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Implementation Evaluation of an Education Program in Pediatric Clinics

Yen H. Nong
Baylor College of Medicine, yhnong@bcm.edu

Kimberly Kay Lopez
Baylor College of Medicine, kimberly.lopez@bcm.edu

Dorothy Mandell
University of Texas Health Science Center, Tyler, dmandell@utsystem.edu

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Child maltreatment is characterized by chronic unhealthy behaviors and a deterioration of the parent-child relationship, especially in infancy. Stress in the family, mental illness, unrealistic expectations, and lack of knowledge have all been shown to be preceding factors in maltreatment risk.[1,2] Further, all of these factors interact with one another to make each a more significant risk.[3]

A public health approach to child maltreatment prevention relies on programs that impact the underlying drivers of maltreatment and reduces the deterioration of the parent-child relationship. Also advantageous are programs that can be implemented easily. Moving from randomized controlled trials to implementation poses a host of barriers to the adoption and maintenance of these programs. This is particularly true when implementing programs within existing services and systems, such as childcare facilities and medical clinics. Pediatric clinics are often perceived as an ideal location to reach maternal caregivers of newborns because these visits are highly attended.[4] However, well-infant visits are often rushed and resources are stretched. Staff often lack time for meaningful conversations with parents, which are needed to implement any education program and to provide the support parents need. Therefore, it is pertinent to identify strategies for helping pediatric clinics implement and maintain innovations that could reduce risk factors for child maltreatment.

To help parents, particularly maternal caregivers, increase knowledge of common infant issues, set realistic expectations, and address family stressors, an educational program was developed. It was designed for maternal caregivers at newborn well-infant visits within a baby's first month of life and was tested through a randomized controlled trial conducted in 4 pediatric clinics. In addition to determining efficacy, an implementation evaluation was also conducted to better understand program feasibility. This manuscript explores implementation challenges and successes of the education program, and describes strategies to implement such a program for maternal caregivers of newborns in pediatric clinics.

Description of Intervention

The education program was delivered at 4 pediatric clinics within a large pediatric outpatient system in Houston, Texas, from May 2017 to August 2018. The clinics had varying levels of staff size and available

resources; however, all served low-income families.

The program consisted of 3 main components (Table 1) and was delivered by staff members including a nurse, medical assistants, health educators, and public health interns at the 2-week or 1-month well-infant visit, with follow-up until baby's 4-month well visit. Each clinic received a program orientation before starting implementation, topic specific training for staff providing the education to ensure program fidelity, and technical assistance throughout the study period as needed.

Table 1. Description of Intervention Components	
Period of PURPLE Crying (PURPLE)	PURPLE is an evidence-based program to help parents cope with uncontrollable crying and prevent shaking.[5]
Social and economic stressor questionnaire	The social and economic stressor questionnaire is a compilation of questions from the "Everyday Stressors Index",[6] the "WE CARE" questionnaire,[7] and custom questions that were developed based on focus group results asking women about their postpartum concerns.
Parenting Action Plan (PAP)	The PAP was designed as a tool to help clinic staff discuss pro-active planning for difficult situations and level-setting normative development and infant behavior with maternal caregivers of newborns. The PAP is a 10-page booklet with detachable pages that focuses on (1) feeding and bonding, (2) coping with inconsolable crying, (3) promoting maternal self-care, (4) setting realistic sleep expectations, and (5) identifying safe caregivers. The PAP is not a booklet to be simply handed to the caregivers; rather, it is a framework for a conversation about behavior change and planning. The staff member administering the PAP uses motivational interviewing techniques to help maternal caregivers make plans and have realistic expectations about the infant. The education program provides complimentary messaging, in coordination with existing evidence-based parenting programs,[8,9] to support positive parental behavior that can reduce risks associated with infant maltreatment. It takes15

	to 30 minutes to thoroughly discuss and is a low-intensity program compared to other programs that require a multi-week commitment or that change the structure of well-infant visits.[10]

METHODS

A total of 18 individuals were interviewed across the 4 participating clinics at the conclusion of the study period (Table 2). These individuals were recruited because they provided the education program to maternal caregivers, had a supervisory role of those staff, or took part in making decisions regarding clinic flow at the participating clinics. A key informant interview guide was developed to (1) understand staff perception and attitude on the benefits of implementing an education program to maternal caregivers during well-infant visits; 2) identify challenges faced by the pediatric clinic in providing such a program; and 3) determine if pediatric clinics found it feasible to provide the education program to maternal caregivers at the 2-week well-infant visit as part of routine care. The research associate conducted semi structured one-on-one interviews with staff at the clinic that lasted 30 to 60 minutes. Data was recorded through note taking. After each interview, notes were reviewed and anything that did not get recorded during the conversation or gaps due to pace of conversation were completed. The notes were then reviewed again and organized in preparation for coding and analysis.

Table 2. Key Staff Members Interviewed

Medical assistant	4
Nurse	1
Health educator	2
Associate medical director	1
Clinic manager	3
Pediatrician	2
Administrative assistant	2
Public health intern	3
Total	**18**

The research associate relied on the grounded theory approach using inductive reasoning to complete the preliminary analysis. Analysis began with open coding, a series of reviews and recoding followed, relevant

categories were then identified, and lastly themes that emerged were recorded. A project coordinator, who was familiar with the study but did not take part in the data collection, acted as the secondary coder to ensure codes and themes were in agreement. When there were disagreements, discussions were held to reach a consensus.

RESULTS

Staff saw value in providing an education program to maternal caregivers during the 2-week well-infant visit

Staff who directly provided the education program to maternal caregivers shared that initially there was apprehension to implement the program, but the majority noted that once the program was started they saw how it was beneficial to maternal caregivers. Many of these caregivers, especially first-time moms, shared with staff that they did not know information regarding normal crying patterns for babies and that it is normal to feel overwhelmed caring for a newborn. This conversation with staff, beyond what the pediatricians could provide during the visits, really seemed to give that additional support maternal caregivers needed. For staff, knowing that they were helping maternal caregivers allowed them to see beyond the extra work that was required. The impact they observed helped change their attitude and increase enthusiasm toward providing the program.

> "It was helpful to new parents. A lot of them did not even know there was such a thing as [uncontrollable] crying; they just think they have a crying baby. Parents find it reassuring to know it is a normal baby phase." –Medical Assistant

> "I think it is very useful [to share this information]. It seems like moms needed to hear that it is OK to feel overwhelmed, that babies do cry a lot, and it is OK to put them down. Even experienced moms didn't know [this kind] of information. Normalizing crying seems to be really useful." –Safe Babies Intern

Motivational interviewing is key to engage maternal caregivers in conversation

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As much as staff was apprehensive about the time required of them to deliver the education program, they were also concerned about how to fit it into the clinic workflow and not burden families with longer appointments. Staff recalled that maternal caregivers sometimes lost interest if they were distracted by a fussy infant or anxious to leave the clinic for one reason or another. In such cases staff felt rushed and not able to completely provide the education to support maternal caregivers as intended.

However, the use of motivational interviewing, a major component of administering the Parenting Action Plan (PAP), helped engage maternal caregivers in conversations to hold their interest. Motivational interviewing draws on the maternal caregiver to share her experiences and what works for her instead of listening to a medical staff tell her what she should do. The format allowed maternal caregivers the opportunity to actively participate in conversation with the clinical staff. It facilitated maternal caregivers to identify their own appropriate solutions and plan ahead for possible difficult situations with their infant.[11]

Staff emphasized the use of motivational interviewing as a key mechanism to provide the education program to maternal caregivers and how it helped overcome the challenges of a longer appointment.

> "Just talking to moms helped them… they don't necessarily need all the materials." –Medical Assistant

> "Moms were very receptive and liked the talking and receiving feedback. Moms seem to prefer this [motivational interviewing] format that allows for the back-and-forth conversations." –Safe Babies Intern

> "Moms are just ready to leave because they have already done so much [in the clinic]. But once the conversation [using the PAP] gets going they are receptive." –Safe Babies Intern

> "Sharing and talking was a good way to comfort mom and support [her]. The back and forth helped create conversations and build relationships and helped me get to know mom better. The booklet is a tangible object that they could refer back to." –Safe Babies Intern

Clinic leadership was most skeptical about the feasibility of an education program at the pediatric clinics

Most hesitation came from senior management level staff with more concerns around clinic flow and overall functioning of the clinic. They also felt staff with a lesser degree than medical doctor could not provide this level of education to maternal caregivers. Clinics participating in this study serve a large, underinsured population with staff already spread thin; therefore, the additional work and resources required to implement and maintain the program were also a barrier from the management perspective.

> "It will slow down the clinic flow. I don't have time to do it. It is just not good as part of the flow. To make it possible would be for administration to have providers see less patients [to allow providers more time for each appointment]." – Pediatrician/Medical Director

> "It would be difficult to implement because of the time constraint. Some of this is already being done as part of the visit but others are not being addressed. Medical assistants could do it, but the message would be less consistent. It should really be done by the provider." – Assistant Medical Director

> "Even with specific training, I'm still hesitant that the medical assistants can implement components of the program to mothers properly." – Clinic Manager

An education program in a pediatric clinic would be possible if there were better clinic coordination and a dedicated staff for the program

Staff overwhelmingly said they did not see a better way to engage maternal caregivers at pediatric clinics on these important issues than how it is being delivered through the program despite the challenges already discussed. Many stated the need to improve communication to better coordinate workflow between provider and staff members. Coordination among clinical staff was a major theme repeatedly mentioned in the interviews as a way to ensure longevity for this type of program in pediatric clinics.

> "The way we are doing it now is the only way to get mom's attention – doing it before visit or during can work, but not after because moms are ready to go. Certain doctors are super supportive, so it is easy to coordinate the interventions between medical assistant workups and being seen by the doctor. The key is working closely with medical assistants and doctors to see patients when there is [idle] time during the visit." –Administrative Assistant

> "Better communication between medical assistants and doctors to get things as smooth and coordinated as possible [to help the program be successful]." –Administrative Assistant

> "Keep [doing] it how it is done now, but working with the medical assistants and doctors to improve flow." –Safe Babies Intern

Additionally, staff highlighted the importance of considering staffing needs in order to sustain an education program in pediatric clinics. Staff shared that having a dedicated person for the education program would be preferred. For the most part, pediatricians do not have time to cover all the education maternal caregivers may need, so having someone specifically assigned to the task would be beneficial to both the clinic and maternal caregivers it serves.

> "It is hard for the doctor to do additional education because there is no time. With new moms, they need a lot of time for education and some doctors don't like the education part. [It would be good to] maybe hire a dedicated person for this specifically because the core staff is always short, so they will pull from one responsibility to another." –Nurse

> No one else in the clinic will probably do [this]… Medical assistants have enough to do, they probably will not do this… Hire more health educators or provide additional staffing to conduct this intervention as part of care." –Health Educator

Furthermore, maintaining this type of education program can benefit pediatric clinics in the long run through reduced calls to the office when common infant issues arise. Providers' and staff time is freed up to respond

to more urgent cases that need immediate attention.

> "With teaching [maternal caregivers] you get less phone calls, you get less patients going to the emergency rooms because parents don't know how to adequately respond to a situation." –Nurse

DISCUSSION

It is clear from the difficulty of moving programs from research settings to implementation that it is not enough that families are helped by a program. That program must also be feasible and reasonable to implement in clinic settings. An education program in pediatric clinics is a valuable resource to maternal caregivers and their families. This type of education program is achievable, but key factors must be in place and some adjustments made for the program to be successful in the clinic.

According to staff interviewed, maternal caregivers were receptive to the education during well-infant visits. Staff were apprehensive at first, but after implementing the program they realized its benefits for maternal caregivers. Therefore, to ensure successful adoption of such programs in pediatric clinics, strong buy-in from clinic leadership and staff members of every level from the very beginning is recommended. To achieve buy-in, start by having a program champion(s) identified to help with communication that provides all the details of the program--from its benefits to what would be required for its success. A program, especially one that heavily depends on staff attentiveness and patience, is more likely to have support if everyone in the clinic has a clear understanding of what it is and has an opportunity to take part in the planning process. This will support organizational readiness as that is an important component to successful uptake of programs.[12]

Second, in planning for implementation and program maintenance, it is crucial to consider both staff and maternal caregivers. This factor in implementation is not usually identified in frameworks that focus on organizational readiness. Similar to clinic staff's limited time, maternal caregivers also do not want to spend more time than necessary at a doctor's office. This additional time was identified as a potential barrier for full participation. However, the information provided is important and maternal caregivers appreciate hearing it. Therefore, it is helpful for clinics to find a balance in providing the right information to meet the needs of maternal caregivers while honoring the competing pulls of both maternal caregiver and staff time. Further, clinics need to prepare maternal caregivers to

expect the additional time so they can plan accordingly.

Motivational interviewing can play a major role in making the time spent for the program more efficient and meaningful. It has been found to be a necessary component of other clinic-based interventions.[13] Training for motivational interviewing does not need to be extensive. What is most critical to the success of this and other similar programs is identifying compassionate individual(s) who are open-minded and nonjudgmental and want to provide the education to support maternal caregivers. With such characteristics, the staff can attain motivational interviewing skills easily with a brief introduction to its key elements and adequate practice. Furthermore, there are several modalities available to best suit varying experience levels and training needs. Through the interviews with staff, the common refrain was that the value of the education program came from the conversation with maternal caregivers. It is likely that open conversation is facilitated through the motivational interviewing framework of the PAP.

Lastly, to sustain an education program in pediatric clinics, there needs to be coordination so that the flow between medical procedures and the education program is smooth and efficient. Open communication and planning among staff members are required. If possible, it was also recommended that staff be assigned to the program instead of using staff with other conflicting responsibilities. A common theme that emerged from the interviews was insufficient time and competing responsibilities. This education program was not intended to change the staffing structure of the clinic as is seen with other programs.[14] However, it is clear that a staff member should be responsible for the program in order for it to be sustained in the clinic.

It is important to recognize that the above recommendations could be challenging for pediatric clinics to achieve. Recognizing the challenges that are unique to each implementing clinic at the planning phase could help the clinic know where and what to plan for. The earlier the weaknesses are identified, the better the clinic is able to address them and resolve any issues so that the program can be implemented successfully. Similarly, it is important to continually assess and reassess the program once it has been implemented to ensure program fidelity is met, with course correction when necessary.

The main limitation in this implementation evaluation was that the interviews were recorded by note taking without any audio recordings. As thorough as the research associate could have been, a recording would have provided a reliable mechanism for rechecking any gaps or clarifying any disagreements among the coders. On the other hand, not being audio-

recorded may have made the subjects more comfortable and thus the research associate could facilitate more honest responses.

Nonetheless, it can be determined that this paper has contributed to a better understanding of ways to successfully deliver an education program in pediatric clinics. This type of low-intensity program provided during pediatric visits has recently become an innovation in child maltreatment prevention for reaching caregivers of children during infancy.[15] Studies are being conducted to test for efficacy of these programs, but few are examining the challenges and how to successfully move from research into real-world implementation such as is described in this paper.

CONCLUSION

The results of this study show that there are no one-size-fits-all approaches to successfully implementing an education program for maternal caregivers into routine care in pediatric clinics. It is vital to thoroughly plan for implementation, understand the organizational and structural strengths of each clinic, and leverage areas or personnel that would best administer the program components with the highest fidelity. Each clinic, even if part of the same system, is different from clinic management to staff capabilities, and has varying availability of resources. Careful assessment of the clinic environment with consideration of the recommendations above would increase the likelihood of successfully implementing a program that educates and provides appropriate support to maternal caregivers.

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