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HHS Public Access
Author manuscript
J Obstet Gynecol Neonatal Nurs. Author manuscript; available in PMC 2015 September 04.

Published in final edited form as:
J Obstet Gynecol Neonatal Nurs. 2014 ; 43(1): 61–70. doi:10.1111/1552-6909.12263.

Women's Reasons for Attrition from a Nurse Home Visiting Program

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Abstract

Objective—To describe mothers' reasons for leaving a home visiting program early.

Design—Qualitative descriptive study using semi-structured interviews of mothers who dropped out of the Nurse-Family Partnership (NFP) and two focus groups with nurses and nurse supervisors at an NFP site.

Setting—A New York State site of a NFP home visitation program for low-income new mothers designed to improve the physical and emotional care of children.

Participants—Participants included 21 mothers, 8 nurses, and 3 nurse-supervisors

Methods—Semi-structured interviews and focus groups were used to collect data, which were analyzed using content analysis.

Results—The program was not perceived to fit a mother's needs when she was overwhelmed with other responsibilities, the nurse did not meet her expectations, the content was not of interest, or the mother did not desire visits after the infant was born. Nurses and mothers described need for mothers to have organizational and communication skills, such as keeping track of appointments, calling to reschedule, articulating needs, and asking for assistance. Disruptive external influences included nurse turnover and unstable living situations, including frequent moves and crowded housing. Each of these types of barriers had potential to interact with the others, creating complex combinations of challenges to retention.

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Disclosure
The authors report no conflict of interest or relevant financial relationships.

Callouts

Conclusion—NFP retention might be improved by reframing program relevance to individual mothers and increasing maternal organizational and communication skill development.

Keywords

nurse home visiting; attrition; low-income mothers; United States; social organizational skills; nurse-client relationship; Qualitative

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Attrition is a significant concern for the Nurse-Family Partnership (NFP) program, a home visitation parenting intervention for low-income new mothers. After three research trials, NFP was disseminated across the United States and internationally. At these dissemination sites, only 35–40% of participating families remained engaged for the entire program (O'Brien et al., 2012). In most cases, attrition occurs when a mother no longer can or wants to participate, or when she is consistently unavailable for scheduled meetings. Lack of adherence to visit schedules and attrition is common across parenting and prevention programs (Ammerman et al., 2006; Wagner, Spiker, Gerlach-Downie, & Hernandez, 2000). Attrition reduces the dose of an intervention and is associated with poorer outcomes (Korfmacher, Kitzman, & Olds, 1998; Raikes et al., 2006).

In the NFP, mothers are enrolled during their first pregnancies; a curriculum and visit schedule designed to engage mothers through their children's second birthdays is used. Nurses visit mothers, generally in their homes, to provide support and information on pregnancy, parenting, child health and development, accessing social services, and other topics to help the mother and child improve their life skills. The purpose of NFP is to decrease disparities between low- and higher-income families in a broad range of outcomes, including school achievement, child maltreatment, and maternal economic self-sufficiency. Its longitudinal design enables development of a relationship between the home visitor and family and provides support during important child developmental milestones (Olds, 2002). The frequency of home visits varies, with more frequent visits following enrollment and child birth (weekly) than at other times (biweekly or monthly; Olds, Henderson, Tatelbaum, & Chamberlin, 1986). In three research trials, NFP participation was associated with many positive outcomes (Eckenrode et al., 2010; Olds et al., 1997), including an increase in pregnancy spacing (Kitzman et al., 2000), a decrease in child abuse and neglect (Olds, Henderson, Chamberlin, & Tatelbaum, 1986), and improved child school outcomes (Kitzman et al., 2010). In addition, NFP was found to be cost-effective (Olds, Henderson, Phelps, Kitzman, & Hanks, 1993).

In previous studies of attrition, researchers primarily have used quantitative approaches (Damashek, Doughty, Ware, & Silovsky, 2011; Nock & Ferriter, 2005; Olds & Korfmacher, 1998). Dropout from parenting interventions is more likely in the presence of a busy lifestyle with competing priorities (Garvey, Julion, Fogg, Kratovil, & Gross, 2006; Gross, Julion, & Fogg, 2001). A low perceived need for help was a common reason for dropout from a parent-training program (Garvey et al., 2006), and less stress and better social support were associated with less engagement with the program (Ammerman et al., 2006). The three most common reasons for dropout from a home visitation program reported by program staff were difficulty contacting the family to schedule sessions, family loss of

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interest in the program, and the family moving away (Wagner et al., 2000). O'Brien et al. (2012) found that NFP participants who were more likely to drop out and have fewer visits were younger, unmarried, African American, and had a change in home visitors after a nurse left the program. Moreover, when nurses adapted the program more to participant needs, sites experienced less attrition (O'Brien et al., 2012). In a qualitative study of challenges faced by nurses in one of the NFP's research trial sites, nurses reported difficulties in delivering the program in households with significant material needs and little privacy; these nurses were also concerned about balancing attention to serious needs with the risk of alienating the mothers (Kitzman, Cole, Yoos, & Olds, 1997). These studies suggest a common set of circumstances that contribute to attrition: parents who do not see sufficient value in programs to fit sessions into their stressful, chaotic lives are least likely to continue participation.

Attrition in home visitation programs may be different from attrition in programs that require the participant to travel to meetings. Although logistic challenges are reduced in home visitation programs, there may be unique barriers because they are conducted on *the client's turf* (Kitzman et al., 1997). Attrition in treatment programs has been studied, but attrition patterns may be different between treatment and prevention programs due to the presence of a diagnosed problem in treatment programs. Concern about the diagnosed problem is a key predictor of attrition in treatment interventions (Attride-Stirling, Davis, Farrell, Groark, & Day, 2004; Kazdin, Holland, & Crowley, 1997). If there is not a diagnosed problem to be concerned about, it is likely that engagement in the program would be different.

It is important to gain the perspective of those who leave programs early to understand mechanisms behind attrition so that program improvements can be designed. However, we are not aware of any studies that collected such qualitative data from participants of a preventive home visiting program. The aim of this study was to describe mothers' reasons for leaving NFP early. To confirm our interpretations of mothers' views and circumstances, we also elicited the perspectives of nurses who delivered the program.

[Callout 1]

Methods

This qualitative descriptive study was conducted at an NFP site in a medium-sized city in New York that served a primarily urban population, which consisted of non-Hispanic African American (60%), non-Hispanic Caucasian (30%), and Hispanic (10%) women. Data were collected in two phases: interviews of women who dropped out of the NFP and focus groups with NFP nursing staff and supervisors.

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[1]The perspective of mothers who dropped out contributes to our understanding of attrition mechanisms and relationships between contributing factors and may lead to program improvements.

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Phase 1: Client Interviews

Recruitment—Any mother enrolled in the NFP program at this site in the past five years who left before her child was two years old was eligible. We did not recruit any mother who lost her child, fetus, or parental rights; moved out of the area; or left the program by refusing to accept a new nurse after a change in nurse assignment. We initially recruited only mothers 18 years old but expanded eligibility to include 16- and 17-year-old mothers after obtaining a waiver of parental consent from the Research Subjects Review Board (RSRB) that approved the study. Potential participants were recruited through telephone calls by NFP program staff to each number available (one to three per mother) resulting in a convenience sample. Mothers were told that we wanted to learn about their experience with NFP; attrition was not mentioned.

Data collection—The first author interviewed mothers in their homes between January and June 2011. The interviewer sought to ask neutral questions about the program to allow each mother to express her own experience and avoid interviewer bias. During the consent process, permission to obtain basic program participation information (length of time in NFP and recorded reason for attrition) was requested. Participants received $25.

A semi-structured interview guide was developed based on literature review and knowledge of the program. Question topics included factors contributing to leaving the program, housing moves, life changes affecting availability for visits, differences between expectations of and experience with the program, relationship with the nurse, topics discussed in visits, family member involvement in the program, and recommendations for program improvement. Interviews were audio recorded and transcribed. Questions were added to the guide as data collection progressed based on insights gained from early interviews.

Data analysis—Inductive content analysis began with two researchers independently coding three interviews (Elo & Kyngas, 2008). Differences were discussed and consensus was reached to establish the initial set of codes. Both researchers coded each additional transcript independently and added additional codes as necessary. The researchers met regularly throughout this process to review the emerging code list and ensure consistency using a constant comparison approach. This process took place simultaneously with further recruitment and data collection until saturation was reached. The final set of codes was reviewed and condensed into larger themes and sub-themes. Analysis and interpretations were then shared with others familiar to the NFP program to further validate emerging findings.

One coder, who was also the interviewer, acknowledges previous experience with NFP research. The second coder had no previous experience with NFP but was aware of the evidence of NFP effectiveness. Given our beliefs that NFP is a useful program with positive outcomes, both coders were mindful of potential bias and worked to focus on the data from the mothers' perspectives. We also shared out interpretations with others to uncover blind spots and biases.

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Phase 2: Nursing Staff and Supervisor Focus Groups

Recruitment—Two focus groups were conducted in November 2011 with nurses at the program site. The first focus group included only nurses who provided the home visits; a second group consisted of nurse supervisors. This separation allowed the groups to share their experiences openly among peers. Verbal consent was obtained after reviewing an information sheet describing the voluntary and confidential nature of the study, as approved by our RSRB.

Data collection—Focus groups took place during work hours and a light meal was provided. Participants were asked to share their experiences with attrition and discuss each theme identified from the client interviews. Focus groups were audio recorded and transcribed.

Data analysis—Transcripts from the two focus groups were reviewed and coded, using the same process for qualitative analysis employed in Phase 1. The list of themes and sub-themes developed during Phase 1 served as the starting code list. No additional themes were identified. Supervisors and the nurses without supervisory roles reported similar experiences, so findings from both focus groups are reported together.

Results

Sample Description

We attempted to contact 196 mothers and successfully interviewed 21 (11%). No working telephone number was available for 116 mothers (59%), the available telephone numbers were not answered for 46 mothers (23%), and messages were left for 9 mothers. Of the 27 clients we reached, 78% agreed to participate. All participants were at least 18 years old by the time of the interview. Mothers were interviewed 9 months to 4 years after leaving the program and they had been in the program 3 to 30 months, according to program records. Each mother reported how old her child was when she left the program: 5 mothers left the program before her child was born, 3 left just after birth, 6 between birth and 1 year, 5 when the child was about 1 year old, 1 when the child was 18 to 24 months old, and one mother could not remember. Two-thirds of the mothers interviewed were African American, 25% were White, and the others were multi-racial. No mothers were Latina.

Eight of the 12 eligible nurse visitors attended the first focus group. All three supervisors attended the second focus group. Two of the supervisors also served as nurse home visitors.

Findings

Reasons for attrition were recorded in program records as excessive missed appointments (48%), declined further services (48%), or unable to reach mother (5%). Overall at this site, reasons for mothers leaving early were recorded as excessive missed appointments (53%), declined further services (39%), or unable to reach (36%).

For most mothers interviewed, a primary reason (or two reasons) for dropping out was identified. These key reason(s) included too busy (9), unstable housing (6), crowded housing

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(3), program not helpful (3), nurse stopped coming (2), lost trust in nurse (1), family intrusion (1), and left the area on extended trip (1). However, the decision to exit was often complicated by multiple factors. Three sets of issues were dominant: lack of fit between the program and mothers' current perceived needs, lack of alignment between mothers' organizational/communication skills and program expectations, and disruptive external influences. These barriers often affected one another, creating compound problems.

We compared the mothers' self-reported reasons for leaving the program with those recorded in the program records. Most recorded reasons were consistent with what we learned from the interview (e.g., difficult work schedule corresponding to excessive missed appointments). However, for some mothers (33%), the program recorded that the mother reported she "received what she needed," although she described a primary reason in our interview that may have been awkward to report to the program (such as lost trust in nurse).

Program Did Not Fit Current Needs

Feeling overwhelmed as a barrier to keeping appointments—Scheduling appointments around school or work was a common problem. One mother told us, "I was doing so much. I was going to school, trying to work. I couldn't keep appointments… And I was a new mom, first time mom. It was just too much." Additionally, new motherhood introduced specific challenges to keeping appointments, such as competing child medical appointments, mother's fatigue, and postpartum depression. One mother noted that having a child with medical problems was a barrier because of frequent health care visits and added stress.

The nurses agreed that mothers feeling overwhelmed was an important contributor to attrition. They recognized that sometimes being busy was attributable to the mothers being successful in going to school or work. One nurse described responding to a difficult situation by reducing visits for a few months, which seemed to be helpful

Nurse did not meet mother's expectations—Several mothers reported that their nurses did not meet their expectations. Most often, the mother did not feel that the nurse was able to answer questions or find requested information. As one mother described her frustration, "I'd ask her how to do something, and I'd ask a question. She wouldn't know the answers to them. And then next time, she wouldn't know the answers so I had to figure out and do it myself."

There were some specific situations that were problematic and resulted in negative interactions between the mother and her nurse, such as the nurse pushing for a housing program the mother was not comfortable with. In a few cases, mothers thought that the nurses did not work around their schedules very well. A few mothers reported a lack of respect of their wishes by the nurses, such as visiting in the hospital when the mothers did not want the nurses there. The mothers expressed a desire for more control over the relationship and interaction with the nurses and wanted the flexibility to ask the nurses to back off when needed.

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Finally, some mothers were not satisfied with how the nurses or program responded when they left the program. Some mothers thought the nurses could have done more to encourage them to stay in the program, such as staying in touch to see if the situation had changed after a few months. In contrast, a few mothers felt that the nurses or other program staff members were too pushy in trying to re-enroll or keep them engaged.

Nurses recognized occasional lack of fit between the nurse and mother: “I also had a client that… was very non-compliant with the last nurse, but it turned out they just clashed personality-wise…with me she was compliant and she graduated and she is doing fantastic now.” Nurses reported that some mothers expected more direct assistance than NFP provides, especially with obtaining household items, while others did not see material issues such as housing as something a nurse would help with.

Content not relevant to mother—For some mothers, the nurses did not alter the content of the visits enough to provide new and relevant information based on their needs and current stages of pregnancy or parenting or provide choice in content. One mother said that the program was useful earlier during pregnancy, but later visits did not provide new relevant material.

The nurses reported that they did give mothers options regarding what topics to discuss next and also used their judgment regarding topics they felt the mother needed. However, they reported that some mothers did not provide feedback when asked what topics they were interested in and just said, “I don’t know.”

Decreased interest in program after child was born—A few mothers reported that pregnancy was scary for them, and that they appreciated support from NFP during that time but needed it less later. Some mothers had experience caring for small children and therefore felt competent to care for their own children. In other cases, the new mothers did not see a need for NFP in later months. One mother said, “Yeah, once I feel comfortable with my child, I feel like I didn’t need it. I knew what to do when I got comfortable with her, after the first two months, you know.” Many mothers described support networks that helped care for their children and thus a decreased need for support from NFP.

From the nurses’ perspectives, some mothers may have had enough support, so the program was not likely to further improve their situations. However, nurses believed that other mothers still needed help but were overwhelmed with new responsibilities and lack of sleep.

Maternal Organizational and Communication Challenges as a Barrier to Keeping Appointments

Difficulty managing appointments—A organizational skill of mothers important to staying engaged in the program was managing appointments. Several mothers reported forgetting when a visit was scheduled or not being home at the time. No mothers mentioned using a calendar or other tool. Nurses also perceived mothers’ lack of experience with managing appointments.

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Difficulty asking for and accepting help—In a few cases, mothers reported being reluctant to accept help because they wanted to succeed independently. They perceived taking assistance as being "lazy" or did not want to be dependent on others. One mother expressed her desire to provide for her son, “I didn’t feel like I wanted to be, ‘oh well you know, I have to wait for this lady to get me that,’ just for my son to have it.” Another mother did not to accept help at the time but regretted it: “She tried to help me in many ways, showed me things I could do to help me, to get up on my feet and I just didn’t go for them though. And I should have.”

Nurses were aware that mothers may have been reluctant to accept aid and were not always able to articulate their needs, or may not have realized the nurses could help them through crises. Some mothers became more comfortable asking for things after the relationships were established or after they learned what the program could provide. One nurse shared her strategy to make it easier for mothers to ask for help by using the term *homework* for assistance the nurse provided between visits. This nurse described the resistance of the mothers to accept help as a protective mechanism and how avoiding the word *help* averted this response.

Difficulty communicating with NFP—Not knowing how to contact the nurse was a barrier to remaining engaged with the program or re-engaging after a gap in visits. Some mothers did not know the phone number, but one was not comfortable making the call: “A couple of times I did start to call her up but … but I didn’t have enough nerves so I just gave up.” Communication was also a problem for two mothers who reported that the nurse stopped coming. Neither understood why the nurses no longer came, but they accepted it and did not contact the program.

Nurses expected mothers to have the NFP phone number but acknowledged that mothers often did not initiate contact. This was most frequently a problem after moves or phone number changes but could be a problem without these disruptions. One nurse described this situation: “We were sitting there talking and she was, ‘Oh, I was really worried that I wouldn’t be able to graduate [from NFP] ‘cause I just looked at my phone and I realized I just missed your call again.’ Well, she never called me.” Nurses at this site relied on phone calls and home visits and did not use newer methods of communication, such as texting or social networking websites, although they knew their clients used them.

Nurses sometimes sensed a reluctance of mothers to be completely honest with them, which could lead to avoidance of the nurse and in mothers dropping out of the program due to excessive missed appointments. Several examples were given of mothers who began the program because family members or others encouraged them, although they were not fully committed to it. Nurses suggested that mothers may have opted for avoidance if they did not feel empowered to say *no* to an authority figure. They believed that some mothers used avoidance in an effort to protect the nurses or themselves from a difficult situation, such as abusive relationships or other evidence that might lead to a Child Protective Services referral.

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External Distractions

Unstable and/or crowded housing—More than half of the mothers reported moving as a barrier to participation. The process of finding a place to live and moving competed for time, disrupted communication with the nurse, and made scheduling future appointments difficult. Reasons for moving included family moves, eviction, and foreclosure. In some cases, the child contributed to the need to move: "My daughter was a preemie and then we have, you know, bigger kids and a lot of germs and people smoking and so we moved." Some mothers without a stable place to live stayed with family members or friends. Even if housing itself was stable, meeting with the nurse in someone else's house could be difficult, as one mother described: "I actually tried to meet with her at my son's father's house, and his mom was not okay with me bringing somebody else into her house."

Nurses' comments confirmed unstable housing as a challenge to staying in contact with mothers. They expressed frustration in trying to reach mothers who moved and did not let the nurses know how to reach them.

Change of nurse assignment—Several mothers reported that they left the program shortly after being assigned new nurses with whom they failed to develop strong relationships. After switching to a new nurse who was not a good fit, one mother considered asking for a different nurse but chose not to. Instead she left the program and described why: "I didn't want a different nurse, 'Cause I don't want to get used to another one, and the same problem happen."

Nurses acknowledged that forming a relationship with a mother who previously worked with a different nurse could be challenging. One nurse said, "For the clients that I have had transferred to me from another nurse … there's definitely a different relationship there."

Overlapping Challenges Further Decreased Participation

In some cases, several barriers were faced simultaneously, compounding mothers' obstacles to participation. For example, one mother recognized the connection between being organized and being able to stay engaged: "I think if I would have been more responsible then, I would have probably been able to keep up even when I went from place to place." Another mother lost the telephone number and did not know how to contact her nurse after a move.

Nurses reported a connection between mothers' organizational/communication challenges and the low priority of the program for mothers: "They're not used to having these routines and having this - these commitments in their life so we're not always a priority for them."

Regret at Dropping Out

Although the focus of this study was reasons for leaving the program, we also asked the mothers about positive aspects of the program. We learned that the majority of the mothers who dropped out valued the program, and many regretted leaving it. One mother said, "I'm kinda wishing now I would have stuck with it 'cause it was so helpful."

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Discussion

This study provides insight into some reasons why mothers drop out of a home visiting program. If the mother does not see the program as matching her needs, and her organizational and/or communication skills are not well aligned with program expectations, she may not be motivated to overcome the challenges of staying in the program. Communication challenges may make it difficult for the mother to find relevance if she is unable to convey her needs to her nurse. Enhancing a mother's organizational and communication skills may improve her ability to cope with (and potentially avoid) external distractions, but difficult life situations may reduce the nurse's opportunity to teach these skills before the mother leaves the program.

If a mother does not believe the program matches her needs, she may not be motivated to expend the energy to stay in the program when external distractions make it more difficult, and external distractions may limit the relative priority the mother can place on the program. In addition, if the mother does not feel comfortable describing her primary barriers to the nurse, she may instead say that she has learned what she needed and decline further services. Improved communication skills may help mothers be more comfortable sharing their concerns with their nurse or the program site office.

The complex and often chaotic lives of mothers in this program were apparent in the small percentage of mothers we were able to reach and in the interactions between the factors contributing to attrition. Although this complexity is well known to those who serve low-income populations, the specific impact of this complexity on attrition from programs may not be evident. For instance, nurses reported frustration with mothers not returning phone calls but did not discuss strategies to help mothers manage phone numbers or feel confident initiating a call.

Contributions to Understanding of Attrition

Our findings are consistent with the literature on home visiting and other prevention interventions. Previous authors have reported associations between attrition and programs not fitting current needs, variously described as being busy (Garvey et al., 2006; Gross et al., 2001; Wagner et al., 2000), having low perceived need for the program (Garvey et al., 2006), having low satisfaction with program (Damashek et al., 2011), having motivations that do not match program goals (Gross et al., 2001), having good social support outside of the program (Ammerman et al., 2006), and having a nurse who did not adapt the program to the mother's needs (O'Brien et al., 2012). The contribution of external distractions to attrition has also been reported: frequent moves (Wagner et al., 2000), poor housing and limited resources (Kitzman et al., 1997), and nurse turnover (O'Brien et al., 2012). Because nurse turnover was a strong predictor of attrition in previous work (O'Brien et al., 2012), we chose not to include mothers in our study who did not continue in the program after being assigned to a new nurse. Our findings build on previous work in showing that attrition following nurse turnover occurs not only when a mother declines to continue with a new nurse but also a short time after she accepts a new nurse.

[Callout 2]

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The organizational and communication challenges of mothers have not been directly addressed in previous studies, with the exception of a qualitative study of nurses. Kitzman et al. (1997) reported household disorganization and lack of experience with keeping appointments as challenges observed by nurse home visitors. Other teams have reported associations between attrition and maternal characteristics that may be related to organizational and communication skills: poor sense of control, low psychological resources (Korfmacher et al., 1998), and low self-efficacy (Garvey et al., 2006). These prior findings are congruent with our themes, but we are the first, to our knowledge, to describe interactions among barriers to retention.

Contrary to our expectations, we did not find examples of family conflict as a contributor to attrition. Most responses regarding family involvement were either neutral or positive: family members were reported to have encouraged the mothers to stay in the program. We observed no cases where family intervention was a strong contributor to dropout, but mothers with strong family objections may have been less likely to agree to participate in this study. Nurses observed examples of families both facilitating and creating barriers to engagement in NFP.

Limitations

The primary limitation of this study is that it was conducted in a single NFP site in a single county. It is possible that reasons for attrition vary between sites, regions of the country, and populations, and all explanations may not be captured here. In addition, mothers we could not contact, due to less stable contact information, may have had unique reasons for dropping out. Although congruence with previous studies suggests that we did not miss any major reasons for attrition, attrition and nurse practice is known to vary across sites (O'Brien et al., 2012).

Potential Program Improvements

Evaluating and developing organizational and communication skills early in the program may be critical for consistent engagement. For instance, if housing appears to be unstable or crowded, the nurse can discuss options for meeting elsewhere and how to stay in contact if a move occurs suddenly. Meeting in another location may be helpful to bridge a time of housing instability and may also improve visit focus and communication compared to a visit in a crowded home. Nurses could also model skills mothers need to learn, such as using a calendar to schedule visits. Although nurses reported using some of these strategies, use of these methods was not consistent across nurses. Programs may be able to adapt to accommodate families whose organizational and/or communication skills do not align with program demands. For example, Nock and Ferriter (2005) found that reminder telephone calls were helpful to reduce attrition.

Feeling overwhelmed was a common theme in mothers' comments, but directly addressing this problem may be difficult. A challenge to the nurse is working with the mother to

[2]An important implication is that evaluating and developing organizational and communication skills of mothers early in the program may be critical for consistent engagement.

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determine how the program can help reduce the feeling of being overwhelmed, rather than increase it. It may be helpful for mothers to learn early in the program that the nurse may be able to help in times of crisis, and that these are times to reach out to the nurse, instead of leaving the program as some mothers did. In addition, potential program changes might include increasing flexibility in scheduling and using all communication media that the mother prefers, including mobile phone texting and Internet-based social networking.

As the mother progresses through the program, her situation may change, requiring the nurse to constantly re-assess if the program is to fit the mother's needs. Discussing future visits is one strategy nurses currently use, especially when approaching transitions. Mothers may be motivated to remain engaged, or re-enroll, if they understand how the program can help them manage upcoming child developmental challenges. Increased outreach to mothers who dropped out may help some mothers re-connect if the barriers that led to drop out resolve, or if they have been inhibited by embarrassment that by dropping out they let their nurse down.

Improving the way the program adapts to current needs of mothers has been suggested previously (O'Brien et al., 2012), and a retention intervention was tested in NFP sites (Ingoldsby et al., in press). Specifically, nurses were trained to use Motivational Interviewing and involve the families in determining the visit schedule. After these changes were made, retention increased at the intervention sites (Ingoldsby et al., in press). The additional flexibility and adaptation encouraged in this intervention is consistent with our recommendations.

There are some barriers to implementing the changes suggested above. All programs have limited resources, so evaluation of the cost-effectiveness of proposed changes will be important. We have suggested efforts at the beginning of a mother's enrollment in the program, but it may be difficult to include additional content without straining the relationship that is being built between the mother and the nurse. It is challenging to hire and retain nurses with the advanced skills required to conduct client assessment and education, as well as negotiate with the mother regarding current and potential future needs. The program needed creative solutions, based on input from mothers who are current or former participants, to keep mothers engaged during times of crisis or to re-engage with them when a crisis has passed.

Although these recommendations are presented in terms of NFP, other programs may benefit from considering how they may apply. The specific skills required to remain engaged in a program may be different across programs (for example, accessing transportation is necessary for other programs), but evaluating these skills early may be critical to avoid attrition in any program. Likewise, reassessing the participants' needs throughout a program may be helpful in reducing attrition; participants need to remain motivated to attend visits. The issues of complex, chaotic lives are common across many populations. The ability of a program or provider to anticipate external distractions and make contingency plans is likely to improve not only attrition, but also the confidence the mother has in the program to understand her needs.

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Among mothers who dropped out, we were surprised by how many reported that the program and nurses were helpful. The NFP may be able to increase retention by focusing on logistical issues rather than changing the substance or organization of the program itself.

Future research in this area could explore similarities and differences across sites and across programs, which would allow new programs to predict which issues are likely to arise in their setting. In particular, sites with more Latina participants would be an important addition. In addition, research exploring the effectiveness, and cost-effectiveness, of various strategies to reduce attrition will be valuable to making evidence-based improvements to programs.

[Callout 3]

Conclusion

Mothers, nurses, and nurse supervisors reported similar barriers to continuing engagement of mothers in this longitudinal program. Although external influences beyond the scope of NFP play a role, retention might be improved by implementing new strategies to address program relevance to individual mothers, helping mothers develop organizational and communication skills early in the program, and determining how to keep mothers engaged during or after crises. Other home visiting programs may benefit from considering how each of these barriers may contribute to attrition, and how the barriers may affect one another.

Acknowledgement

Supported by the University of Rochester (UR) Center for Community Health, UR School of Nursing, and an NRSA Institutional Research Training Grant (T32 PE12002).

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[3]A challenge to nurses is working with mothers to determine how the program can reduce the feeling of being overwhelmed rather than increase it.

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