

Online Education for WIC Professionals

Teaching Child Development to Extend Breastfeeding Duration

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Breastfeeding initiation is on the rise in New Mexico; however, breastfeeding duration here, and around the world, does not meet international recommendations. Misunderstanding a baby's behavior is often an overlooked variable that decreases breastfeeding duration. Hoping to help parents better understand how child development impacts breastfeeding, 138 New Mexico Women, Infants, and Children (WIC) professionals recently completed HUG Your Baby's Roadmap to Breastfeeding Success—a 2-hour online program, with accompanying resources, that covers key information from birth to 1 year. After completing the course, participants demonstrated increased knowledge of how child development impacts breastfeeding, expressed a stronger intention to teach parents about normal child behavior, and reported greater confidence to do so. The course was viewed as evidence-based, its online format was well-received, and participants would recommend it to colleagues.

Keywords: lactation; child development; parent education

Medical literature is clear: breastfeeding promotes both the short- and long-term health of babies, mothers, and communities. Professional nursing and medical organizations affirm World Health Organization (WHO) recommendations to breastfeed exclusively for the first 6 months, and to continue breastfeeding for 2 years or longer, as the mother desires, once complementary food is added. The work of community-based peer counselors increases both breastfeeding initiation and duration (Shakya et al., 2017).

Research shows that the reasons women do not initiate or continue to breastfeed are complex and include well-known demographic, physical, social, and psychological factors (Office of the Surgeon General, 2011). Research also indicates that regarding her baby as *not satisfied*—irrespective of whether there is evidence of insufficient milk—causes many women to abandon breastfeeding (Neifert & Bunik, 2013). Understanding infant behavior and responding effectively to infant cues contribute to longer breastfeeding duration (Shloim, Vereijken, Blundell, & Hetherington, 2017). Such knowledge and responsiveness also promote positive interactions between parent and child, boost parent confidence, reduce risk of postpartum depression, and positively impact both mother-child attachment and baby's development (Lester & Sparrow, 2010).

Research indicates that interventions designed to promote exclusive breastfeeding must engage mothers beyond the prenatal and early postpartum weeks and are more effective when technology is utilized (Skouteris et al., 2017). In addition, studies suggest that computer-based learning for health professionals can address varied learning styles, can offer savings in time and money, and can provide education equal or superior to traditional teaching (Colaceci et al., 2017).

The Centers for Disease Control's (CDC) *Breastfeeding Report Card*, and international WHO data, confirm that while breastfeeding initiation is on the rise, communities worldwide struggle to extend breastfeeding duration. For example, in New Mexico, while 85% of mothers ever breastfeed, only 52% are exclusively breastfeeding at 3 months; 26.6% are exclusively breastfeeding at 6 months; and only 29.5% provide any breast milk at 12 months (Centers for Disease Control and Prevention [CDC], 2016).

Seeking further resources to enhance breastfeeding duration, New Mexico Women, Infants, and Children (WIC) leadership was attracted to HUG Your Baby (HYB) by its evidence-based status, its digital format, its use of case studies and parent videos, and its focus on providing lactation support over the baby's first year of life. In addition, WIC leadership anticipated that their professionals would appreciate HYB's multicultural/inclusive materials and its international reach (HUG Your Baby, 2018b). Consequently, New Mexico WIC provided *The*

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Roadmap to Breastfeeding Success online training, parent education handout, and parent education DVD for their professionals. A pilot study collected pre- and postcourse feedback to evaluate the effects of training on participants' knowledge, intention to teach parents about normal child behavior, and confidence to do so.

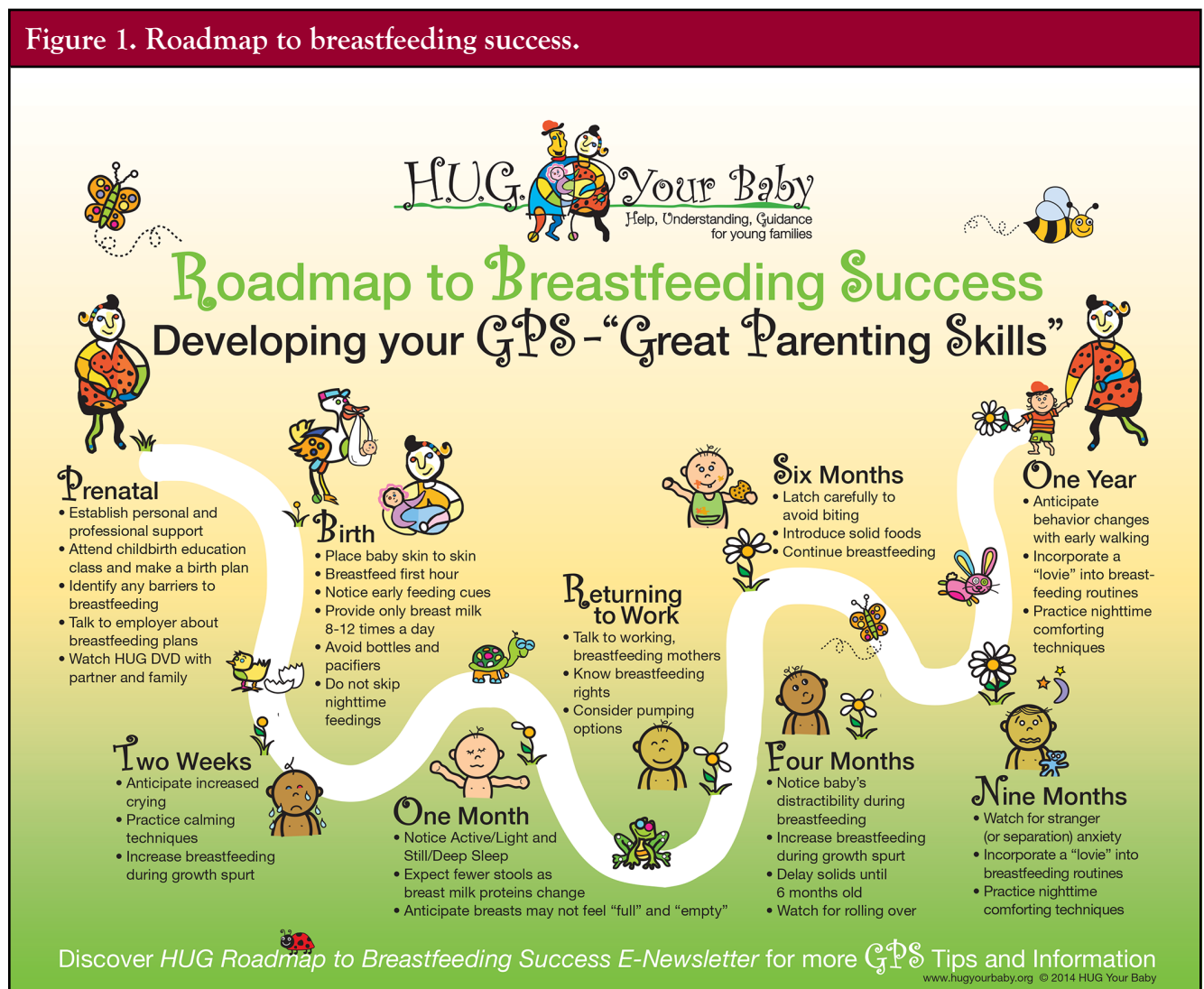
Course Content

The *Infant Feeding and Practice Study II (IFPS II)* and work by T. Berry Brazelton contributed to the development of *The Roadmap to Breastfeeding Success* (Tedder, 2015). *IFPS II* documented why mothers weaned their babies, and if their reasons for stopping breastfeeding varied with the age of the child (Li, Fein, Chen, & Grummer-Strawn, 2008). Though specific challenges impacted mothers at different ages of babies' life, mothers identified "The baby was not satisfied" as a reason for weaning at all

ages of their babies' lives, irrespective of evidence of inadequate milk.

Dr. T. Berry Brazelton's classic work, *Touchpoints*, refers to moments in life when a child is poised to begin a significant developmental event (Brazelton & Sparrow, 2006). At such times of transition, children typically exhibit disorganization in their eating, sleeping, or general behavior. Brazelton's *Touchpoints* predictably indicate times during the first year of life when a mother might misinterpret her baby's behavior as a breastfeeding problem. Examples of disorganized behaviors that can cause mothers to believe their babies are not satisfied include increased crying, difficult to calm, "restless" sleeping, frequent awakenings at night, or seemingly inattentive to or uninterested in mother.

Figure 1. Roadmap to breastfeeding success.



The Roadmap to Breastfeeding Success handout offers an image of breastfeeding as a journey: a process that changes over time and in relation to a baby's age and development (Figure 1). The 2-hour online course, approved for 2 CERPs, helps professionals understand a baby's normal development, how that development impacts breastfeeding, and normal changes in breast milk production. The course includes six 10- to 20-minute video lessons that contain slides with lecture, video of babies and parent visits, case studies, and multicultural lullabies that teach child development concepts (for case study, see HUG Your Baby, 2018a).

Lesson One includes introduction and components of the program.

Lesson Two includes benefits of breastfeeding, WHO recommendations, descriptions of *The Infant Feeding and Practice Study II* and Brazelton's *Touchpoints*, and how misunderstanding normal behavior and believing that baby is not satisfied can negatively impact breastfeeding duration.

Lesson Three describes the importance of noticing and responding to a newborn's states (referred to by HUG Your Baby as a baby's "Resting, Ready and Rebooting Zones") and to a baby's physiologic stress responses (referred to by HUG Your Baby as a baby's "sending out an 'SOS' – Sign of Over-Stimulation"). *Body SOSs* include changes in baby's color, movement, and breathing. *Behavioral SOSs* include "Spacing Out" (going from alert to drowsy), "Switching Off" (gaze aversion), and "Shutting Down" (going from alert to asleep). Some newborns, and especially babies born early, respond to overstimulation by "Spacing Out" or "Shutting Down." Other babies may look away from a parent's exuberant interaction. If a mother is not taught to identify signs of overstimulation, she can misunderstand her baby's behavior as a signal that her baby does not want to feed. Mothers who notice and respond effectively to infant cues have longer breastfeeding duration and are more attuned to infant signals when complementary foods are added (HUG Your Baby, 2017a; Shloim et al., 2017). Finally, this lesson reviews the importance of mothers' establishing personal and professional support, considering how birth choices may impact breastfeeding, and having effective conversations with employers about returning to work as a breastfeeding mother.

Next, the birth experience is considered, the WHO Ten Steps are referenced, and clear guidance is given about how to assure that milk intake is adequate. Participants review the function of feedback inhibitor of lactation, and how skipping nighttime feedings can decrease milk

production. With this knowledge, mothers can then consider whether child development challenges, rather than breastfeeding problems, become an issue (for feeding cues, cholecystokinin, and "shutting down" vs. going to sleep, see HUG Your Baby, 2015; for lullaby about Ten Steps, see HUG Your Baby, 2017b).

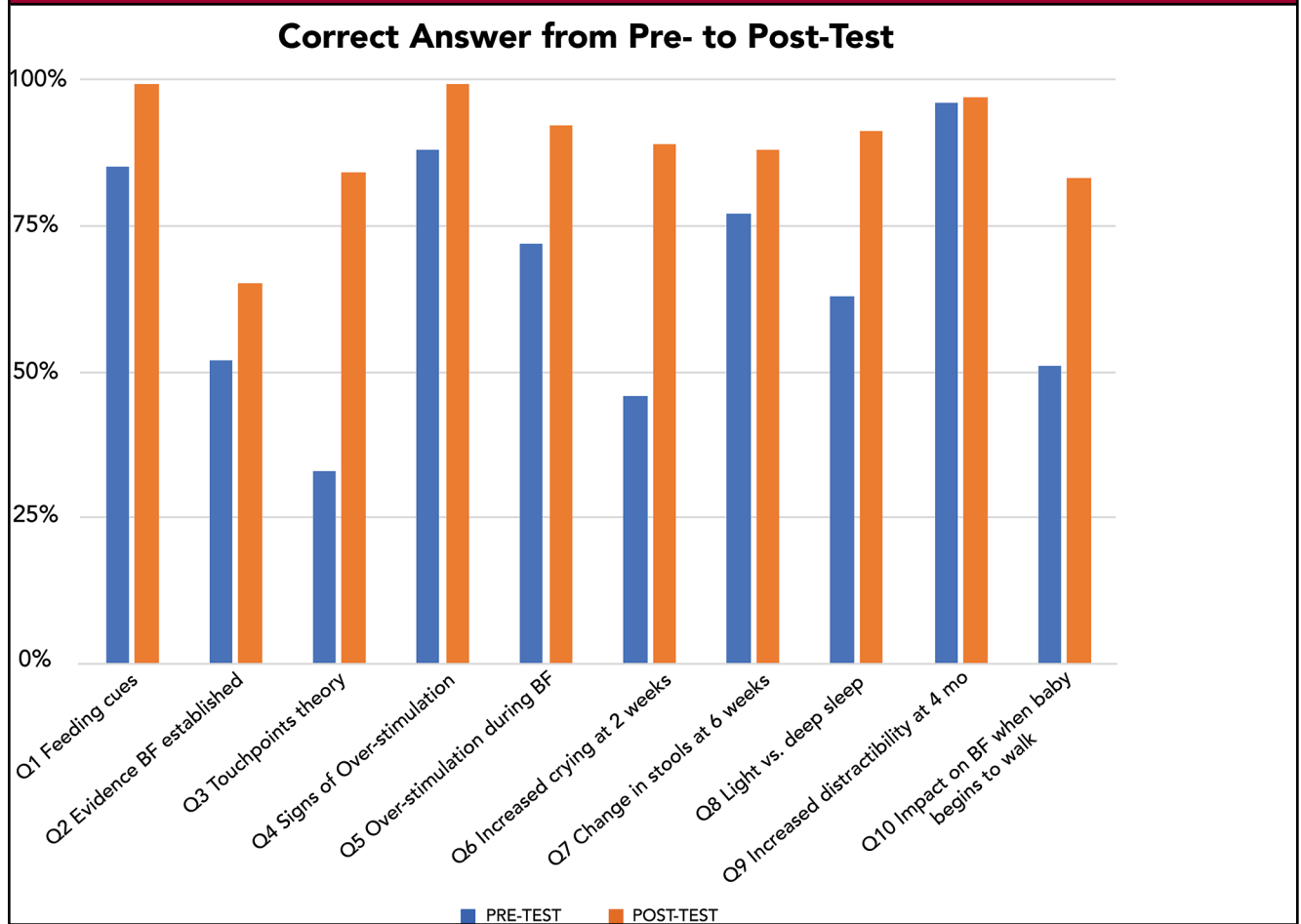
Lesson Four includes information about infant crying and how to manage it. Babies who cry excessively are at increased risk for child abuse and for behavioral and emotional challenges as young children. Mothers who unsuccessfully manage excessive crying in infancy are at increased risk for postpartum depression, for supplementing with infant formula, for prematurely beginning solids, and for abandoning breastfeeding altogether (Kaley, Reid, & Flynn, 2012; Neifert & Bunik, 2013). Research on the importance of skin-to-skin care is presented, and the recommendation that swaddling and pacifier use be avoided until breastfeeding is well established is shared (for normal crying and techniques to calm a fussy baby, see HUG Your Baby, 2017c).

Clearly, it is critical that mothers of a newborn respond to early feeding cues. However, the One-Month lesson demonstrates the difference between light and deep sleep and suggests that a mother may watch her older baby transition from light back to deep sleep once breastfeeding is well established (for sleep cycles and parent video, see HUG Your Baby, 2017d).

Participants next learn about the normal change in the whey/casein ratio in breast milk that occurs between 4 and 6 weeks and causes a baby's stools to be less frequent. In addition, participants are reminded that many women at this time do not experience their breasts "filling" and "emptying," even when milk supply is adequate. Without this information mothers may worry that their milk supply is inadequate—and add infant formula or abandon breastfeeding altogether.

Lesson Five offers tips on returning to work as a breastfeeding mother, understanding breastfeeding rights, and considering pumping and return-to-work options. Participants explore special "Mommy and Me" time at day's end—a technique that can ease transition back to work. Several developmental events predictably occur between 4 and 6 months of age. The 4-month-old's cognitive surge causes distractibility during breastfeeding, and his learning to roll over can temporarily disorganize eating patterns (for a mother's response to these changes, see Tedder, 2018). Though mothers of 6-month-olds worry about being bitten, WIC professionals are reminded to teach that a properly latched baby cannot bite his

Figure 2. Participants' improvements in knowledge from pre- to post-test.



mother; a tired or bored baby should be taken off the breast in order to maintain a proper latch.

Lesson Six describes changes at 9 and 12 months. Stranger and separation anxiety at 9 months, and beginning to walk at 1 year, can cause babies to wake up more frequently at night. Parents need tips to comfort a baby back to sleep without adding more nighttime feedings.

Pilot Study

Although the aim of education is acquisition of knowledge, current health research concludes that effective education causes changes in behavior. The Theory of Planned Behavior Model suggests that a person's *intention* to change motivates behavior and behavior change (Watkins, Dodgson, & McClain, 2017). Other research concludes that a professional's *confidence* to provide care contributes to the quality of care they go on to provide (Lee & Jackson, 2016). The purpose of the current study was to identify a pre- to postcourse change in participants'

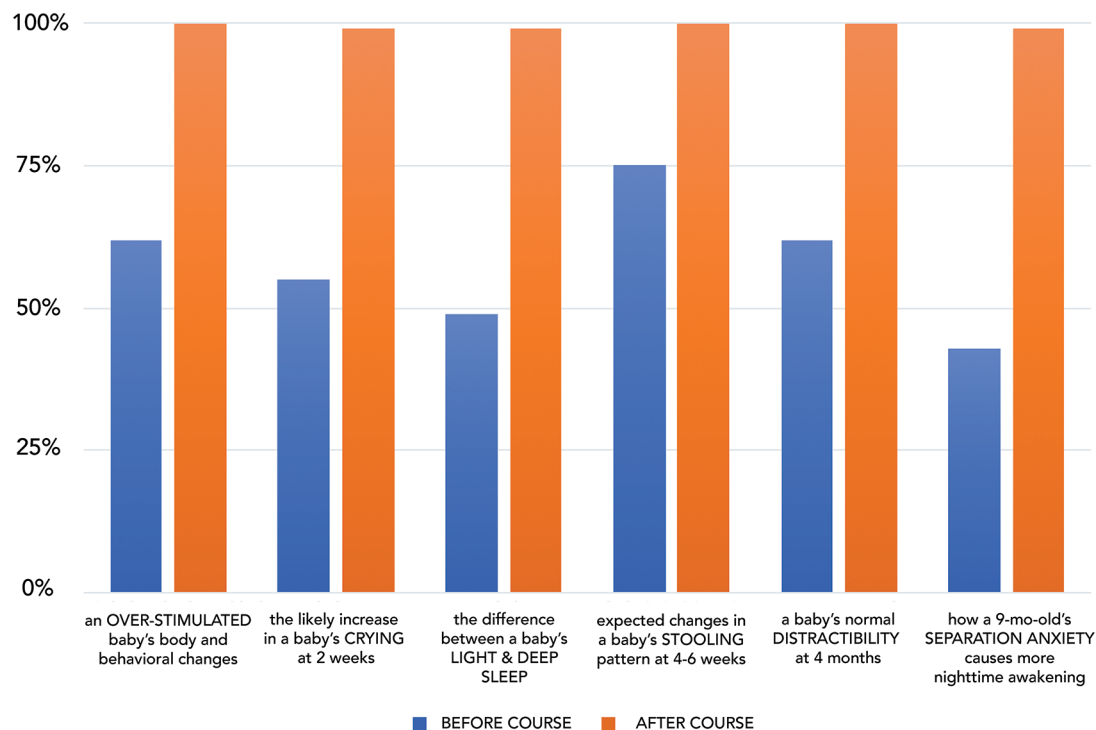
- **Knowledge** of a child's development as it relates to breastfeeding support,
- **Intention** to teach about child development issues impacting breastfeeding, and
- **Confidence** to provide this care.

Methods

Data for this study were collected from three sources: (a) a nonexperimental pre- and posttest (with seven multiple choice and three true-false questions); (b) a 10-question, self-report survey of intention and confidence; and (c) a four-question course evaluation. Data were collected electronically by Digital Chalk, a web-hosting platform. The study was approved as exempt from review by the IRB at University of North Carolina at Chapel Hill (#16-3180). A total of 138 New Mexico WIC peer counselors, IBCLCs, and nutritionists completed this course from fall 2016–fall 2017. Results are summarized below.

Figure 3. Participants' intentions before course vs. after course.

Before Course: I currently teach about (or give written information on)...
After Course: I plan to teach about (or give written information on)...



Pre- and posttest questions and were scored as correct or not. Participants responded to pre- and postcourse intention and confidence surveys and to course evaluation on a 4-point Likert scale. The answer was scored as positive if participants responded with “Strongly Agree” or “Agree,” and as negative if participants responded with “Disagree” or “Strongly Disagree.”

Results

Knowledge

- 57% participants passed the pretest by scoring 70% or more.
- 100% participants passed the posttest. (90% achieved a passing score on the first attempt; 10% passed on a retake, which is permitted by the online program.)
- Greatest improvement occurred in four areas of knowledge: *Touchpoints* Theory (Question 3), normal crying patterns (Question 6), sleep cycles (Question 8), and the impact on breastfeeding of baby beginning to walk (Question 10) (Figure 2).

Intention

Before completing the course, an average of 58% of participants said they taught pertinent information about child development and breastfeeding. After completing the course, 100% reported that they now intend to include this information in their teaching (Figure 3).

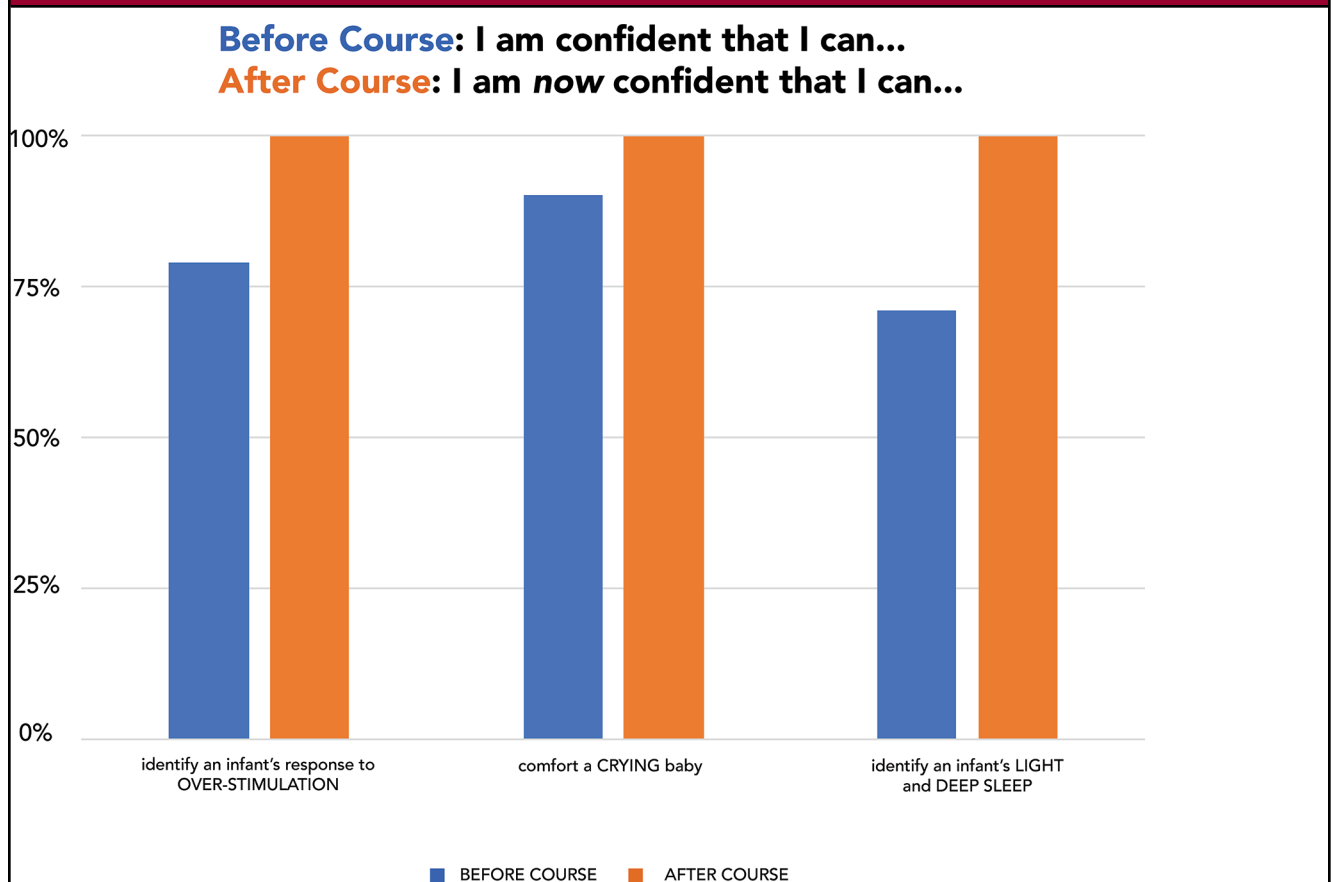
Confidence

Prior to completing the course, an average of 80% of participants rated themselves as confident identifying signs of overstimulation in a baby, differentiating light from deep sleep, and comforting a crying baby. After completing the course, 100% rated themselves as confident in these respects (Figure 4).

Course Evaluation

One hundred percent of participants strongly agreed or agreed that the course was evidence-based, claimed the online format was convenient and easy to use, and said they would recommend this course to colleagues. All also stated that they now want to use The HUG video and *Roadmap to Breastfeeding Success* handout with families (Figure 5).

Figure 4. Participants' confidence before course vs. after course.



Discussion

Pretest results in this pilot study confirm that its participants had important lactation knowledge, such as understanding an infant's early feeding cues, but were less knowledgeable about indications for more support and education to ensure adequate nutrition in a 2-week-old. They also lacked information about how surges in a child's development might impact breastfeeding in the older baby, about normal crying patterns, and about sleep cycles in infants. Interestingly, these pretest results are comparable to results recently gathered in a multisite study of faculty at Duke, Johns Hopkins, and UNC-Chapel Hill Schools of Nursing (Alden et al., 2018).

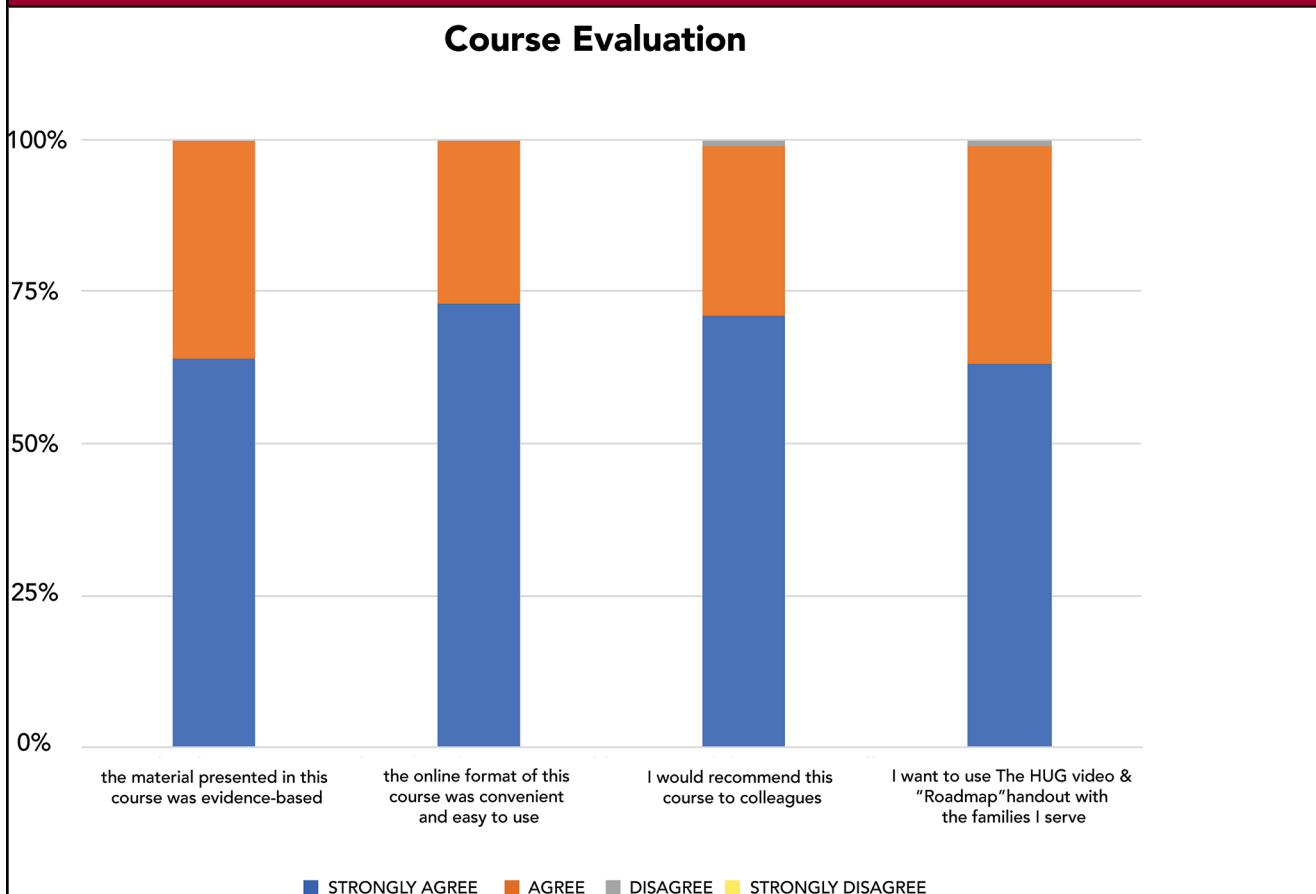
It is impressive that 80% of participants, before the course, were confident identifying signs of overstimulation in a baby, differentiating light from deep sleep, and comforting a crying baby. However, data from this study show that 54% incorrectly answered questions about crying patterns, and that 36% were incorrect about sleep cycles before completing the course. These data suggest that a professional's confidence and knowledge might not always align.

A professional's intention and confidence to provide evidence-based care increases the likelihood that she or he will translate new knowledge into effective parent teaching and support (Lee & Jackson, 2016; Watkins et al., 2017). This study suggests that the *Roadmap to Breastfeeding Success* enhances professionals' desire to add pertinent child development information to their breastfeeding support.

Final analysis of posttests and surveys identified areas where further education might be helpful to WIC professionals. HUG Your Baby responded to this need by sending a series of six weekly e-newsletters to New Mexico WIC professionals participating in this project. These e-newsletters utilized a case study, a parent-child video, and age-appropriate information about child development and breastfeeding issues to review and reinforce information previously shared in the *Roadmap* course.

Positive feedback about this course inspired New Mexico WIC leadership to recommend *The Roadmap* to a sister organization, *Breastfeeding on the Border*. That organization recently enrolled 40 community health workers in

Figure 5. Participants' course evaluation.



the newly created, Spanish version of *The Roadmap to Breastfeeding Success* online course and its accompanying handout and DVD (both also in Spanish).

Four limitations of this pilot study have been identified. These should be addressed in a future study. (a) Insufficient collection of demographic data (level of education and type of professional training) and use of a 4-point rather than a 5-point Likert scale—precluded more refined analysis of results. (b) Measurement of current behavior may have been subject to recall bias, since a time-frame for recall was not specified. (c) Though participants expressed an intention to teach differently after taking the course, no follow-up measure confirmed a change in teaching. (d) The survey tools used in this pilot study have yet to undergo rigorous validation.

Conclusion

Efforts continue, nationwide and worldwide, to identify barriers to breastfeeding duration and effective interventions to promote it. However, insufficient attention has been given to educating lactation specialists about how a baby's development over the first year of life might

impact the breastfeeding experience. Misunderstanding a baby's normal behavior can cause mothers to add formula, to begin solids prematurely, or even to abandon breastfeeding. After completing HYB's *Roadmap to Breastfeeding Success* online course, New Mexico WIC professionals demonstrated increased knowledge of how child development impacts breastfeeding, expressed a stronger intention to teach parents about normal child behavior, and reported greater confidence to do so. The course was viewed by participants as evidence-based, its online format was well-received, and participants would recommend it to colleagues. Results of this study with WIC professionals lays groundwork for future research—not only with other groups of professionals and the use of more sophisticated methods of analysis but also with parents to assess the extent to which teaching child development might extend breastfeeding duration.

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Elsa Quintana, IBCLC and CLE, is the State Coordinator for the New Mexico WIC Breastfeeding Peer Counselor Program. She is also involved with *Breastfeeding on the Border*, a binational effort based in New Mexico, Texas, and Chihuahua, Mexico, as well as with *Breastfeeding Behind Bars*, an initiative to ensure that infants with incarcerated mothers have access to mother's breastmilk. Elsa earned a BA in Psychology and a BCJ from New Mexico State University and has been an active member of the New Mexico Breastfeeding Task Force (NMBTF) since 2002. Led by her passion to equip and empower communities through the support and promotion of breastfeeding, she has spearheaded establishment of several NMBTF breastfeeding chapters in southern New Mexico and has facilitated Breastfeeding Peer Counselor services in New Mexico military bases and hospitals.

Issue Brief on Patient Engagement and Postpartum Care, From AMCHP/NICHQ

The Association of Maternal and Child Health Programs and the National Institute for Children's Health Quality have published an issue brief titled "Aligning Title V, Healthy Start, and Families to Increase New Mother Wellness in New Jersey." <https://www.nichq.org/resource/aligning-title-v-healthy-start-and-families-increase-new-mother-wellness-new-jersey>. The brief examines the role family and patient engagement plays in improving maternal and infant health outcomes. By looking at how New Jersey engaged mothers in its efforts to improve postpartum visit rates, and increase new mother wellness, the brief provides a road map for using patient and family engagement to optimize interventions.

Source: USBC

World Breastfeeding Week Social Media Kit, From WABA

The World Alliance for Breastfeeding Action has published a social media kit for World Breastfeeding Week 2018: <http://worldbreastfeedingweek.org/social-media-kit/>. The kit includes infographics and GIFS to share, as well as sample Instagram and Twitter posts. Join the conversation August 1-7 at hashtag #WBW18.

Source: USBC