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Family risk as a predictor of initial engagement and follow-through in a universal nurse home visiting program to prevent child maltreatment☆

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ABSTRACT

Objective: As nurse home visiting to prevent child maltreatment grows in popularity with both program administrators and legislators, it is important to understand engagement in such programs in order to improve their community-wide effects. This report examines family demographic and infant health risk factors that predict engagement and follow-through in a universal home-based maltreatment prevention program for new mothers in Durham County, North Carolina.
Methods: Trained staff members attempted to schedule home visits for all new mothers during the birthing hospital stay, and then nurses completed scheduled visits three to five weeks later. Medical record data was used to identify family demographic and infant health risk factors for maltreatment. These variables were used to predict program engagement (scheduling a visit) and follow-through (completing a scheduled visit).
Results: Program staff members were successful in scheduling 78% of eligible families for a visit and completing 85% of scheduled visits. Overall, 66% of eligible families completed at least one visit. Structural equation modeling (SEM) analyses indicated that high demographic risk and low infant health risk were predictive of scheduling a visit. Both low demographic and infant health risk were predictive of visit completion.
Conclusions: Findings suggest that while higher demographic risk increases families' initial engagement, it might also inhibit their follow-through. Additionally, parents of medically at-risk infants may be particularly difficult to engage in universal home visiting interventions. Implications for recruitment strategies of home visiting programs are discussed.

Postnatal home visiting by nurses or paraprofessionals has become one of the most well-researched and now widely disseminated preventive interventions for child maltreatment in the United States (Olds et al., 2009). Recent meta-analyses have shown that these programs, on the whole, produce positive effects in reducing child maltreatment as well as improving a range of child development and parenting outcomes (Geeraert, Van den Noortgate, Grietens, & Onghena, 2004;

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Sweet & Appelbaum, 2004). In addition, these programs are popular with policy makers and funding agencies and are the focus of 1.5 billion dollars in federal funding as part of the 2010 health care legislation (Patient Protection and Affordable Care Act, 2010). However, home-visiting programs have also been the subject of great debate (Chaffin, 2004; Gomby, Culross, & Behrman, 1999). Critics question whether these programs produce the desired effects and whether the intervention is beneficial for all sub-groups. Nonetheless, the Centers for Disease Control and Prevention (CDC; 2003) supports expanding home visiting and cites a "basis of strong evidence of effectiveness," (p. 5); and the U.S. Advisory Board on Child Abuse and Neglect (1991) has called for universal implementation of home visiting so that all new mothers can reap the benefits of parenting support.

Several communities in the US have heeded the call for universal home visiting for families of newborns, including the state of Rhode Island; several counties in California, Colorado, Minnesota, North Carolina, Ohio, Virginia, and Washington; and major metropolitan areas including San Francisco, Los Angeles, and New York. Numerous challenges confront programs that attempt to scale up a home visiting program to reach universal coverage. Daro and Dodge (2009) point out that population-level impact on families is not likely until problems such as penetration, fidelity, and management are solved. The penetration challenge is that home visitation is a voluntary program, but population impact relies on near-universal engagement. Participation rates in home visitation programs may be as low as 50 percent (Svenson, Kaplan, & Hatcher, 2002), and participants might represent a biased sub-group. Whereas small, targeted randomized trials do not even consider the problem of non-participants (that is, women are solicited first and then randomized to intervention or control so non-participants are equally represented), scaled-up universal programs must reach all families.

An important step in enhancing understanding of group effects of universal postnatal home visitation is studying who engages in these voluntary programs. Further, these universal prevention programs are only effective to the degree to which families actually engage and follow-through with the intervention. To date, there have been no empirical studies of the factors associated with enrollment in a truly universal postnatal home visiting program in the United States. The purpose of the current study was to analyze engagement in a universal nurse home visiting program, Durham Connects, and to compare these results with the existing research on enrollment in targeted interventions. The impact evaluation of the program is not considered in the current report but is reported elsewhere (Dodge et al., in press).

Durham Connect's goal was to enroll every family with a new baby residing in Durham County by use of several empirically validated engagement techniques. The first step involved visiting new mothers in the hospital prior to discharge. This initial interaction with a trained recruiter began the engagement process and provided some intervention to all families, including framing the task of parenting, getting the mother excited about receiving support services, and answering questions about working with public health nurses. As such, acceptance of a visit in the hospital is interpreted in this study as positive initial engagement in the program. Durham Connects also utilized other empirically-validated recruitment procedures including collection of multiple contact numbers, phone reminders prior to the appointment, delivering services in the home, and providing material incentives for participation (Damashek, Doughty, Ware, & Silovsky, 2011). Durham Connects sought to provide one session of intervention during the period three to eight weeks post-birth at which time families were linked with community support services for further assistance. Families could receive up to four visits, depending on need. Only the initial visit is considered when assessing follow-through because of variability in the duration of intervention. These best-practice engagement procedures resulted in nurses completing a home visit with 66% of mothers who gave birth within the intervention timeframe. However, the remaining 34% of families who did not receive any intervention can be viewed as treatment failures. Thus, understanding patterns of non-engagement is integral to understanding the intervention's effect. Our empirical analyses focused first on predictors of scheduling (called initial engagement) and then predictors of actual completion of at least one home visit (called follow-through) among those who scheduled a visit.

The current analysis focuses on known health and demographic risk factors for child maltreatment and their relation to engagement. Health and demographic variables are treated as distinct due to high levels of conceptual and statistical overlap within these categories. However, infant health and demographic risk are also correlated (Collins, Wambach, David, & Rankin, 2009; Campo, Xue, Wang, & Caughy, 1997), and thus covariation between these constructs is also considered. The predictors addressed are available from medical records for all new births in the Durham Connects catchment area, regardless of whether or not the family engaged in the intervention. Results of this analysis will be useful to other interventionists because medical records are generally the first information available to staff members in similar community-level programs, and understanding how these variables relate to engagement can help staff members predict whether a family will be more or less difficult to engage and tailor their recruitment efforts accordingly. Further, the results of these analyses will help inform design and implementation within the burgeoning field of universal home visiting.

Research with targeted home visiting programs has shown mixed results with regard to enrollment of high-risk families. Some researchers have found that families at higher risk for child maltreatment and poor child development outcomes are more likely to engage. Duggan and Windham (2000) found that families at greater psychosocial risk were more likely to enroll in paraprofessional home visiting. Parents at increased risk for child abuse also enrolled at higher rates in a targeted nurse home visit program (Fraser, Armstrong, Morris, & Dadds, 2000). However, it is difficult to generalize these findings to universal interventions; targeted programs, by definition, deal with populations with limited variability on measures such as income, maternal age, and infant health risk because these are the groups singled out for intervention.