=3) who had previously volunteered and/or asked about future volunteer opportunities.

As news spread of the diaper bank’s theft, community-based organization staff members (n=3) described during interviews that families began to ask more questions about the diaper bank. Families expressed disbelief to community-based organization staff members that someone would steal from the diaper bank, taking the diapers away from families. In these reactions to the news about the theft, families expressed ownership of the diaper bank (see Table 4).

**Table 4. Community Ownership of the Diaper Bank**

Subtheme	Illustrative Quote
Returning extra diapers	<p>We gave them a good description about [the diaper bank] and it’s nice because sometimes they’ll give us diapers. When they’ll move up sizes and things like that and they’re like ‘well, we don’t need this anymore, so you can give that back to the diaper bank. Or give it to another family’ or things like that. And we’re like, ‘oh, we’ll give it back.’ So they also feel like they’re contributing back. -CBO #3 (<i>Parent Educator</i>)</p> <p>It’s very rare that we might have extra diapers but some, like, I had got some [size] one’s, but now she’s in [size] two’s, so she probably wore like 2 of those so I’m like, ‘Oh, let me give these to my neighbor. She has a baby now so she can use them.’ So usually if I have extra ones I try to give them to someone else who needs them, you know, because just in case. Diapers are expensive. -Family #9 (<i>African American mother from a household with three adults and three children</i>)</p>
Volunteering	<p>Everybody has talents and gifts that they can give. People might not know what that is, especially for a person with an Intellectual or Developmental Disability or a Traumatic Brain Injury, but to have that support of people helping them figure out what that is and how they can give back and help out. - CBO #9 (<i>Support for families with special healthcare needs</i>)</p> <p>I want to get my hands into a little bit more in the community. It makes me feel like, you know, there are still humans on this earth. With everything that goes bad you don’t get a lot of</p>

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	<p>good news, nowadays and I like to see people helping other people. It gives me HOPE that humanity will survive these crazy times. -<i>Family #7 (African American father from a two-parent household with 3 children)</i></p>
<p>Ownership in response to the theft</p>	<p>They were like ‘that’s my diapers that they, I think they took.’ ‘Someone took the diapers that I get, why would they?’. You know and how important that meant for them, and I did hear several families that I see say that. They were like... ‘why would they take my diapers?’ You know, and sort of ironically from that it just brought a lot more information to families [about the diaper bank] and they took more ownership of it. -<i>CBO #4 (Parent Educator)</i></p> <p>They are appalled at the fact that somebody would steal diapers. They’re like, ‘who would do that?’ and I think that it’s kind of in a weird way helped to increase awareness about the diaper bank in a good way because I’ve gotten a lot more questions since that was on the news. -<i>CBO #3 (Counselor)</i></p> <p>I only surmise that a lot more awareness grew when the diapers were stolen... so at least at that point we saw a big increase in the number of people coming. -<i>CBO #5 (material support for families)</i></p>
<p>Empowering families through ownership</p>	<p>Our clients understand exactly how it works because I make a point of letting them know that we have a partnership because I’m so thrilled for this partnership... The more resources that they know about that’s out there, the more educated they are and the more empowered they are to be able to help themselves. - <i>CBO #9 (Support for families with special healthcare needs)</i></p>
<p>Lack of ownership</p>	<p>I think that’s very common in the women that, that I work with. They don’t tend to look a gift horse in the mouth too closely. I mean if it’s coming to them and they’re not paying for it and it’s a gift they’re just like, ‘thanks.’ They don’t ask too many questions about it. -<i>CBO #3</i></p> <p>I am not sure of if clients, for the most part have much awareness of the diaper bank. I do refer to the diaper bank and it’s obviously on the labels. So, I’m not sure if there’s an understanding of that’s how we get our diapers. -<i>CBO #5</i></p>

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### **Recipients' knowledge of the diaper bank's organizational structure.**

Ownership of the diaper bank did not necessarily mean that families knew accurate information about the organization. Table 5 documents families' knowledge about elements of the diaper bank's organizational structure. One community-based organization staff member (#8) described, "*Sometimes what they think is a misperception. You know, 'it's a government program, somebody's getting paid to do it and somebody's probably getting paid a lot to do it.' That's not the case at all.*" Although funding and staffing is integral to the implementation of the diaper bank's programming, recipients were not necessarily aware of this information. However, upon learning about the volunteers and community donations that fuel the organization, an African American father from a two-parent household with three children (Family #7) expressed appreciation, "*Yeah, wow, yeah wow. I love knowing about stuff like that.*"

**Table 5. Inconsistencies of Knowledge about the Diaper Bank as a Community-based**

**Resource**

<b>Statement</b>	<b>Correct Answer</b>	<b>% Correct</b>
Diapers are donated from big companies like Huggies® and Pampers®	FALSE	6%
Most diapers donated from people and families in the community	TRUE	38%
Most of the funding is from the government	FALSE	10%
Most of the funding is donated by people and families in the community	TRUE	37%
Workers are paid employees	FALSE	29%
Workers are volunteers	TRUE	51%

## **Theme Two: Program Improvement**

During interviews, community-based organization staff members and families offered program improvement suggestions, including ideas for improving the distribution process. The illustrative quotes in Table 6 are organized based upon which entity would be best suited to implement the suggestion. The long wait time to receive assistance at agencies who do not make home deliveries was something mentioned by both community-based organization staff and families. Recognizing that the amount of time families must allocate to receiving diapers also includes travel time, survey questions also assessed families' means of transportation and time spent traveling. Excluding families who received diapers during home visits, participants who traveled to another location traveled an average of 8.5 miles. Half of the participants lived within 5 miles of the place where they received diapers (range = .5 to 30 miles). Most participants (91%) used only one mode of transportation to arrive at the place where they received diapers. Twenty percent of participants traveled via bus, 8% walked, and the rest arrived in a private vehicle driven by the participant (33%), a family member (16%), a friend (11%), or a neighbor (2%). Per survey responses, families spent on average, 17 minutes traveling to the diaper distribution location and another 38 minutes waiting to receive diapers. Thus, the average trip to receive assistance included one hour and 12 minutes for traveling and waiting. One family suggested preregistration could reduce the waiting time.

Aside from reducing the time spent waiting to receive diapers, community-based organization staff members and diaper recipient families described other ways they thought the diaper bank could better serve families in need. Families indicated interest in:



toilet training (64%), diaper bank volunteer opportunities (35%), cloth diapers (18%), how to know what size diaper was needed (17%), and how to talk to childcare providers about diapers (12%).

Families recognized the diaper bank as a resource for nonfood basic needs for health and hygiene. During interviews, they suggested that in addition to more diapers, diaper banks could provide deodorant and diaper wipes. To increase access to the diaper bank, families interviewed also suggested: distributing diapers via more food pantries and the social security office, a telephone hotline, a service that called families to ask if they needed help, and a delivery service for those without transportation.

**Table 6. Program Improvement Suggestions**

<b>Suggestion</b>	<b>Illustrative Quote</b>
<i>Suggestions community-based organizations could address:</i>	
Reduce waiting times	...it's so hard to stand in line. But for some reason I thought that at here [organization A] it would be different. But today here it's really crowded. At [organization B] you have to wait in line for like two-hours and then she would get frustrated, cry, and I wouldn't really enjoy going there. –Family #6 (Asian mother from a two-parent household with one child)
Preregistration to reduce waiting times at CBOs	I wish the process was faster... But some of them with babies, I've seen some of them with two kids and some of them are pregnant and it's hard to stand. There are no chairs for them so they have to stand. Preregistration would be great. But at the same time I understand maybe someone does not have internet access. –Family #6
<i>Suggestions community-based organizations and the diaper bank could address together:</i>	
Deliver diapers to families	If you're out of diapers and you have no way to get there-suppose you're down to your last dollar, and you can't get on the bus either, how are you getting [diapers]? ... 'cause I know that

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	if I could and I had the resources to do so, I'd be glad to volunteer to drop off diapers. <i>-Family #12 (African American mother from a two-parent household with four children including twins wearing diapers)</i>
Facilitate volunteer opportunities for recipient families	I think... giving parents the opportunity that do have transportation to come and volunteer at the diaper bank. You know, because they are giving back and they're investing and they're seeing where this wonderful assistance is coming from and I think that would be a great idea. <i>-CBO #2 (Parent Educator)</i>
<i>Suggestions the diaper bank could address:</i>	
Provide a hotline for assistance	I think if it was someone who had maybe run out of pampers and could not afford to go buy more if maybe there was a number that they could call to talk to somebody to help get them some pampers. <i>-Family #2 (African American single mother pregnant with three children)</i>

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## **Discussion**

Low-income families face many challenges in meeting their basic needs, including the need for diapers (Lange, Dáu, Goldblum, Alfano, & Smith, 2017; Massengale, Erausquin, & Old, 2016b; Massengale et al., 2017; Porter & Steefel, 2015; Smith, Kruse, Weir, & Goldblum, 2013). Current recipients' perceptions and suggestions for improvement and expanded programming provide insight into ways to improve knowledge about the diaper bank as a resource and subsequently improve access for others.

### **Enhancing Knowledge and Perceptions**

Our findings revealed that most diaper recipients incorrectly reported or were unaware that the Diaper Bank of North Carolina was anything other than sponsored by

the government and/or diaper manufacturers rather than existing as a volunteer-run organization relying on community donations. These misperceptions suggest there may be community members experiencing diaper need who incorrectly assume they may be ineligible to receive diaper bank assistance bank if they have previously been ineligible for government safety net programs (e.g., SNAP, WIC, housing programs) or are leery of involvement with an entity they presume is government run. Of the twelve organizations that distributed diaper bank products, one provided items only at its facility shared with government offices, and three home-based visiting programs were either fully or partially government funded. In a changing political climate, immigrant families' concerns about receiving services from government entities are amplified.

Given the effort and time low-income families spend meeting their basic needs (Elmes, 2016; Fiese, Koester, & Waxman, 2014; Lange et al., 2017), it is understandable that families may not desire information about the organization beyond the knowledge that the resource exists. This may be true for the 8% of diaper recipient families who indicated on the survey that they were not aware of the diaper bank, despite completing the survey at the time they received diapers. Other families may not be aware that the diaper bank is an entity separate from the organization providing them services along with diapers and are therefore likely also unaware the diaper bank, as a separate community-based resource, could also provide them assistance via multiple organizations.

For families knowledgeable about the diaper bank's operations, understanding the organization's mission did matter as evidenced by families' desire to return or give away

diapers in the wrong size or that they no longer needed so that another family might use them. In this way, families demonstrated ownership of the organization and their desire to help others. Brief statements on the labels of items distributed could inform families about the ways the diaper bank serves and is served by the community, thus building confidence in and brand recognition of the organization. A brief statement about the community donations and volunteers that allow the diaper bank to operate may improve community perceptions and awareness about the organization. As suggested by the father appreciative of learning about the diaper bank's volunteers and community donations, families may feel a sense of community support knowing that others cared about their health and well-being and donated diapers, money, and time to help in their time of need.

Although the theft was not the subject of any of the questions on our interview guide, the event was described by some community-based organization staff members as a seminal event leading to increases in both awareness of the diaper bank as a community resource and the number of families requesting diapers. However, our quantitative findings revealed only 4% of survey recipients reported first learning about the diaper bank via news media. It is possible that the theft indirectly increased awareness of the diaper bank, possibly influencing the word-of-mouth advertising responsible for spreading awareness of the diaper bank to half of recipients surveyed.

### **Improving Service Delivery**

Families in our study noted considerable waiting times if they received diapers at community-based organizations. The challenges of long wait-times, limited seating, and the necessity of occupying young children while waiting may cause some families to

consider whether visiting the organization is worth their efforts. Similarly, negative experiences reported by food pantry recipients suggest that people accessing food pantries may indeed be those with only the most desperate needs (Loopstra & Tarasuk, 2015). It may be that those visiting the organizations in our study are those with the greatest need of diapers given the transportation arrangements and time required to receive assistance. The finding that families felt inspired to volunteer or consider volunteering in the future suggests receiving diapers was a positive experience.

Community-based organization staff members interviewed during our study noted that families receiving social services were not often invited to share their skills and time with the community. To receive SNAP benefits, able-bodied adults without dependents must meet requirements for employment, school or job training attendance, or workfare (state-sponsored unpaid work) participation (USDA, 2017). Although there were families in our study receiving SNAP benefits, some may be exempt from the work, school, or volunteer requirement as they were caring for dependent children. Diaper recipient families face many complexities in meeting their basic needs and in addressing challenges of daily living (Massengale et al., 2016b). However, opportunities to volunteer at the diaper bank on a truly voluntary basis and not as a requirement to receive basic needs may be rewarding for families, instill in their young children the community value of volunteerism, and empower parents to realize their talents. More than one-third of families surveyed indicated they were interested in information on volunteering, suggesting that some families would be receptive to the opportunity. Volunteering has positive health benefits (Swinson, 2006), can boost confidence as volunteers apply

existing skills or develop new skills potentially marketable to future employers (Bussell, & Forbes, 2002), and is positively correlated with life satisfaction (Meier & Stutzer, 2008). Experiences of diaper need may be fluid, changing along with families' own circumstances such that during some months the opportunity to volunteer may be welcomed and during other times it would not be feasible.

Survey findings revealed that the diaper bank might also serve the community through sharing information. The fact that families expressed interest in a range of diaper-related topics suggests that recipients may view the diaper bank and/or the organization distributing the diapers as a trusted source for reliable information. Community members who develop awareness of a service in the community, then increase their knowledge of the service providing organization, may then develop confidence in the organization, and consequently be moved to become more involved as volunteers, donors, or recipients of other services provided (McDougle, 2014).

### **Limitations and Future Directions**

During our study, we only sought information about participants' knowledge about the diaper bank. We did not ascertain what families know about or whether they trust the community-based organization providing them diapers. Public perceptions about the community-based organizations distributing products on behalf of the diaper bank would also influence families' uptake of partner organization services, particularly from government-affiliated organizations in a changing political climate. Given that the diaper bank is currently serving only 9.4% of the estimated families in the county susceptible to

diaper need, additional research is needed to better understand barriers to access by identifying families experiencing diaper need who have not accessed the diaper bank.

The families who participated in qualitative interviews were selected from a convenience sample of English-speaking families who visited a community-based organization to receive diapers. Their experiences may differ from those of Spanish-speaking families and/or families who received diapers only during home visits.

### **Conclusion**

Families reported inconsistencies in their knowledge about the diaper bank that may influence some community members' uptake of diaper bank services. Families identified the diaper bank as a resource for nonfood basic needs for health and hygiene and desired information about diaper related topics and volunteer opportunities. Revising the content of the labels placed on distributed items may increase awareness of the organization, their services, and promote a sense of community ownership. Understanding recipients' perceptions about the diaper bank and suggestions for improvement can inform other communities working to address diaper need.

## CHAPTER V

### LOW-INCOME FAMILIES' HOUSEHOLD CHARACTERISTICS AND NEED FOR EXTRA DIAPERS BEYOND THE SUPPLEMENTAL QUANTITY PROVIDED BY A COMMUNITY-BASED DIAPER BANK

#### **Abstract**

As nonprofit organizations working to help families with young children living in poverty meet the basic need of diapers, diaper banks have a finite resource of donated diapers and funding to buy them. Little guidance exists for diaper banks to determine the quantity of extra diapers families need. During our mixed methods study, we interviewed (n=15) or surveyed (n=246) families at the time they received assistance about their experiences of diaper need, household characteristics, and need for extra diapers beyond the supply provided by a community-based diaper bank. We examined associations between household characteristics and experiences of diaper need to assess families' needs for additional diapers. Most families (77%), needed additional diapers beyond the supply provided, reporting a median of 13 additional diapers per child per month. Although household characteristics were individually associated with diaper need experiences, the strongest predictor of families' satisfaction with the number provided was whether a family received diapers multiple times monthly ( $\beta=0.861$ ,  $p<0.05$ ). Increasing the quantity provided to all families monthly would likely increase the number of families reporting satisfaction. However, increasing the quantity by the median



number of additional diapers needed would require the diaper bank to distribute 26% more diapers to families monthly.

**Key Words:** diaper need, diaper bank, poverty, child health

### **Introduction**

To address the economic, social, physical, and emotional consequences of diaper need, diaper banks provide a supplemental quantity of diapers to help families bridge the gap between the number they have and the number needed (Porter & Steefel, 2015). Families experience diaper need when they are forced to choose between spending money on a basic need such as housing, utilities, food, or soap, or purchase diapers (Raver, Letourneau, Scott, & D'Agostino, 2010). As nonprofit organizations working to help families with young children living in poverty meet this basic need, diaper banks have a finite resource of donated diapers and funding to buy them. Little guidance exists for diaper banks to determine the quantity of extra diapers families living in poverty need. Examining associations between families' household characteristics and experiences of diaper need can provide guidance for diaper banks to determine how many supplemental diapers to provide.

One household factor that might predict families' satisfaction with the quantity of diapers included in the supplemental supply is the age and number of children wearing diapers. Families with the youngest children require the most diapers daily (10-12 diapers daily for a newborn compared to 6-8 for a toddler) (Shin, 2005). When multiple children in a household wear diapers, families experience additional diaper-related

expenses, a cost for which Special Supplemental Nutrition Program for Women, Infants, and Children [WIC] or Supplemental Nutrition Assistance Program [SNAP] benefits cannot be used (Porter & Steefel, 2015).

Families and individuals who struggle to meet one basic need often struggle to meet multiple basic needs (Fiese, Koester, & Waxman, 2014). This was true of families with young children experiencing diaper need who also had trouble meeting other basic needs such as: food, rent, housing, utilities, car payments or repairs, gas for a vehicle, medicine or healthcare, soap, toilet paper, and toothpaste which affected their abilities to purchase diapers for their children (Massengale, Erausquin, & Old, 2016b). Therefore, another factor that might predict satisfaction with the quantity of supplemental diapers is the length of time families have received diapers. Families receiving products from a community-based diaper bank reported they were able to purchase food and pay bills as a result (Massengale et al., 2016b). Those families who have received assistance for longer than a few months may have had more opportunities to divert household income towards other basic needs, potentially feeling the supplemental diapers were positively impacting their overall household budgets.

Lastly, additional household characteristics that might predict families' satisfaction with the quantity of supplemental diapers are employment status and the number of adults living in the home. Previous research documenting benefits families experienced after receiving diaper bank assistance found that in 75% of recipient families an adult household member was employed and that one-third of recipient families were single-parent households (Massengale et al., 2016b). However, the study did not look at

differences in the benefits experienced based on employment status or whether the family was headed by a single parent. Families with an adult working outside the home or those with more than two adults in the home may have access to additional financial resources compared to families in which no one was working or compared to families led by single parents.

Diaper banks must consider sustainability and families' actual needs when determining how to supplement the number of diapers families' have for their children. The purpose of the present study was to describe experiences of diaper need among recipient families and test whether these experiences and household characteristics were associated with families' needs for additional diapers and satisfaction with the number of supplemental diapers provided. Given the limited existing research on diaper banks, we hypothesized that the families most likely to indicate satisfaction with the quantity received would have: 1) received diaper bank assistance more than once per month or longer than a few months, 2) had an adult household member employed outside the home, 4) had multiple adults in the household, or 5) no longer experienced diaper need after receiving assistance. We also hypothesized that families with children younger than a year or who were providing diapers for multiple children would indicate the number of supplemental diapers were not enough.

## **Methods**

### **Community Setting**

Located in Durham County, the Diaper Bank of North Carolina is a 501c(3) nonprofit organization whose mission is to address North Carolina families' needs for

nonfood basic needs for health and hygiene, including diapers. The diaper bank implements its mission through the provision of free disposable diapers, diaper wipes, and diaper rash cream to low-income families in three regions of the state. The diaper bank does not distribute diapers to families directly. Rather, the diaper bank has formed partnerships with community-based organizations already serving low-income families who distribute products to their clients. These organizations work to meet families' needs for things such as: shelter, substance abuse support, food and clothing, parenting education domestic violence support, assistance for refugee families resettling in the United States, and healthcare services (Massengale et al., 2017). Each community-based organization provided families with a monthly supplemental supply containing 50 diapers per child.

### **Study Design**

We used a mixed methods approach to understand families' household characteristics and how they influence the number of extra diapers needed and families' satisfaction with the quantity of supplemental diapers. Applying the convergent parallel design, quantitative and qualitative data collection occurred independently (Creswell & Plano Clark, 2011). The results of qualitative and quantitative data collection were compared after analysis. The Institutional Review Board at the University of North Carolina at Greensboro approved this study.

**Qualitative data collection.** Diaper recipient families (n=15) participated in brief face-to-face interviews about their experiences receiving assistance from the diaper bank. Interviewees were selected from a convenience sample of English-speaking families

receiving diapers on the days the first author and an Undergraduate research assistant visited the organizations distributing diapers. During the interviews, families were asked about household composition, employment status, factors that influenced whether the quantity of diapers provided was enough to meet their needs, about how many more (if any) extra diapers were needed beyond the supplemental supply received, and ways in which receiving the diapers influenced their experiences of diaper need (Table 7). The interviews were intentionally brief (averaging 8 minutes, range 5-12 minutes), to appeal to potential participants waiting to receive services. The short nature of the interviews necessitated that we build rapport quickly and were mindful of: transportation schedules, the presence of interviewees' small children, and the timing of the intake process at the organizations where interviews occurred. Families received an incentive of either a children's book or a gift bag of skincare items. The digitally recorded interviews took place in the Spring of 2015 and in December 2016 and were transcribed verbatim.

#### **Table 7. Qualitative Interview Guide**

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Please tell me the ages of any children in your household who wear diapers.

Has your child started toilet training yet?

How many other children are in your household who do not wear diapers?

How many adults, including you, are in your household?

Are any adults in your household working at this time? Looking for work?

Can you tell me about receiving the diapers?

-Probe, How long do the diapers last for your family? How many days?

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Are there days in the past month when it would have been helpful to have more diapers?

-Probe, About how many more diapers would it have been helpful to have?

Have there been times in the past year when you had to make a choice between buying diapers and spending money on something else you needed for your family?

Has receiving the diapers changed anything for your family?

-Probe, How is your day or week different when you have received the diapers?

-Probe, Have you noticed any changes in your child or children when you receive the diapers?

Has receiving the diapers changed the way you interact with your child or children?

-Probe, On days when you have received the diapers, do you feel more stress than usual? About the same amount of stress? Any less stress?

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**Quantitative data collection.** Families (n=246) completed surveys in English or Spanish at the time they received diapers. A native Spanish-speaker translated the English-language survey into Spanish. A second native-Spanish speaker translated the Spanish-language survey back into English. Survey questions measured: family characteristics, history of receiving diapers, diaper expenditures, and diaper need.

Community-based organization staff asked their clients to complete the surveys at the time families received diapers. Since organizations generally distributed diapers to families once per month, we provided community-based organization staff members with instructions to administer the surveys to their clients during a four-week period from December 2016-January 2017 to prevent organizations from distributing the survey to the

same clients more than once. Staff were asked not to provide surveys to any families who indicated they had already completed the survey for another organization.

Completed surveys were returned to the diaper bank by 7 of the 11 organizations distributing diaper bank products at the time. All families receiving diapers were eligible to complete the survey. The diaper bank's distribution records indicate organizations received diapers for approximately 436 children during this time. Families' responses indicate that 329 children were represented by the surveys completed. Therefore, we conservatively estimate the completed surveys represent 75% of children who received diapers as we do not know how many of the remaining 25% of children were from families who received diapers from more than one organization and declined to complete the survey again or how many additional children were served by organizations with diapers remaining from prior distributions.

The surveys returned contained varying amounts of missing data. Although the survey was limited to 1 page only, many families (n=174) completed the survey at agencies where they waited in line to receive services on a first-come, first-served basis. As questions at the top of the survey were completed with more frequency than questions at the bottom, it is possible that families stopped completing the survey when it was their turn to be served.

## **Measures**

**Experience of diaper need.** Diaper need was measured by the question, "*In the past year, has there been a time when you had to make a choice between spending money on diapers and spending money on something else for your family?*" Families who

answered “Yes” were asked to indicate whether they had to choose between diapers and basic needs of: food; rent or housing; utilities; car payment; gas for a vehicle; medicine or healthcare; and nonfood basic needs like soap, toilet paper, or toothpaste.

**Household members.** Respondents specified the ages of any children wearing diapers, the number of children in the household who were not wearing diapers, and the number of household adults. From these responses, we created a variable to indicate whether there were multiple children in the household wearing diapers, the age of the youngest child wearing diapers, and families headed by single parents.

**Employment status.** Respondents were asked to specify the number of adults in the household “working full-time,” “working part-time,” and “looking for work.” We collapsed these responses to create a variable indicating whether households had an adult who was currently working.

**Frequency of receiving diapers.** Respondents specified how often they received diapers from the diaper bank using the answer choices: every week, a few times a month, once a month, and every few months. We collapsed responses into two categories: families receiving diapers once a month or less often, and those receiving diapers more often than once a month.

**Duration of receiving diapers.** Respondents specified how long they had received diapers from the diaper bank using the answer choices: this is my first time, a few weeks, about a month, a few months, several months, about a year, and a few years. We collapsed responses into two categories, families who had received diapers for a few months or less, and those who had received diapers for more time.



**Number of extra diapers needed.** The number of extra diapers needed each month was calculated by multiplying numeric responses to the questions: “*In the past month, how many days did you not have enough diapers to change your child’s diaper as often as you wanted?*” and “*On the days when you have needed extra diapers, about how many MORE diapers did you need each day?*” If a respondent answered only the first question, we assumed all diapers were needed for those days. The number of diapers used daily was estimated as: newborn to 3-months, 12; 4-months to 8-months, 10; 9-months to 12-months, 8; and  $\geq 13$ -months, 6 (Porter & Steefel, 2015; Shin, 2005). For the 25 respondents who specified  $>15$  extra diapers per day were needed, the number was not multiplied by the number of days specified in question one as we assumed the number recorded “per day” was a total needed for the entire month.

**Satisfaction with the quantity of diapers received.** Families were asked to indicate whether the number of diapers received in the supplemental supply was “*not enough,*” “*just right,*” or “*too much.*”

## **Analysis**

**Qualitative data analysis.** The first author began creating the codebook of themes after reviewing the first few interviews. Using an inductive approach, more themes were created as they emerged from subsequent additional interviews (Seale, Gobo, Gubrium, & Silverman, 2004). Each interview transcript was coded independently by both the first author and a Graduate research assistant. To address inter-rater reliability, we discussed differences in coding until reaching mutual consensus (Barbour, 2001). Using the cross-case analytic approach, each family’s interview transcript was

viewed as a case of diaper need (Creswell, 2013; Yin, 2009). Patterns were assessed across the cases. Then, a family profile organized by themes, was created from each case.

**Quantitative data analysis.** Household characteristics were described with descriptive statistics. Individual household characteristics were analyzed using t-tests and chi-square tests to detect any significant differences in the number of extra diapers needed or families' satisfaction with the number of diapers received. Regression analyses tested multiple household characteristics as predictors of these same dependent variables.

## **Results**

Recipients provided insight into family characteristics, shared experiences of diaper need, indicated their needs for additional diapers, and reported satisfaction with the quantity of supplemental diapers received.

### **Family Characteristics**

**Interview participant demographics.** Most interviewees were female (n=14) and from two-parent households (n=11). Interviewees identified as: African American or Black (n=10), Asian (n=2), White (n=2), and Latino (n=1).

**Survey participant demographics.** Survey respondents represented a diversity of racial and ethnic identities (Latino, 56%; Black or African American, 34%; White, 5%; Asian, 3%; American Indian or Alaska Native, 1%; other identity, 1%). Further, 95% of Latino families chose to complete the survey in Spanish (n=125). Most participants were female (89%) with a median age of 31 years (range 18-65). One-quarter of adults were single-parents, half of households had two adults, and one-quarter of households had 3 or more adults. One child lived in 19% of households, two children in 27%, three children in

28%, and four or more children in 26% of households. Two-thirds of households had only 1 child wearing diapers, 28% had two, and 6% had three or more. The average age of children wearing diapers was 18-months old (range 1-60). Most households had a working adult (62%). The majority of households (93%) received federal food assistance (WIC and/or SNAP). Families (n=180) reported spending a median of \$40 a month on diapers, per child (range = \$0-\$125).

### **Experiences of Diaper Need**

During face-to-face interviews, families described factors in their lives that influenced their experiences of diaper need. For some households (n=8), unemployment, variable weekly income, a reduction in the number of hours worked, employment in a low-wage industry, or adult students impacted families' abilities to provide enough diapers for their children. For other families, diaper need was exacerbated by children's illnesses (n=3), which necessitated more frequent diaper changes, or by the need to send extra diapers to daycare (n=1).

Families employed a range of strategies to meet their children's need for diapers. Parents described putting their children's needs before their own, even if that meant that buying diapers would not allow parents to eat or purchase the soap or detergent the household needed. To address diaper need, some families used cloth diapers with varying success, one mother hoped to toilet train her child quickly, and others (n=8) visited multiple community-based organizations each month to receive diapers. The families profiled in Table 8 demonstrate the range of household characteristics and diaper need experiences represented among the families interviewed.

In the past year, 72% of survey respondents reported that their families had to make a choice between spending money on diapers and another basic need. Among those experiencing diaper need, families made choices between buying diapers and buying: food (63%); nonfood essential items for health and hygiene such as toilet paper, soap, or toothpaste (63%); gasoline for a vehicle (57%); housing (43%); utilities (35%); medicine or healthcare (24%); and vehicle loan payments or repairs (20%).

**Table 8. Family Profiles Describing Household Characteristics and Diaper Need for Selected Recipients**

<b>Family Characteristics</b>	African American, two-parent household with a 5 yo and 15-month old twins. Father works outside the home while mother parents at home.	African American father from a two-parent household with 10 yo, 5 yo, and 5-month old. Both parents work outside the home.	African American, single mother with a 5 yo, 2 yo, 1 yo, and pregnant. Parenting at home with no outside employment.	Asian, two-parent household with a 14-month old. Father is a full-time student while mother is parenting at home.	African American single mother with a 3.5 yo who stopped wearing diapers last week and a 12-month old. Works at a fast-food restaurant.
<b>Supplemental Diapers Received</b>	Receives diapers from 3 CBOs. 50 diapers last 6-7 days per twin.	Receives diapers from 1 CBO.	Receives diapers from 2 CBOs. Stretches 50 diapers per child to last about 2 weeks. Sees toilet training as a way to spend less on diapers.	Receives diapers from 2 CBOs.	Receives diapers from 2 CBOs. 100-125 diapers per month last 30 days, allowing for about 4 diaper changes daily.
<b>Experience of diaper need</b>	<i>“It became a decision between pampers or food and you know at one point, paying for rent... and there’s been times when I’ve had to make a homemade</i>	The family is saving money to buy a house but the father’s hours were recently cut at work so the household budget has been tight.	Prioritizes spending among nonfood essentials. <i>“You know, maybe instead of buying like dish detergent, or soap, or you know. Pampers</i>	Uses cloth diapers at home and saves the disposable diapers for when they go out of the home.	<i>“I might not eat and she eats and I buy the diapers, or, no diapers and both of us eat. But now [since receiving assistance from the diaper bank] it’s not like that.”</i>

	<i>pamper. I'm on YouTube like literally, 'homemade pamper.'"</i>		<i>come first. I make sure they dry before anything."</i>		
<b>Families' estimations of extra diapers needed</b>	Could use an extra 40 diapers per month, per twin. Twins were born premature and susceptible to diarrheal illnesses, requiring frequent diaper changes.	Could use an extra 20 diapers per month.	Could use an extra 100 diapers per month, per child. Children are required to bring diapers to daycare.	More disposable diapers would be helpful but she makes the supplemental quantity work since she uses cloth at home.	<i>"I have what I need. By the time I need more diapers it's the first of the month so I just go back out and get more diapers."</i>

**Extra diapers needed.** While some families (n=38) reported needing no additional diapers beyond the supplemental supply, most families (n=125) reported needing extra diapers each month beyond the quantity received from the diaper bank. Families reported needing a median of 13 extra diapers a month per child (range 1-200). Using independent samples t-tests, we tested household characteristics to detect significant differences in the number of extra diapers needed beyond the supplemental supply (Table 9). Families providing diapers for multiple children needed statistically significantly fewer additional diapers per child than other families. Those families making choices between spending money on diapers or on food needed statistically significantly more diapers than families who did not have to make this choice. Single parents reported needing statistically significantly fewer extra diapers per month than households with  $\geq 2$  adults. Other household characteristics did not reveal significant differences in the number needed.

Next, we used linear regression analyses to test multiple household characteristics as predictors of the number of extra diapers families needed per child. In our model, we included the predictors of: single parent households, receipt of federal food assistance (i.e., WIC or SNAP benefits), survey completion language, and whether multiple children in the household wore diapers. Having to choose between buying food and buying diapers and single-parent households were statistically significant predictors of the number of extra diapers needed (Table 10). When multiple household characteristics were taken into consideration, families choosing between food and diapers

needed 12 more diapers per child and single-parent households needed 13 fewer diapers per child than other households.

### **Satisfaction with Quantity of Supplemental Diapers**

Of diaper recipient families (n=209), 40% felt the quantity received was “not enough” whereas 60% of families felt it was “just right.” Using chi-square tests for association, we tested whether there was an association between household characteristics and families’ reported satisfaction with the quantity of diapers provided (Table 9). Families whose youngest child wearing diapers was younger than 1 year of age were statistically significantly more likely to indicate the number of supplemental diapers was “not enough,” as were families who received diapers monthly or less often. When comparing the choices made as a result of diaper need with families’ reported satisfaction, four significant differences were noted. Families who had to make choices between spending money on diapers or on: rent or housing, gas for their vehicle, medicine or healthcare, or other nonfood essentials for health and hygiene such as toilet paper, soap, and toothpaste instead of diapers were statistically significantly more likely to indicate the quantity of diapers was “not enough” compared to families who did not have to make those choices.

Last, we used logistic regression analyses to test a model with multiple household characteristics as predictors of families’ satisfaction with the quantity of diapers received. We tested predictors of: single parent households, receipt of WIC or SNAP benefits, survey completion language, receiving diapers more often than once per month, making choices between spending money on medicine or healthcare or diapers, spending on gas



for a vehicle or diapers, and spending on nonfood essentials for health and hygiene or diapers. In this model, the only statistically significant predictor of families' satisfaction with the quantity of supplemental diapers was receiving diapers more often than monthly.

**Table 9. Household Characteristics and Families' Need for Extra Diapers and Satisfaction with the Quantity of Supplemental Diapers**

	Extra Diapers Needed, per child			% Families Indicating Supplemental Supply was "Not Enough"		
	Mean (SD)	Mean (SD)	t			
	Yes	No		Yes	No	X <sup>2</sup>
Are multiple children in the household wearing diapers?	19.15 (22.86)	32.29 (45.69)	2.414*	52%	40%	2.315
Is the youngest child wearing diapers < 1 year of age?	30.74 (40.91)	23.52 (37.76)	1.106	51%	35%	3.877*
Did household make a choice between buying diapers and spending money on...						
Food	31.73 (39.63)	18.33 (30.44)	2.357*	45%	34%	2.502
Rent or housing	28.70 (34.45)	22.74 (36.23)	0.976	55%	32%	7.963**
Utilities	23.59 (29.79)	25.20 (37.93)	0.254	48%	36%	2.109
Car payment	19.97 (20.18)	25.82 (38.02)	1.113	54%	36%	3.033
Gas for a vehicle	26.61 (31.49)	22.66 (39.82)	0.683	49%	32%	5.077*
Medicine or healthcare	26.94 (30.22)	24.09 (37.14)	0.410	67%	33%	11.737***
Nonfood basic needs like soap, toilet paper, or toothpaste	28.40 (36.60)	20.37 (34.22)	1.392	50%	30%	7.852**

Does the household receive diapers more than once a month?	24.35 (45.64)	28.63 (36.20)	0.607	25%	44%	5.871**
Has the household received diapers longer than “a few months?”	25.15 (38.38)	28.60 (40.96)	0.547	36%	43%	1.012
Is the household headed by a single parent?	13.83 (19.89)	29.16 (40.02)	3.176 **	39%	39%	0.003
Was the survey completed in Spanish?	31.08 (38.87)	40.02 (44.38)	1.201	39%	41%	0.113
Is an adult in the household currently working?	26.15 (38.04)	19.55 (30.44)	1.048	38%	44%	0.466

\* $p < .05$ , \*\* $p < .01$ , \*\*\*\* $p < .001$

**Table 10. Regression Analyses for Number of Extra Diapers Needed and Satisfaction with Quantity Received**

Variable	Number of Extra Diapers Needed, per child (n=142)		Satisfaction with Quantity Received (n=150)	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>
Multiple Children Wearing Diapers	-11.693	.061		
Chose between Buying Diapers and...				
Food	12.015	.049*		
Medicine or Healthcare			-.916	.076
Vehicle Gas			-.257	.598
Nonfood Essentials			-.535	.292
Received Diapers Multiple Times per Month			.861	.038*
Survey Language	4.663	.462	.102	.797
Single Parent	-13.288	.047*	.262	.539
Receives Federal Food Assistance	6.285	.602	.565	.630
R <sup>2</sup>	.089			.150

*Notes:* Variables were coded as: Multiple children wearing diapers (0 = only one child in diapers, 1 = more than 1 child in diapers); Choosing between buying diapers and another basic (0 = did not have to make this choice, 1 = did have to make this choice); Received diapers multiple times per month (0 = families receiving diapers once a month or less often, 1 = receiving diapers more often than once a month); Survey Language (0 = Spanish, 1 = English); Single Parent (0 = Single Parent Household, 1 = Not a Single Parent Household); Receives Federal Food Assistance (0 = Receives Assistance, 1 = No Assistance).

\*  $p < .05$ .

## Discussion

During face-to-face interviews, families provided insight into their experiences of diaper need and a range of situational factors which influenced their abilities to purchase diapers. Needing diapers for daycare, children's illnesses, and variable employment were described by families. If children attend daycare outside of their homes, families are generally required to provide all the diapers needed for the duration of care, even if the childcare tuition or cost is subsidized (Smith, Kruse, Weir, & Goldblum, 2013). If parents or caregivers do not have enough diapers to send to childcare, adults may be forced to stay home with the child instead (Massengale et al., 2016b; Raver et al., 2010). Thus, parents must miss their own work, school, or job training obligations, which has implications for families' income and educational opportunities (Massengale et al., 2016b; Smith et al., 2013). Compared to families with higher paying jobs, low-income families are less likely to have paid employment leave (Clemans-Cope, Perry, Kenny, Pelletier, & Pantell, 2008). Parents in our study described the burden of needing extra diapers for daycare, extra diapers needed during children's frequent diarrheal illness, and the difficulty of meeting household expenses when work hours and take home pay were reduced.

Families interviewed also shared coping strategies they employed to address diaper need. Toilet training was described as a tool to reduce the duration a child required diapers. To save the money spent on diapers, some families experiencing diaper need may indeed push early toilet training before their children display developmental signs of readiness (Horn, Brenner, Rao, & Cheng, 2006; Porter & Steefel, 2015). Early attempts at

toilet training before a child shows developmental signs of readiness are not only unlikely to work but increase the risk of child abuse (American Academy of Pediatrics, n.d.; Schmitt, 2004). Other families described their use or attempted use of cloth diapers to reduce their need for disposable diapers. Families living in poverty may experience any number of challenges when using cloth diapers including: the cost of soap, water, and utilities needed for frequent loads of laundry, a lack of a washer and dryer in the home, transportation difficulties when bringing dirty diapers to a laundromat for washing, and childcare facilities which do not allow cloth diapering while the child is in care (Raver et al., 2010). Regardless of families' individual circumstances, the experience of diaper need is stressful for many families (Lange, Dáu, Goldblum, Alfano, & Smith, 2017; Massengale et al., 2016b; Smith et al., 2013).

We predicted that household characteristics would be important predictors of whether families' diaper need was met after receiving supplemental diapers from a community-based diaper bank. We hypothesized that single parent households and those needing to provide diapers for multiple children would have exacerbated experiences of diaper need. However, we found that both these characteristics were associated with need for a smaller number of extra diapers compared to other households. It is possible that due to the presence of only one adult in the home or having multiple young children, these families were eligible for additional services that helped to meet one or more of their other basic needs. Other characteristics that we hypothesized would be significant: receiving assistance for longer than a few months, having an employed household

member, and children younger than a year were not significantly associated with the number of extra diapers needed or families' satisfaction with the quantity received.

We predicted that families who were no longer experiencing diaper need (i.e., no longer having to choose between spending money on diapers or on other basic needs) after receiving diaper bank assistance would be likely to report needing fewer diapers and satisfaction with the quantity received. We did find that difficulty meeting certain basic needs in the face of diaper need were significantly associated with needing more extra diapers or with feeling that the quantity provided was "not enough." In practice, when forming new partnerships with community-based organizations, targeting agencies that address families' needs for food, affordable housing, transportation, healthcare, or nonfood hygiene products could reach additional families struggling to meet these needs and provide diapers for their children.

Although multiple household characteristics were individually associated with families' reports that the quantity of supplemental diapers provided was "not enough," when included in the same logistic regression model the only association that significantly predicted families' satisfaction was receiving diapers more than once per month. The community-based organizations providing diapers from the Diaper Bank of North Carolina each provide families with a quantity of 50 diapers per month per child. Some families do receive services from multiple community-based organizations each month, thus receiving a supply of diapers multiple times each month. Thus, receiving 100 or more diapers per month per child was the only significant household characteristic

associated with families' satisfaction when multiple household characteristics were compared.

### **Limitations**

Our study had several limitations. One diaper recipient interviewed indicated that it would have seemed ungrateful to say the help offered via the supplemental supply of diapers was not enough. To give what they believed were socially desirable answers and to appear appreciative, participants may have underreported their need for extra diapers, suggesting a potential threat to the validity of our findings about families' needs beyond the supplemental supply (Krumpal, 2013). Thus, the severity of families' diaper need may differ from that than reported.

Although our survey was limited to questions printed only on the front-side of one piece of paper, many surveys completed at agencies where families visit to receive diapers, as opposed to receiving diapers during home visits, were incomplete. Given the context of families' experiences receiving diapers at these locations- characterized by long waiting times with limited seating- families may have had trouble completing the survey along with intake paperwork required by the organization distributing diapers (Massengale et al., Chapter 4 Paper). In the future, reducing the number of questions asked may increase the number of complete surveys returned.

We asked about families' experiences of diaper need in multiple ways. Families indicated their satisfaction with the quantity of supplemental diapers, reported which choices they had to make about basic needs spending in the face of diaper need, and reported how many additional diapers were needed beyond those provided. Future



research with participants from multiple communities is needed to validate questions that ask about families' needs for diapers in a way that can be used as a screening tool by social workers, healthcare providers, community-based organization staff members, and others working with families living in poverty to help them meet their basic needs.

Families in our study indicated needing a wide range of 1-200 extra diapers per month per child in addition to the 50 diapers included in the supplemental supply. In a report commissioned by diaper manufacturer Huggies®, Raver et al. (2010) documented that families, who were not receiving a supplemental supply of diapers but needed extra diapers, needed an additional 44 diapers per month “to feel they have enough.” During face-to-face interviews with families, diaper recipients described stretching the supplemental supply such that diapers were not changed as frequently as recommended to maintain health. One challenge of our study is that for ethical concerns our IRB would not allow us to ask families about the frequency of diaper changes. Therefore, it is unknown how many families met recommendations for a healthy frequency of diaper changes or whether families were aware of such recommendations. Differences in the rate at which families changed their children's diapers could be due to gaps in health literacy, diaper need, or both. Future research collaboration with healthcare providers could explore diaper need and the frequency of diaper changes within the context of healthcare providers asking about health behaviors and making referrals to community-based diaper banks as appropriate.

## **Recommendations**

When predicting satisfaction, individual household characteristics were not as important as receiving diapers multiple times per month. Thus, families receiving 50 diapers at a time multiple times each month were more likely to be satisfied with the quantity received. Based on our findings, increasing the quantity of supplemental diapers provided by the median number of additional diapers needed, 13 more per child per month, would address some of the shortage of diaper need across the range of families' household characteristics. In practice, this would require an extensive expenditure of the diaper bank's limited resources to provide a 26% increase in the number of diapers provided to each family, possibly resulting in a limit in the number of new families that could also be served.

## **Conclusion**

Families receiving assistance from a community-based diaper bank still had need for diapers beyond the supplemental supply provided. While household characteristics were associated with families' needs for additional diapers, single-parent households and families providing diapers for more than once child needed significantly fewer diapers than other families. The strongest predictor of families' satisfaction with the number received was the frequency of receiving assistance. Increasing the number of diapers provided to families monthly by 13, the median number of extra diapers needed, would likely increase the number of families reporting satisfaction with the quantity of diapers received.

## CHAPTER VI

### DISCUSSION AND IMPLICATIONS

The purpose of this dissertation was to document a case study of diaper need in Durham County, North Carolina. Given the dearth of peer-reviewed research on diaper banks, little is documented about diaper recipients and the community context of diaper need. Therefore, this dissertation sought to explore: the unmet diaper need in the case community, diaper recipients' perceptions of the diaper bank in their community and suggestions for program improvement, and household characteristics associated with families' satisfaction with the number of diapers provided in the supplemental supply.

#### **Key Findings**

Of Durham County children under the age of 4 estimated to be susceptible to the experience of diaper need, only 9.4% have accessed the services of the local diaper bank. Families who have not accessed the diaper bank may be meeting their needs for diapers in other ways such as through support from family and friends (Massengale et al., 2016b). However, 77% of families who have received diapers indicated need for additional diapers beyond those provided by the diaper bank, needing a median number of 13 additional diapers each month per child. Assessing multiple household characteristics as predictors of families revealed that the only statistically significant predictor of families' satisfaction with the number of diapers provided was receiving

diapers more than once a month, thus receiving 100 or more diapers a month rather than the standard supply of 50 per child monthly.

### **Reflection**

This dissertation sought to identify low-income families' perceptions of their local diaper bank as well as patterns among their experiences of diaper need and household characteristics that could be statistically associated with their needs for additional diapers. The intended outcome was providing the local diaper bank with a set of recommendations, informed by the dissertation findings, to 1) bolster recipients' perceptions of the diaper bank and 2) systematically reduce diaper need among Durham County, NC families. Although the representative recipients expressed a range of household characteristics and experiences in common, discernable characteristics could not unequivocally produce a formula for meeting families' diaper need. Thus, no set of household characteristics predict which families will need more assistance in addressing diaper need. The contribution of this dissertation is instead, a recommendation to increase the quantity of supplemental diapers for all families in an effort to help the greatest number of families while conserving the diaper banks' limited resources.

An important distinction to note, is that families reported how many additional diapers they thought they needed. However, the frequency with which they changed their children's diapers is unknown. During the face-to-face interviews, families described changing children's diapers less than four times per day which is below the rate recommended for children of any age to prevent infection and maintain hygiene (Shin, 2005). Increasing the quantity of diapers in the supplemental supply as recommended

may indeed increase the number of families who report satisfaction with the quantity received, however the quantity provided may still be inadequate for following healthcare providers' guidance for the frequency of diaper changes.

One limitation of this dissertation is the amount of missing data- specifically the number of surveys returned partially completed. Families who completed the survey when it was provided to them by an agency during a one-on-one home visit were more likely to answer all of the questions compared to families who were provided the survey to complete while they waited at the agency's locale to receive services. It could be that the relationship built over time with home visiting staff members was instrumental in encouraging families to take the time to complete all the questions. Or, perhaps during home visits there was less paperwork to complete compared to the agency paperwork required of families waiting in-line to receive services, thereby making the task of completing the one-page survey less imposing for families. Perhaps the presence of home visiting staff allowed parents the opportunity to complete the survey without concern for keeping an eye on their children while doing so. Families receiving services on a first-come, first-serve basis may have felt little commitment to finish completing the survey once it was their turn to be served. In the future, limiting questions to a half-page instead may reduce the burden for families waiting in-line.

### **Research Significance**

The findings of this dissertation provide guidance for addressing diaper need not only in Durham County, North Carolina, but in other under-resourced communities across the country. Estimating the number of children in the county at risk for diaper need

provide data needed to set benchmarks towards reducing diaper need in the community and document a method for estimating diaper need on a greater scale. Diaper recipient families' perceptions of their local diaper bank including their suggestions for program improvement, document gaps in community members' awareness of the diaper bank as a Durham County community resource and have implications for reaching families in need who have not yet accessed the diaper bank. Assessing associations between families' household characteristics, their needs for additional diapers beyond those provided, and satisfaction with the quantity received provide insight into the intricacies of determining how many diapers the diaper bank should provide families to best supplement their needs while conserving their limited resources.

### **Implications for Practice**

To address gaps in diaper recipients' knowledge of the diaper bank, including a brief statement on diaper bundle labeling about the community donations and volunteers that allow the diaper bank to operate may improve community perceptions and awareness about the organization. Such a statement may help to increase awareness in the community about the diaper bank as a nongovernmental resource available for those in need. Recipient families may feel a sense of community support knowing that others in their community care about their health and well-being and donated diapers, time, and money to help in their time of need. Further, inviting diaper recipient families to join in this community effort to address diaper need may allow families to experience additional benefits beyond the outcomes experienced as a result of receiving a supplemental supply of diapers.

Although many healthcare providers recognize that the social determinants of health impact their patients' health (Chung et al., 2016), few have received training to specifically screen for them and make referrals when indicated (Naz et al., 2016). Healthcare providers could identify local resources in their communities that help families to address diaper need, ask families about experiences of diaper need, and then make referrals to community-based diaper banks or other organizations as appropriate (Porter & Steefel, 2015).

Community members could contribute to efforts to address diaper need by telling others about the issue and consider donating time, money, or extra diapers to their local diaper bank. Addressing diaper need would allow low-income families with young children to experience health, social, and economic benefits when their needs for diapers are met (Massengale et al., 2016b), and thereby improve population health for all (Fraze et al., 2016). In addition, supporting the work of diaper banks also assists the community-based organizations who distribute the diapers in addressing families' needs beyond diapers (Massengale et al., 2017).

To increase the number of families indicating the quality of supplemental diapers is "just right," a general recommendation is to increase the overall number of diapers provided to families by the median number of extra diapers needed, 13. In practice, this would require tapping into the diaper bank's limited resources to provide a 26% increase in the number of diapers provided to each family each month. As a result, the number of new families that could also be served by the diaper bank may be limited.

## **Implications for Policy**

Quite possibly the most impactful way to address families' needs for additional diapers is through policy change. One change at the state level that would affect families' diaper expenditures is repeal of state sales tax on diapers (Weir, 2017). At the national level, the amendment of federal policies such as the Public Health Service Act to allow for the provision of diaper demonstration projects and the allocation by states of federal block grants such as Temporary Assistance for Needy Families [TANF] for the purchase of diapers, would support the infrastructure created by diaper banks for addressing diaper need and increase individual families' access to the health resource of diapers (City and County of San Francisco, 2015; H.R. 1143, 2017). However, in the midst of a national political climate rendering bipartisan support for such legislation unlikely (Civic Impulse, 2016) and a state political climate unlikely to address sales tax on diapers at this time, healthcare providers, social service providers, and community members alike are called upon to address diaper need.

## **Implications for Research**

During interviews with recipient families it was revealed that some families change their children's diapers less often than is recommended to maintain health and prevent infection. Future research collaboration with healthcare providers could explore diaper need and the frequency of diaper changes within the context of healthcare providers asking about health behaviors and making referrals to community-based diaper banks as appropriate. The results of such efforts have implications for preventing dermatological and urinary tract infections.



Future research could build on the findings of this dissertation by exploring the ways in which addressing all of a family's diaper need, rather than supplementing their need, allows family members to address chronic health concerns or to meet other health goals. When families spend a significant portion of their time meeting their basic needs, including acquiring the nonfood essentials needed for health, hygiene, and survival, it detracts from the time they could spend having meaningful interactions with each other, meeting personal educational and career goals, and actively participating in society.

### **Conclusion**

Durham County, North Carolina families living in poverty experience challenges meeting the basic need of diapers for their young children. The experiences of families currently receiving services from the Diaper Bank of North Carolina provide a foundation for better serving existing clients and expanding services to help additional families in the future so that all North Carolina families with young children may experience the dignity that comes from having their basic hygiene needs met.

## REFERENCES

- Adalat, S., Wall, D., & Goodyear, H. (2007). Diaper dermatitis: Frequency and contributory factors in hospital attending children. *Pediatric Dermatology*, 24(5), 483-488.
- Allard, S. (2011). Nonprofit helping hands for the working poor: New realities and challenges for today's safety net. In R. D. Plotnick, J. Romich, M. K. Meyer & S. R. Smith (Eds.), *Old assumption, new realities: Ensuring economic security for working families in the 21st century* (pp. 187-213). New York: Russell Sage Foundation.
- American Academy of Pediatrics (n.d.). *Practice guide: Toilet training*. Retrieved from: <https://www2.aap.org/sections/scan/practicingsafety/Modules/ToiletTraining/ToiletTraining.pdf>
- American Academy of Pediatrics, American Public Health Association, & National Resource Center for Health and Safety in Child Care and Early Education. (2011). *Caring for our children: National health and safety performance standards; Guidelines for early care and education programs* (3rd ed.). Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American Public Health Association. Retrieved from: [http://cfoc.nrckids.org/webfiles/CFOC3\\_updated\\_final.pdf](http://cfoc.nrckids.org/webfiles/CFOC3_updated_final.pdf)
- Annie E. Casey Foundation, KIDS COUNT Data Center. (2016). *Children below 200 percent poverty*. Retrieved from: <http://datacenter.kidscount.org/data/tables/47-children-below-200-percent-poverty#detailed/2/2-52/false/573,869,36,868,867/any/329,330>
- Barbour, R. S. (2001). Checklists for improving rigour in qualitative research: A case of the tail wagging the dog? *BMJ*, 322(7294), 1115-1117.
- Blair, C., & Raver, C. C. (2016). Poverty, stress, and brain development: New directions for prevention and intervention. *Academic Pediatrics*, 16(3), S30-S36.
- Bussell, H., & Forbes, D. (2002). Understanding the volunteer market: The what, where, who and why of volunteering. *International Journal of Nonprofit and Voluntary Sector Marketing*, 7(3), 244-257.

- Cashman, K. (2015). *The hygiene assistance for families of infants and toddlers act will help the poor pay for diapers*. Center for Economic and Policy Research. Retrieved from: <http://www.cepr.net/blogs/cepr-blog/the-hygiene-assistance-for-families-of-infants-and-toddlers-act-will-help-the-poor-pay-for-diapers>
- Chung, E. K., Siegel, B. S., Garg, A., Conroy, K., Gross, R. S., Long, D. A., . . . Wade, R. (2016). Screening for social determinants of health among children and families living in poverty: A guide for clinicians. *Current Problems in Pediatric and Adolescent Health Care*, 46(5), 135-153.
- City and County of San Francisco, Department of Human Services. (2015). *Memorandum: New grant. Community initiatives fiscal sponsor to Help a Mother Out (Non-profit) to provide TANF diaper bank services*. Retrieved from: <http://www.sfhsa.org/asset/HumanServicesCommission/022615V8IF.pdf>
- Clark-Greuel, J. N., Helmes, C. T., Lawrence, A., Odio, M., & White, J. C. (2014). Setting the record straight on diaper rash and disposable diapers. *Clinical Pediatrics*, 53(9 suppl), 23S-26S.
- Clemans-Cope, L., Perry, C. D., Kenney, G. M., Pelletier, J. E., & Pantell, M. S. (2008). Access to and use of paid sick leave among low-income families with children. *Pediatrics*, 122(2), e480-486.
- Creswell, J. W. (2016). *30 essential skills for the qualitative researcher*. Los Angeles, CA: Sage.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Los Angeles, CA: Sage.
- Creswell, J. W. & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: Sage.
- Dave, P. (2014, June 3). 13,000 diapers for needy families stolen from North Carolina church. *Los Angeles Times*. Retrieved from: <http://www.latimes.com/nation/nationnow/la-na-nn-diaper-bank-north-carolina-theft-20140603-story.html>
- Elmes, M. B. (2016). Economic inequality, food insecurity, and the erosion of equality of capabilities in the United States. *Business & Society*. Advance online publication. doi: 10.1177/0007650316676238
- Federal Communications Commission. (2016). *Lifeline program for low-income consumers*. Retrieved from <https://www.fcc.gov/general/lifeline-program-low-income-consumers>

- Feeding America. (2016). *What is a food bank?* Retrieved from <http://www.feedingamerica.org/about-us/how-we-work/food-bank-network/what-is-a-food-bank.html>
- Fiese, B. H., Koester, B. D., & Waxman, E. (2014). Balancing household needs: The non-food needs of food pantry clients and their implications for program planning. *Journal of Family and Economic Issues*, *35*(3), 423-431.
- Flaskerud, J. H., & Winslow, B. J. (1998). Conceptualizing vulnerable populations health-related research. *Nursing Research*, *47*(2), 69-78.
- Fraze, T., Lewis, V. A., Rodriguez, H. P., & Fisher, E. S. (2016). Housing, transportation, and food: How ACOs seek to improve population health by addressing nonmedical needs of patients. *Health Affairs*, *35*(11), 2109-2115.
- Friedlander, S., Eichenfield, L., Leyden, J., Shu, J., & Spellman, M. (2009). Diaper dermatitis: Appropriate evaluation and optimal management strategies. *Contemporary Pediatrics*, (sSuppl), 2-14.
- Gross, D., Julion, W., & Fogg, L. (2001). What motivates participation and dropout among low-income urban families of color in a prevention intervention? *Family Relations*, *50*(3), 246-254.
- Handy, F., Seto, S., Wakaruk, A., Mersey, B., Mejia, A., & Copeland, L. (2010). The discerning consumer: Is nonprofit status a factor? *Nonprofit and Voluntary Sector Quarterly*, *39*(5) 866–883.
- Horn, I. B., Brenner, R., Rao, M., & Cheng, T. L. (2006). Beliefs about the appropriate age for initiating toilet training: Are there racial and socioeconomic differences? *Pediatrics*, *119*(2), 165-168.
- Hygiene Assistance for Families of Infants and Toddlers Act of 2017, H.R. 1143, 115<sup>th</sup> Cong. (2017).
- Jiang, S., Davis, L., De Mleo, H. T., & Terry, J. (2013, January). Using data mining to analyze donation data for a local food bank. In *Proceedings of the International Conference on Data Mining*. The Steering Committee of the World Congress in Computer Science, Computer Engineering and Applied Computing.
- Jiang, Y., Ekono, M., & Skinner, C. (2015). *Basic facts about low-income children: Children under 6 years, 2013*. New York: National Center for Children in Poverty, Mailman School of Public Health, Columbia University. Retrieved from: [http://www.nccp.org/publications/pub\\_1100.html](http://www.nccp.org/publications/pub_1100.html)

- Katz, K. S., El-Mohandes, A., Johnson, D. M., Jarrett, M., Rose, A., & Cober, M. (2001). Retention of low income mothers in a parenting intervention study. *Journal of Community Health, 26*(3), 203-218.
- Koegel, P., Melamid, E., & Burnam, M. A. (1995). Childhood risk factors for homelessness among homeless adults. *American Journal of Public Health, 85*(12), 1642-1649.
- Kohn, L. T. (1997). *Methods in case study analysis*. Technical Report No. 2. The Center for Studying Health System Change.
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity, 47*(4), 2025-2047.
- Lange, B. C., Dáu, A. L. B., Goldblum, J., Alfano, J., & Smith, M. V. (2017). A mixed methods investigation of the experience of poverty among a population of low-income parenting women. *Community Mental Health Journal, 1-10*. doi:10.1007/s10597-017-0093-z
- Loopstra, R., & Tarasuk, V. (2015). Food bank usage is a poor indicator of food insecurity: Insights from Canada. *Social Policy and Society, 14*(03), 443-455.
- Massengale, K. E. C., Erausquin, J. T., & Old, M. (2017). Organizational and health promotion benefits of diaper bank and community-based organization partnerships. *Children and Youth Services Review, 76*, 112-117.
- Massengale, K., E. C., Erausquin, J. T., & Old, M. (2016a, October). *Building parent-child relationships in the face of diaper need: The role of a community-based diaper bank*. Healthy Relationships, Healthy Lives Conference, Child and Family Research Network at the University of North Carolina at Greensboro, Greensboro, NC.
- Massengale, K. E. C., Erausquin, J. T., & Old, M. (2016b). Health, social, and economic outcomes experienced by diaper recipient families as a result of receiving diapers from a community-based diaper bank. *Manuscript under review*.
- Massengale, K. E., Morrison, S. D., & Sudha, S. (2016). Community health advocate-identified enablers of HIV testing for Latina immigrant women. *AIDS Education and Prevention, 28*(4), 325-340.
- McDougle, L. (2014). Understanding public awareness of nonprofit organizations: Exploring the awareness-confidence relationship. *International Journal of Nonprofit and Voluntary Sector Marketing, 19*(3), 187-199.

- Meier, S., & Stutzer, A. (2008). Is volunteering rewarding in itself? *Economica*, 75(297), 39-59.
- Merton, R. K., Fiske, M., & Kendall, P. L. (1990). *Focused interview: A manual of problems and procedures* (2nd ed.). New York: The Free Press.
- Miller, G. E., & Chen, E. (2013). The biological residue of childhood poverty. *Child Development Perspectives*, 7(2), 67-73.
- Milteer, R. M., Ginsburg, K. R., Mulligan, D. A., Ameenuddin, N., Brown, A., Christakis, D. A., ... & Levine, A. E. (2012). The importance of play in promoting healthy child development and maintaining strong parent-child bond: Focus on children in poverty. *Pediatrics*, 129(1), e204-e213.
- Mulatu, M. S., & Schooler, C. (2002). Causal connections between socio-economic status and health: Reciprocal effects and mediating mechanisms. *Journal of Health and Social Behavior*, 43(1), 22.
- Naz, A., Rosenberg, E., Andersson, N., Labonté, R., & Andermann, A. (2016). Health workers who ask about social determinants of health are more likely to report helping patients. *Canadian Family Physician*, 62(11), e684-e693.
- North Carolina Office of State and Budget Management. (2016). *County estimates, age group totals: July 1, 2015 county total age groups – standard*. Retrieved from: [https://ncosbm.s3.amazonaws.com/s3fs-public/demog/countytotals\\_agegroup\\_2015.html](https://ncosbm.s3.amazonaws.com/s3fs-public/demog/countytotals_agegroup_2015.html)
- Palloni, A., Milesi, C., White, R. G., & Turner, A. (2009). Early childhood health, reproduction of economic inequalities and the persistence of health and mortality differentials. *Social Science & Medicine*, 68(9), 1574-1582.
- Pickett, K. E., & Wilkinson, R. G. (2015). Income inequality and health: a causal review. *Social Science & Medicine*, 128, 316-326.
- Porter, S., & Steefel, L. (2015). Diaper need: A change for better health. *Pediatric Nursing*, 41(3), 143-144.
- Raver, C., Letourneau, N., Scott, J., & D'Agostino, H. (2010). *Huggies® every little bottom study: Diaper need in the U.S. and Canada*. (Report commissioned by Huggies).
- Schlesinger, M., Mitchell, S., & Gray, B. H. (2004). Restoring public legitimacy to the nonprofit sector: A survey experiment using descriptions of nonprofit ownership. *Nonprofit and Voluntary Sector Quarterly*, 33(4), 673-710

- Schmitt, B.D. (2004). Toilet training: Getting it right the first time: Successful toilet training benefits both parent and child. *Contemporary Pediatrics*, 21(3), 120-122.
- Seale, C., Gobo, G., Gubrium, J. F., & Silverman, D. (Eds.). (2004). *Qualitative research practice*. London: Sage.
- Shackman, G., Yu, C., Edmunds, L. S., Clarke, L., Sekhobo, J. P. (2015). Relation between annual trends in food pantry use and long-term unemployment in New York state, 2002–2012. *American Journal of Public Health*, 105(3), e63-e65.
- Shin, H. T. (2005). Diaper dermatitis that does not quit. *Dermatologic Therapy*, 18(2), 124-135.
- Simmet, A., Depa, J., Tinnemann, P., & Stroebele-Benschop, N. (2016). The nutritional quality of food provided from food pantries: A systematic review of existing literature. *Journal of the Academy of Nutrition and Dietetics*, 117(4), 577-588. doi: 10.1016/j.jand.2016.08.015
- Smith, M. V., Kruse, A., Weir, A., & Goldblum, J. (2013). Diaper need and its impact on child health. *Pediatrics*, 132(2), 253-259. doi:10.1542/peds.2013-0597.
- Stake, R. E. (1995). The art of case study research. *The Art of Case Study Research*. <http://doi.org/10.1108/eb024859>
- Stella, M. Y., Huang, Z. J., Schwalberg, R. H., & Kogan, M. D. (2005). Parental awareness of health and community resources among immigrant families. *Maternal and Child Health Journal*, 9(1), 27-34.
- Sugimura, T., Tananari, Y., Ozaki, Y., Maeno, Y., Tanaka, S., Ito, S., . . . Masunaga, K. (2009). Association between the frequency of disposable diaper changing and urinary tract infection in infants. *Clinical Pediatrics*, 48(1), 18-20. doi:10.1177/0009922808320696.
- Swinson, J. L. (2006). Focusing on the health benefits of volunteering as a recruitment strategy. *The International Journal of Volunteer Administration*, 24(2), 25-30.
- Tarasuk, V., & Eakin, J. M. (2003). Charitable food assistance as symbolic gesture: an ethnographic study of food banks in Ontario. *Social Science & Medicine*, 56(7), 1505-1515.
- Thompson, T., Kreuter, M. W., & Boyum, S. (2016). Promoting health by addressing basic needs effect of problem resolution on contacting health referrals. *Health Education & Behavior*, 43(2), 201-207.

- Tyler, E. T., Conroy, K. N., Fu, C. M., & Sandel, M. (2011). Housing: Intersection of affordability, safety and health. In Tyler, E. T., Lawton, E., Conroy, K. N., Sandel, M., & Zuckerman, B. (Eds.), *Poverty, health and law: Readings and cases for medical-legal partnership* (225-273). Durham, North Carolina: Carolina Academic Press.
- U. S. Department of Agriculture [USDA]. (2017). *Supplemental nutrition assistance program (SNAP): Able-bodied adults without dependents (ABAWDs)*. Retrieved from: <https://www.fns.usda.gov/snap/able-bodied-adults-without-dependents-abawds>
- van der Horst, H., Pascucci, S., & Bol, W. (2014). The “dark side” of food banks? Exploring emotional responses of food bank receivers in the Netherlands. *British Food Journal*, 116(9), 1506-1520.
- Weir, A. (2017). Fifty state survey on the sales tax treatment of diapers. Retrieved from: <http://nationaldiaperbanknetwork.org/wp-content/uploads/Sales-Tax-Survey-Jan-2017.pdf>
- Weir, A. (2015). Basic needs: Ensuring that every family has the things needed to reach their full potential. White Paper / Issue Brief. Retrieved from: <http://nationaldiaperbanknetwork.org/wp-content/uploads/2015/09/Basic-Needs-white-paper.pdf>
- Wilson, D. (2014, June 6). Donations pour in after diaper theft. *WTVD-TV Raleigh-Durham*. Retrieved from <http://abc11.com/news/donations-pour-in-after-diaper-theft/97996/>
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Los Angeles, CA: Sage.



## APPENDIX A

### SEMI-STRUCTURED INTERVIEW GUIDE FOR DIAPER RECIPIENTS

The following questions are meant to serve as a semi-structured guide and prompts for individual interviews with participants who have received diapers from the Diaper Bank of North Carolina.

1) Please tell me the ages of any children in your household who wear diapers.

-Probe, Has your child started toilet training yet?

-Probe, Did you know that the diaper bank and Welcome Baby also offer toilet training classes?

-Probe, How many other children are in your household who do not wear diapers?

-Probe, How many adults, including you, are in your household?

-Probe, Are any adults in your household working at this time? Looking for work?

2) We're here today at Welcome Baby, the diapers that are given out by Welcome Baby at the Giving Closet are from the Diaper Bank of North Carolina. Do you have any questions about the Diaper Bank of North Carolina?

-Probe, Are there other places or organizations you have received diapers from before?

-Probe, About how long have you received diapers from (fill-in organization participant listed above)?

-Probe, Would you still visit the Giving Closet at Welcome Baby if diapers were not provided?

-Probe, Did you know you can also get diapers at Urban Ministries?

-Probe, If participant is aware that Urban Ministries also gives out diaper bank diapers, What are some of the reasons why you not visited Urban Ministries to get diapers?

-Probe, If participant is not aware that Urban Ministries also gives out diaper bank diapers, Now that you know you can also get diapers at Urban Ministries, how likely do you think you would get diapers from there in the future?

-Probe, Are there other organizations or places in the community you visit regularly to receive other services?

3) Can you tell me about receiving the diapers?

-Probe, How long do the diapers last for your family? How many days?

-Probe, Are there days in the past month when it would have been helpful to have more diapers?

-Probe, About how many more diapers would it have been helpful to have?

-Probe, What advice would you give a friend who had run out of diapers and needed more?

-Probe, Have there been times in the past year when you had to make a choice between buying diapers and spending money on something else you needed for your family?

-Probe, Were you having to choose between spending money on food? Gas? Car payment or car repairs? Housing or rent? Paying a utility bill? Healthcare or medicine? Nonfood needs like soap or toilet paper? Something else?

4) Has receiving the diapers changed anything for your family?

-Probe, How is your day or week different when you have received the diapers?

-Probe, Have you noticed any changes in your child or children when you receive the diapers?

5) Has receiving the diapers changed the way you interact with your child or children?

-Probe, In what ways do you think you interact differently with your child or children when you have received the diapers?

-Probe, Do you find you are able to spend more time playing with or reading to your child or children when you have received the diapers?

-Probe, Can you tell me about diaper changes? During a diaper change, are you usually silent and not talking? Are you talking? Singing? Laughing? Is your child crying? Laughing? Smiling?

-Probe, On days when you have received the diapers, do you feel more stress than usual? About the same amount of stress? Any less stress?

6) Is there anything you would like to change about receiving the diapers?

-Probe, Do you think the Diaper Bank of North Carolina could do something different that would help families?

-Probe, What do you think the Diaper Bank of North Carolina could do to improve?

7) Is there anything else you would like to share?

-Probe, Is there anything else you would like us to know?

APPENDIX B

PROCESS EVALUATION SURVEY

**SURVEY**

Your thoughts are very important! All of your answers on this survey are anonymous. We will not ask for your name or know who wrote what responses. Please give us your honest opinion. Your feedback will give the Diaper Bank of NC information it can use to improve the way it gives diapers to families who need them and give data on how receiving diapers from the Diaper Bank of NC has affected families.

**1) How did you FIRST find out about the Diaper Bank of NC? Please choose only one:**

- From a friend
- From the internet
- From a story on the news
- From a family member
- From the person who brings me diapers from the diaper bank
- I am not aware of the Diaper Bank of NC

**Based on what you have heard about the Diaper Bank of NC, is each statement true or false?**

	True	False	I do not know
2) The diaper bank gets most of its diapers donated from big companies like Huggies and Pampers			
3) The diaper bank gets most of its diapers donated from people and families in the community			
4) The diaper bank gets most of its funding from the government			
5) The diaper bank gets most of its funding from money donated by people and families in the community			
6) The people working at the diaper bank are paid employees			
7) The people working at the diaper bank are volunteers			

**8) How often have you needed diapers for your child or children but you did not have them?**

- Never
- A few times a year
- Once a month
- Weekly
- Daily

**9) About how many times have you received diapers that have come from the diaper bank?**

- 1 – 2
- 3 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- More than 20

**10) About how often do you usually receive diapers that have come from the diaper bank?**

- Every week
- A few times a month
- Once a month
- Every few months

**11) How do you feel about the number of diapers you receive in a package?**

- The amount is too little
- The amount is just right
- The amount is too much

**12) How do you feel about how often you receive diapers from the diaper bank?**

- It is not often enough
- It is just right
- It is too often

**13) Has receiving diapers from the Diaper Bank of NC helped your household?**

- It has not helped us
- It has helped us a little
- It has helped us a lot

**14) When you did not have enough diapers, what happened? Check all that apply:**

- Child did not wear a diaper
- Used a towel or other cloth as a diaper
- Used a plastic bag as a diaper
- Used a diaper that was too big
- Used a diaper that was too small
- Child wore a diaper longer than usual
- Asked a friend for diapers or money to buy diapers
- Asked a neighbor for diapers or money to buy diapers
- Asked a family member for diapers or money to buy diapers
- Cleaned and reused a diaper that was wet or soiled
- I never experienced this situation
- Other (please explain): \_\_\_\_\_
- An adult in my household had to miss work
- An adult in my household had to miss school
- Child could not go to childcare
- Child got a rash
- Child got sick
- Child was unhappy

**15) In what ways has receiving diapers from the Diaper Bank of NC helped your household? Check all that apply:**

- I could pay a medical bill
- I felt happier
- Child felt happier
- Child was healthier
- I could pay a bill other than a medical bill, such as a power or water bill
- An adult in my household could go to work
- An adult in my household could go to school
- Child could go to childcare / preschool / daycare
- I could spend more money on things I needed like food

Other (please explain): \_\_\_\_\_

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**16) If you had extra diapers from the Diaper Bank of NC, what did you do with them?**

**Check all that apply:**

- |                                                        |                                                                                  |
|--------------------------------------------------------|----------------------------------------------------------------------------------|
| <input type="checkbox"/> Gave them away to a friend    | <input type="checkbox"/> Gave them away to a family member                       |
| <input type="checkbox"/> Gave them away to a neighbor  | <input type="checkbox"/> Traded them for something I needed more                 |
| <input type="checkbox"/> Sold them for money           | <input type="checkbox"/> Gave them back to the organization that gave them to me |
| <input type="checkbox"/> Traded them for another size  | <input type="checkbox"/> This never happened to me                               |
| <input type="checkbox"/> Other (please explain): _____ |                                                                                  |

**17) In the future, do you think you might want information about any of the following? Check all that apply:**

- |                                                                    |                                                                           |
|--------------------------------------------------------------------|---------------------------------------------------------------------------|
| <input type="checkbox"/> Cloth diapers                             | <input type="checkbox"/> How to know what size diaper my child needs      |
| <input type="checkbox"/> Potty training                            | <input type="checkbox"/> How to talk to childcare providers about diapers |
| <input type="checkbox"/> How to volunteer at the Diaper Bank of NC |                                                                           |
| <input type="checkbox"/> Other (please explain): _____             |                                                                           |

**18) Which gender do you identify with more:**

- Female       Male       Agender       Genderqueer

**19) What is your age? \_\_\_\_\_ (years)**

**20) Which race and ethnicity group(s) do you identify with? Check all that apply:**

- |                                                          |                                                        |
|----------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> Hispanic / Latino               | <input type="checkbox"/> White                         |
| <input type="checkbox"/> Asian                           | <input type="checkbox"/> Black or African American     |
| <input type="checkbox"/> American Indian / Alaska Native | <input type="checkbox"/> Other (please explain): _____ |

**21) Which organization(s) have given you diapers from the Diaper Bank of NC at any time in the past? Check all that apply.**

- |                                                   |                                                                        |
|---------------------------------------------------|------------------------------------------------------------------------|
| <input type="checkbox"/> Church World Service     | <input type="checkbox"/> Durham County Department of Public Health     |
| <input type="checkbox"/> Durham Connects          | <input type="checkbox"/> Durham Crisis Response Center                 |
| <input type="checkbox"/> Durham Early Head Start  | <input type="checkbox"/> Durham Interfaith Hospitality Network         |
| <input type="checkbox"/> Durham First in Families | <input type="checkbox"/> Duke Family Medicine & Duke Outpatient Clinic |
| <input type="checkbox"/> Duke Family Care Program | <input type="checkbox"/> Genesis Home                                  |
| <input type="checkbox"/> Healthy Families Durham  | <input type="checkbox"/> IFC Orange County                             |

- Urban Ministries of Durham       Welcome Baby  
 World Relief Durham               I am not sure  
 Other (please explain): \_\_\_\_\_

**22) Please write the names of any organizations you have received other services from, other than diapers, in the past year. It could be a nonprofit organization, religious group, or any community group.**

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**23) How many adults are in your household? Please circle:**  
 1      2      3      4      5      6      7      8      9      10      11+

**24) How many children are in your household? Please circle:**  
 1      2      3      4      5      6      7      8      9      10      11+

**25) How many children in your household wear diapers? Please circle:**  
 1      2      3      4      5      6

**26) Does anyone in your household qualify for WIC?**               Yes       No

**27) Does anyone in your household qualify for SNAP?**               Yes       No

**28) Does anyone in your household qualify for Medicaid?**               Yes       No

**29) Does anyone in your household qualify for the NC Subsidized Childcare Program?**  
 Yes       No

**How often have you or anyone in your household had a problem, struggle, or challenge with any of the following:**

	Daily	A few times a month	Once a month	A few times a year	Once a year	This has never been a problem
30) Transportation to places I need to go						
31) Having enough food to eat						

32) Having enough of things I need to live like soap, toilet paper, or diapers						
33) Finding a job						
34) Finding or keeping housing						
35) Finding affordable childcare						
36) Reaching educational goals						
37) Violence in my neighborhood						
38) Paying a utility bill						
39) Paying a medical bill						

**40) Are any adults in your household currently working full-time?**

Yes     No

**41) Are any adults in your household currently working part-time?**

Yes     No

**42) Are any adults in your household currently looking for work?**

Yes     No

**43) Does anyone in your household qualify for Unemployment Benefits?**

Yes     No

**44a) If there are working adults in your household, do any of them work only certain seasons of the year?**

Yes (please answer Question 44b below)

No (skip to Question 45)

**44b) If YES, which seasons are worked? Check all that apply:**

Spring

Summer

Winter

Fall

**45) About how far do you live from the place where you received diapers today?**

\_\_\_\_\_ (miles)



**46) How did you arrive at the place where you received diapers today? Check all that apply.**

- I drove myself
- A family member drove me
- A friend drove me
- A neighbor drove me
- Another way (please explain): \_\_\_\_\_
- I rode the bus
- I rode a bike
- I walked

**47) About how many minutes did it take you to get to the place where you received diapers today?**

\_\_\_\_\_ (minutes)

**48) Since you arrived here today, about how long was your wait to receive diapers?**

\_\_\_\_\_ (minutes)

**49) Is there anything you would like to tell us about receiving the diapers from the Diaper Bank of NC?**

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**Thank you!**

APPENDIX C

OUTCOME COLLECTION SLIP

**About how often do you get diapers from any organization that are from the diaper bank?**

- every week             a few times a month             once a month  
 every few months

**About how long have you been getting diapers from the diaper bank?**

- this is my first time    a few weeks                             about a month  
 a few months                             several months                             about a year  
 a few years

**How do you feel about the number of diapers received?**

- It is not enough                             It is just right                             It is too much

**Receiving these diapers for my child(ren) allows me to (check all that apply):**

- take child to daycare                             reduce stress                             go to work  
 buy food  
 make my child happier             help my child to be healthier  
 look for work  
 go to school or job training    buy non-food items like toothpaste or soap  
 pay a bill  
 save money for: \_\_\_\_\_  other: \_\_\_\_\_

**Please tell us about children in your household who wear diapers:**

Child #1 age: \_\_\_\_\_ (months)  
Child #2 age: \_\_\_\_\_ (months)  
Child #3 age: \_\_\_\_\_ (months)  
Child #4 age: \_\_\_\_\_ (months)  
Child #5 age: \_\_\_\_\_ (months)

- Has Child #1 started toilet training?    Yes     No  
Has Child #2 started toilet training?    Yes     No  
Has Child #3 started toilet training?    Yes     No  
Has Child #4 started toilet training?    Yes     No  
Has Child #5 started toilet training?    Yes     No

**In the past month, how many days did you not have enough diapers to change your child's diaper as often as you wanted?** \_\_\_\_\_ days

**On the days when you have needed extra diapers, about how many MORE diapers did you need each day?** \_\_\_\_\_ diapers

**About how much do you spend each month on diapers?**  I spend \$\_\_\_\_\_ a month on diapers **OR**

My household does not spend money on diapers. We get them another way.

**In the past year, has there been a time when you had to make a choice between spending money on diapers and spending money on something else for your family?**

Yes  No

**If YES, Did you have to make a choice between buying diapers and spending money on...**

Food? <input type="checkbox"/> Yes <input type="checkbox"/> No	Gas for your vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No
Rent or housing? <input type="checkbox"/> Yes <input type="checkbox"/> No	Medicine or healthcare? <input type="checkbox"/> Yes <input type="checkbox"/> No
Utilities? <input type="checkbox"/> Yes <input type="checkbox"/> No	Nonfood basic needs like soap, toilet paper, or toothpaste? <input type="checkbox"/> Yes <input type="checkbox"/> No
Car payment? <input type="checkbox"/> Yes <input type="checkbox"/> No	

**Which gender do you identify with most:**

Female  Male  Another gender identity

**What year were you born?** \_\_\_\_\_

**Which race and ethnicity group(s) do you identify with? Check all that apply:**

Latino/a or Hispanic  Asian  American Indian / Alaska Native  
 White  Black or African American  Other (please explain): \_\_\_\_\_

**How many adults including yourself are in your household?** \_\_\_\_ **How many children are in your household?** \_\_\_\_

**How many adults in your household are:** working full-time? \_\_\_\_ working part-time? \_\_\_\_ looking for work? \_\_\_\_

**Does anyone in your household receive SNAP benefits?**  Yes  No

**Does anyone in your household receive WIC benefits?**  Yes  No

**Is there anything you would like to tell us?**

**Thank you!**

