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Crying and Colic: The Untold Story

By
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Colic is one of those frustrating conditions that are difficult to define, explain and treat. And, since colic does eventually resolve, many in the medical community view colic as a benign condition that requires little or no intervention. However, as we learn more about what colic is and isn't this view is changing.

The word "colic" comes from the Greek kolikos, meaning "of the colon," reflecting the common belief that colic is caused by abdominal pain. This is based, in part, on the observation that some colicky babies look like they are having stomach cramps. They pull their legs up into their bellies, the stomach feels hard and their muscle tone increases. They also sound as if they are in pain. Mothers report that crying during a colic episode has a different qualitative sound and the baby is virtually impossible to soothe. Research on cry acoustics has shown characteristics of the "colic" cry identifying it as resembling that of a pain cry with loud, high-pitch, and longer periods of breath-holding.

There is little empirical evidence to support that colic is caused by neuro-immaturity of the gastrointestinal (GI) tract or that medication to treat GI involvement reduces colic symptoms. Other attempts to determine a primary biologic cause of colic, such as allergy to cow's milk protein also have been largely unsuccessful. Soy and other formulas that provide alternatives to cow's milk are available on the market. Changing formula is often one of the first strategies that mothers try, either on their own or based on their pediatrician's recommendation. Breast feeding mothers with colicky infants often implement dietary changes such as eliminating dairy products, and foods like broccoli that they think make their baby "gassy". These strategies do not routinely cure colic either. Non-biologic causes of colic that focus on parenting factors also have been suggested. Parenting issues thought to contribute to colic include parents' misreading their infants' cues, inadequate handling, poor feeding techniques, inexperience, or maternal mood disturbances such as anxiety and depression. As with biologic causes, colic does not seem to be caused by poor parenting either.

DEFINITION AND DIAGNOSIS

The main reason for most of the confusion about and frustration with colic has to do with how colic is defined and diagnosed. The most widely used criteria for diagnosing colic is the Rule of Threes developed by pediatrician Morris Wessel in 1954: crying by an otherwise healthy infant that lasts more than three hours a day, more than three days a week, for more than three weeks (Wessel, 1954). Subsequent research on the normal development of crying collected by asking mothers to complete 24-hour cry diaries showed that crying peaks at approximately 6 weeks and that approximately 20% of infants cry for three hours a day. Crying for three or more hours per day became known as the upper end of the distribution of the normal cry curve and was called excessive crying. By invoking the Rule of Threes, colic was equated with excessive crying and since excessive crying is normal, the argument goes, so is colic. So here we arrive at colic as an expectable variation in the amount of infant crying that becomes translated as a benign condition that is part of normal development.

If we examine the research literature on colic, most studies are based on unselected community samples in which mothers fill out cry diaries. Colic is defined as excessive crying using some variant of the Rule of Threes. Some studies drop or modify the third three – for more than three weeks.

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Parenthetically, in the original criteria "…a fussy infant was defined as one who, otherwise healthy and well-fed, had paroxysms of irritability, fussing or crying lasting for a total of more than three hours a day and occurring on more than three days in any one week" (Wessel, 1954). The inclusion of irritability and fussing with crying makes it more difficult to compare results across studies. Not surprisingly, studies from community samples that equate colic with excessive crying (however defined) often find no differences between colic and non-colicky infants reinforcing the idea that colic is benign. While it is reassuring to know that normal infants act normally, this approach fails to consider colic as a clinical condition.

One problem with the benign colic argument is "caseness." If the peak pattern of crying in early infancy is a behavioral universal of normal infant development, what is the clinical manifestation? When does crying become a clinical concern? And if it is not a clinical concern, it is inaccurate to use a diagnostic category that indicates caseness. It is misleading and confusing for parents when they are told, on the one hand, that their baby has a clinical condition, but on the other hand, not to worry because it is normal. If the message is that it is normal for some babies to cry a lot and that it is not a clinical concern we probably either need to drop the term "colic" from our lexicon and declare that colic as a clinical condition no longer exists or figure out if there are cry-related signs and symptoms that warrant a diagnosis of colic.

In our colic clinic at the Brown Center for the Study of Children at Risk, families come to us because their infants' crying is causing problems. Referrals are made from a variety of sources including pediatricians, nurses, self–referrals, and the hospital's advice line staffed by nurses. Prior to seeking help at the colic clinic, most parents have tried many interventions to soothe their infants. The include combinations of formula and/or diet changes, over-the-counter medications, assorted gadgets, and a range of innovative soothing techniques such as motion, vibration, and sound. Their infants may or may not be excessive criers (most are) but whether or not they are excessive criers there are other issues that define their clinical condition.

In our model crying is a disorder (colic) when the crying is related to impairment in other areas of function. Typically, there is a prominent complaint of a persistent disturbance in the amount, frequency or quality of crying. The cry disturbance may or may not manifest as excessive crying or show additional symptoms including paroxysmal onset, disturbance in the sound of the cry, physical signs related to hypertonia or inconsolability. The associated impairment may include developmentally appropriate tasks, other behavioral domains, disrupted relationships or significant distress in the family. The most common developmental domains affected are infant sleeping or feeding. Problems in the family include disruptions in the parent- infant relationship (typically mother-infant), maternal depression, anxiety, low self-esteem, feelings of inadequacy and incompetence as a parent. Parental nutrition and sleep are often adversely affected and the majority of parents seen in the colic clinic present as very tired, if not exhausted. Parents often verbalize negative feelings, such as anger, disappointment, sadness, self-blame that their baby is crying for extended periods of time and that nothing they do consistently consoles the infant. Marital tensions are not uncommon when parents are trying to deflect these negative feelings away from their infant, getting by on limited amounts of sleep, and trying to manage their other household and work responsibilities. Parents with older children express concern about the toll the infant's crying takes on their other children and how their focus on the infant limits the time and energy they have to expend on their other children.

Research conducted in our clinic supports this view of colic as a clinical condition that contributes

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to impairments in infant and family functioning. Infants with colic have more difficulties with feeding; including disorganized feeding behaviors, less rhythmic nutritive and nonnutritive sucking, more discomfort following feedings and lower responsiveness during feeding interactions. (Miller-Loncar et al., 2004). These Infants with colic also showed more evidence of gastroesphogeal reflux (GER) based on the number of reflux episodes in a five-minute period on abdominal ultrasound following a 2 ounce water feeding as well as parental report of reflux. Mothers whose infants had colic reported higher levels of parenting stress. We also found moderate to severe depressive symptoms reported by 45.2% of mothers whose infants had colic (Maxted et al., 2005). More severe depressive symptoms in the mothers were related to fussy/difficult infant temperament, higher levels of parenting stress, lower parental self-esteem and more problems in family functioning. In a population based study in Rhode Island 8% of mothers of 2-4 month old infants reported that their infants were somewhat or very difficult to console and this was related to moderate to severe maternal depression (High et al., 2006).

Our research is, of course, based on clinic-referred samples and it is well known that clinic referred samples are different than community-based samples. In fact, colic research based on clinic-referred samples shows more colic related findings than research conducted with community samples. For example, in a study of infants referred to physicians for extreme fussiness or colic Zeskind and Barr (1997) found that infants with colic displayed a heightened level of arousal and distress following a feeding as measured by cry acoustics. We have also found differences in the acoustic characteristics of cries in infants whose mothers were concerned with their babies cries. Another interesting finding from the Zeskind and Barr (1997) study is that it included three groups of infants. Of the 38 infants for whom crying was the primary presenting complaint in a pediatric office practice only 13 fit the rule of 3 criteria and 25 did not. In other words, virtually twice as many infants with crying as the primary complaint did not fit the rule of 3 criteria as did meet these criteria.

We also developed the Colic Symptom Checklist (Lester, Boukydis, Garcia-Coll, & Hole, 1990) to measure behavioral and physical signs in the infant aside from amount of crying to help identify, among the pool of excessive criers, which infants show additional symptoms that might help with the differential diagnosis of colic. The Checklist is divided into five symptom sections that include criteria for: 1) amount and frequency of infant crying using the Wessel "Rule of Threes", 2) paroxysmal onset; 3) change in cry quality; 4) physical signs related to hypertonia; and 5) inconsolability. For each symptom section that the infant meets criteria, 1 point is given. Symptom severity can range from 0-5. The validity of the checklist was reported in studies finding effects of colic on infant temperament, acoustic cry characteristics and parental ratings of their infants' cry (Lester et al., 1992) and infants with feeding problems (Miller-Loncar et al., 2004).

But this is not just about differences in sampling strategies. It is an attempt to clarify the diagnosis of colic by distinguishing excessive crying – a normal developmental phenomenon worthy of study in its own right, from colic – a clinical cry problem. Diagnosing colic is like diagnosing hyperactivity. It makes no more sense to diagnose colic by counting how much babies cry than it does diagnosing hyperactivity by counting children's activity level. Hyperactivity is diagnosed because the child's activity level and ability to focus causes significant functional impairment in at least two settings, at home, in school, for parents and for teachers. When hyperactivity starts to become a problem for the child or others, it may be classified as a medical disorder. There are many children whose activity level is at the upper end of the activity distribution who are not diagnosed as hyperactive. Excessive activity no more defines hyperactivity than does excessive crying define colic. So, too, we can make the analogy to multiple situations and diagnoses. It is understood that there is a continuum to illnesses, diagnoses and reactions to life events. If a person presents with a complaint that is causing an impairment in their functioning or causing them to experience distress, why would we merely attempt to normalize their concern, giving them the message that if they better understood the life event that was troubling them, they would have no need for treatment? For example, an individual who seeks intervention after the loss of a loved one gains little benefit from being told that grief is a normal, expectable, even universal, reaction to such a death.

The analogy between colic and hyperactivity is also useful for understanding prevalence rates. Since excessive crying by definition occurs in 20% of babies, equating colic with excessive crying means that 20% of babies have colic. While it is reasonable for a normal developmental phenomenon to have a 20% prevalence rate, clinical syndromes are less common. The prevalence rate for colic, as we define it; an identifiable cry problem in the infant that is causing some impairment either in the infant or in relationships in the family, is probably around 8%. Interestingly, although provenance rates for hyperactivity depend on many factors including age, gender, type of hyperactivity, most estimates range between 2%- 7%.

Our definition of colic does not depend on the cause of colic. In our experience there is no single cause of colic and usually there are multiple causes. In a subset of our patients, colic is due at least in part to GER or "heart burn." In other instances, colic may be exacerbated by a sleeping problem. For some infants there is no explanation for the crying other than the infant's biological make-up. Nor do we require that infants be "otherwise normal and healthy." For example, we have seen

preterm infants or infants born with prenatal drug exposure who have colic in addition to their other condition. Colic is not just in the eye of the beholder. It is not just a mother having a problem with normal crying. Colic is an identifiable cry problem in the infant that is causing some impairment either in the infant or in relationships in the family. Something in the baby is causing a problem for the baby or outside the baby.

A PARADIGM SHIFT

Redefining colic as intense infant crying that significantly impacts family function is a paradigm shift. The infant is viewed within the context of the family, so that diagnosis and treatment of colic includes an assessment of the impact of this behavior on the parents and on the parent-infant (usually mother-infant) relationship. Regardless of how colic is viewed by the scientific and medical community, parents are directly impacted by infant crying. In our colic clinic, it is parental concern about infant crying and inconsolability that brings them to discuss their infant's crying with professionals. They ask questions about why their baby is crying because they often think something may be wrong and want to know what actions they can take to help the baby to feel better. Many parents also have deeper fears that something is really wrong with them. As clinicians, we need to consider the impact our perceptions and interpretations of colic have on parents.

Our colic clinic grew out of an unmet need in our community. Parents who were struggling with colicky infants had few resources to help them actively address their concerns or develop strategies that might lead to a reduction in infant crying. In addition, the impact of infant colic on parent and infant mental health and family functioning was not given attention in a constructive way that allowed parents to discuss the experience within a therapeutic setting that also provided recommendations for how the situation might be improved. Typically, the parents who seek help at our subspecialty clinic have had multiple consultations with their pediatricians.

Parents who come to our clinic often report that they feel a sense of isolation because their concerns are not understood by family, friends, and professionals. It is not uncommon for others to facilely discuss their own experiences with an infant who had colic or to offer reassurances that the baby is healthy and the crying will decrease as a matter of course. The parents we see view infants whose crying fits closely to Wesel's Rule of Threes as bearing little resemblance to the amount and intensity of crying that characterizes their infants. Parents may stop discussing their concerns about their infants' crying with others when the experiences they hear about colic are not reflective of their own situations. When they do hear from another parent of a situation that is similar to their own they find it very helpful.

Parents with a colicky infant are conflicted and confused by their own feelings and by the conflicting advice they receive. On the one hand they "know" that there is something wrong with their baby. On the other hand, they worry that nothing is wrong with their baby and that they "just" need to be better able to accept that their baby cries inconsolably for extended periods of time. This may contribute to feelings of inadequacy and self-blame for their infant's condition. It is important to help parents with the confusion they experience and to restore their sense of competence and well-being.

DESCRIPTION OF THE COLIC CLINIC

The colic clinic is designed to address the emotional and psychological needs of the family, to decrease parental stress, increase adaptive functioning, and promote healthy parent-infant relationships while evaluating and treating any medical conditions in the infant that may be interfering with development. We evaluate the child's social, family and medical history, as well as their growth, development, behaviors and perform a physical examination. The impact of infant crying on the parent-infant relationship and on parental mental health and family functioning is assessed and addressed. We work as a multidisciplinary team, incorporating pediatric and mental health services. This approach reflects our philosophy that steps can be taken to decrease an infant's inconsolability and that when parents are made an integral part of implementing these changes it has a positive impact on family functioning and the parent-child relationship. This is a short-term intervention. On the average, families attend 3 to 4 visits.

The first appointment is scheduled as soon after the initial telephone contact as possible because parents are often highly distressed. The first visit is an information-gathering session in which we collect detailed information about the infant's behaviors (e.g., cry, sleep, feeding), medical history, pregnancy, delivery, and parental medical and mental health history. Interest is also taken in mothers' plans to return to work and, if applicable, what are the anticipated child care arrangements. A snapshot of family life is obtained, including household composition, parental education and occupation, and available social support. Parents are encouraged to identify trusted family and friends who are available to help with the baby, with older children, or in other ways that may be useful to the parents.

Parents are enlisted to gather data that is reviewed by the team and to participate in interpreting and developing a plan of action to address identified concerns. We use behavior diaries with three recent days of infant behaviors (crying, fussing, sleeping, eating and awake time) monitored in 15-minute intervals to examine all aspects of the infant's experience. Completed diaries from the days closest to the visit are color-coded in a way that is visually easy to read. The diaries inform our work with families and help

to better understand the infant's crying.

We conduct a physical exam and plot the infant's growth curve. We use the Infant-GER Questionnaire (Orenstein, Shalaby, & Cohn, 1996) to help determine if the baby has reflux. It is not unusual for infants, drinking entirely liquid diets, who are growing at a pace which results in a doubling of their body weight in 4 months time, to have some amount of milk "reflux" into their esophagus leading to "spitting up" in many and true discomfort in a few. When GER is diagnosed, behavioral and pharmacological interventions are discussed and treatment plans are developed in collaboration with the parents. For example, upright positioning after feeding, thickened formula and/or an acid blocker, an H2 receptor antagonist, such as Zantac may be prescribed. In a few of these colicky babies, probably fewer than 10%, cow's milk protein intolerance causes inflammation in the colon and potentially exacerbates reflux as well. When this is suspected, a 10-day trial of dairy elimination for a nursing mother or a 10-day trial of a hypoallergenic formula for formula fed infants can significantly decrease infant distress. On occasion we have identified nursing mothers who ingested large amounts of coffee, chocolate or soda to stay awake and care for their infants. When caffeine was eliminated from their diets, their infants became less irritable.

Crying and sleeping are often related. When babies do not sleep well, parents do not sleep well either and their joint exhaustion interferes with their patience, judgment mood, self-esteem and good will. In some families parents take shifts staying up with their fussy babies 24 hours a day. In other families, the babies' nighttime crying and wakefulness cause parents to sleep separately. Some babies have reversed their days and nights and some drink only frequent small feedings. These infants are typically able to sustain sleep for only 30 to 90 minute periods before waking and insisting on being fed once more. We typically suggest that any single feeding be limited to 30 minutes in duration and limit volume of any single feeding to about 15 to 20 % of that expected to maintain appropriate weight gain in an infant of that weight in 24 hours. We suggest that parents space feedings at least 2 1/2 hours from the beginning of one to the beginning of the next and that they feed the infant at least every 4 hours in the daytime. We suggest that parents feed their infants in comfortable and quiet settings (not in front of TV) and that middle of the night feedings be "business only," meaning boring with no playing or talking, just feeding and back to bed. When infants are only a few months old we tell parents that after they have been up for 1½ to 2 hours, they are probably ready for a nap. We also limit daytime naps to no longer than 2½ to 3 hours each so that longer periods of sleep will occur more naturally at night. Another sleep promoting suggestion is that parents identify a regular place for infant sleeping and begin to develop routines aimed at easing the transition into sleep. Parents are encouraged to gradually move toward giving their baby the chance to put themselves to sleep. In addition, we always review back-to-sleep recommendations since many parents are counseled to put their child to sleep on their tummy by friends and family and others leave their child snuggled amidst soft bed coverings once they have finally fallen asleep.

One of our initial interventions with parents, once we have gathered detailed information about the infant's behavior, is to validate their concerns. We use a psychoeducational approach by giving them information about the amount of crying and sleeping that would be expectable for an infant the age of their baby. This often serves as a foundation for their being able to appreciate that their infant's behaviors differ considerably from what is generally expectable and can be reassuring in the sense that they have not been "imagining" that their infant's behaviors are not typical. They can recognize that they are in a situation that most people would find stressful. We also try to instill in them a sense of hope by letting them know that we have worked with other parents whose infants have had similar behaviors. We commend them for the efforts they have made to console their baby, on the success they have met with (e.g., a baby who is breastfeeding well, developing normally, gaining weight appropriately, etc.) and for seeking help.

In the course of our initial appointment, parents are asked if they have had thoughts of harming their baby. The majority of parents do not endorse such thoughts but sometimes will comment that for the first time in their lives they can understand how someone without support could hurt a baby. The small number of parents who have said they have had thoughts of harming their infants have been referred to us from other treatment providers. In talking to them further, they most often describe a sense of being in a situation from which there is no escape and wanting to find a way out. For these parents, the thoughts they have had have contributed to their seeking help. We evaluate the baby, follow these families closely and usually enlist additional resources for them.

We most often work with parents to improve the parent-infant relationship by decreasing the stress the parents are experiencing related to their infant's crying, reformulating interpretations of the infant's behavior, and pointing out positive accomplishments of both parents and their infants. When parents are under less stress, they are in a better position to utilize more adaptive coping mechanisms and to develop more effective ways of addressing their problems. We provide opportunities for parents to discuss what the infant's crying means to them and to better understand their perceptions of their infant's crying. The infant is part of the sessions, which creates opportunities for us to comment on developmental accomplishments and on the positive parent-infant interactions we observe.

Parents are given comprehensive written recommendations that they can put into practice to address the factors that are contributing to their infant's crying. Written recommendation start with a synopsis of what is going well and areas of concern. Strategies for responding to infant crying, feeding

concerns, and promoting good sleep habits are provided. Family support measures are also given as a way to help parents to address their own needs while they continue to focus a great deal of time and energy on the care of their infant. Parents are given 2 to 3 weeks in between appointments to implement the recommendations. At return visits, recommendations are adjusted based on the progress that has occurred, infant developmental needs, and any new concerns that may have arisen.

A CASE PRESENTATION

Sam was a healthy, full-term, first-born infant whose mother, Carol, contacted the colic clinic when he was 5 weeks old with concerns about his crying and sleep. Carol identified Sam's fussiest period between 5-10 PM, but he also often cried between 5 to 10 AM and after some feeds. Carol reported that, "When he's not sleeping he's crying." She described Sam's cry as painful and high-pitched. None of the numerous soothing techniques tried by the parents, including playing music, rocking, bouncing, car rides, placing him on top of the clothes dryer, and turning on the vacuum worked consistently. Sam was an efficient feeder who nursed every 2 to 4 hours and was gaining weight appropriately Carol eliminated dairy, vegetables and fruit from her diet to determine if these foods were adversely affecting her infant's behaviors, with some improvement.

Sam fell asleep for the night around 9 PM while nursing. Although Sam's parents wanted him to sleep in a crib, for convenience they put him in their bed so he could easily nurse during the night. For naps, Sam was taken on car rides or walks in his stroller.

Carol and her husband had active professional lives. Sam's father, who worked 12-hour days, came to sessions and was invested actively taking part in family life. Carol was a self-employed professional who worked out of her home. She resumed her professional responsibilities, in a scaled-back way, immediately after delivery and planned to resume full-time work when her infant was 4 months old. Because she worked at home, Carol thought that she would be able to work and care for her infant by herself. The family had many social supports but did not ask for help. They were uncomfortable having anyone else care for the Sam because he cried so much.

Carol had been involved in outpatient therapy in the past for depression, low self-esteem and to help her deal with life events because she had difficulties with transitions. Carol readily admitted that the transition to parenthood was difficult and that she was experiencing a tremendous amount of stress, fatigue, and sadness. She was unprepared for an infant who demanded so much of her and was frustrated that her typical coping strategies no longer seemed to be effective. Carol believed in taking charge of situations by identifying the problem and then taking steps to correct it, an approach that had worked well for her personally and professionally. With her son, however, she felt as if nothing she did worked and interpreted this to mean that Sam's problems were due to her inadequacies as a mother.

Carol was exhausted and stressed. She was encouraged to make use of her social supports by asking for help with Sam and to make time for herself during the day to relax, even if only briefly. More effective, less stimulating ways to soothe the baby were developed and when comforting strategies were not working, the parents were told they could put the baby down to allow themselves a brief respite and give Sam an opportunity to self-soothe , possibly fall asleep or be consoled more readily when picked up again.

Initial sleep recommendations were to develop a bedtime routine to help Sam transition to sleep without nursing and to keep night time feeds "business only". Feeding did not seem to be a problem and information from the Behavioral Diaries did not show crying as consistently occurring during or after feeds. The score on the I-GERQ was of borderline clinical significance.

Improvements made at 7 weeks were that Sam had an earlier bedtime, was sleeping in his crib, and was getting more overall sleep. Sam no longer cried for 5 hour stretches but this was because he was held throughout the day to keep him from crying. Carol remained overwhelmed by the effort that was required to soothe her infant.

Carol identified concerns related to Sam's feeds, describing him as more distracted and seemingly uncomfortable when he nursed. Behavioral Diaries showed periods of fussing and crying occurred during and after feeds. GER was diagnosed and the infant was started on Zantac and behavioral interventions such as keeping him in a semi-reclined position after feeds and elevating the head of his crib were also given.

When treatment of Sam ended when he was 17 weeks old, he was crying less than an hour a day and his parents were pleased that they were increasingly able to distinguish what his cries signaled. Sleep was going well and Sam transitioned to sleep in his crib for bedtime and naps. The GER was well-controlled and the process of weaning from the Zantac had begun.

For Carol, the mental health component was a critical piece in helping her to effectively implement recommendations and improve her relationship with her infant. During sessions, she merged the worries she had about her infant with the worries she had about her failings as a mother. It was difficult for her to take pleasure in her infant or to recognize how well she was caring for him. She had expected she would be able to manage her baby as effectively as did the other areas of her life. When her infant had difficulties that she could not easily understand, interpret and repair, Carol felt she had failed in her attempts at

mothering and this contributed to her feeling sad, discouraged, and anxious. She worried that Sam's behaviors during his early months would be precursors to severe behavioral problems as he grew older. The support and reassurance she was given helped her to discuss how out of control she felt with her first experiences as a parent. Her worries that Sam would continue to experience a range of problematic behaviors in the future were understood in terms that there were going to be ongoing, obvious indications that she was a failure as a mother. When her intense reactions to her situation were explored and she could verbalize her underlying concerns, she began to better understand and manage her distress.

Carol's worries were also approached from an infant-centered perspective which included providing her with developmental information so she could form more realistic expectations of her infant. For example, when she worried because a few people had commented Sam was "serious," developmental information was provided about infants' social smiling. She was also invited to expand on what her infant's lack of smiling meant to her and the thoughts she had about not seeing Sam smile as much as she wished. In this way, she obtained concrete information that she was able to utilize to think about her infant more realistically while at the same time engaging in an exploration of her own issues to increase her understanding of her reactions to her infant's behaviors. Throughout the work, it was important to help the mother identify and acknowledge improvements her infant was making. This allowed her more of an appreciation of her infant and also of herself and the role she played in fostering Sam's developmental progress. Behavior Diaries were useful in providing concrete evidence that positive changes were occurring. Over time, Carol was able to identify improvements in her infant without relying on written information.

The work done with this family in the colic clinic improved the mother's relationship with her infant and decreased the potential for later relationship disturbances. When Carol was able to separate her own fears and feelings of low self-worth from her infant's behaviors, she could more effectively read his signals and respond to them. As she gained an appreciation of her infant as the unique individual he was she could recognize and comprehend his behaviors more as indicators of his needs and less as measures of her own strengths and failings.

At a chance encounter with Carol 3 years after treatment ended she had had another baby, who had none of the difficulties Sam had experienced, and whose early infancy she had greatly enjoyed. She reported Sam was a bright, delightful child who was doing well in all areas. She had vivid memories of how difficult Sam's first months of life were and the emotional toll they had taken on her. She commented that when she heard stories about infants with colic she discriminated between those babies who had "normal colic" and those babies who were similar to Sam. She was pleased that she really "got it" when she heard other parents talk about experiences that were similar to her own and felt she had something to offer them by sharing her own tale.

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REFERENCES

High, P., Cain, R., Kim, H., & Viner-Brown, S. (2006). A population -based survey of infant inconsolability and postpartum depression. Pediatric Academic Societies Meeting, San Francisco, CA; May 2. Journal.

Lester, B., Boukydis, C., Garcia-Coll, C., & Hole, W. (1990). Colic for developmentalists. Infant Mental Health Journal, 11, 321-333.

Lester, B., Boukydis, C., Garcia-Coll, C., Hole, W., & Peucker, M. (1992). Infantile colic: Acoustic cry characteristics, maternal perception of cry, and temperament. Infant Behavior and Developmen,t 15, 15-26.

Maxted, A., Dickstein, S., Miller-Loncar, C., et al. (2005). Infant colic and maternal depression. Infant Mental Health Journal, 26, 56-68.

Miller-Loncar, C., Bigsby, R., High, P., Wallach ,M., & Lester, B. (2004). Infant colic and feeding difficulties. Archives of the Diseases of Childhood, 89, 908-912.

Orenstein, S.R., Shalaby, T.M., & Cohn, J.F. (1996). Reflux symptoms in 100 normal infants: diagnostic validity of the infant gastroesophageal reflux questionnaire. Clinical Pediatrics (Philadelphia) 35, 607-614 .

Wessel, M. (1954). Paroxysmal fussing in infants, sometimes called "colic". Journal of Pediatrics, 14, 421–423.

Zeskind, P.S., & Barr, R.G. (1997. Acoustic characteristics of naturally occurring cries of infants with "colic". Child Development, 68, 394-403.

What is all that crying about?

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Given its universality and salience to parents throughout the world, it is amazing that, until about 30 years ago, there was so little research on infant crying. So little, in fact, that there was hardly anything known about it except that it happened. There has since been a small explosion of studies. These studies have made a difference. We have changed our conceptualization of what early crying is about, of factors that affect the way parents respond, and of its consequences.

It may seem simple, but the realization that crying can be different at different developmental stages (before and after 4 months of age approximately) is an important breakthrough. The studies of Stifter, Zeifman, St. James-Roberts, Barr and Lehtonen all indicate that early increased crying—including the prolonged inconsolable crying bouts that so irritate care givers—is actually a normal developmental phenomenon that occurs in completely normally developing infants. Furthermore, the outcome for these infants is excellent. It is more of a challenge, however, if an infant has persistent fussiness throughout infancy. This is indicative of a normal individual difference referred to as "difficult temperament." As Zeifman notes, parental training in sensitivity and responsiveness to these infants can be beneficial.

The key, as Zeifman, Zeskind, and Oberlander point out, is how the parents respond to these frustrating properties of crying. As St. James-Roberts and colleagues showed, cultural differences in responding vary widely, but do not affect the increased inconsolable crying. On top of that, if the mother is unfortunate enough to experience post partum depression just when this normal increased crying occurs, the cry signal may be read differently resulting in over-responding or under-responding, but in either case less reliably then could be wished.

Anyone who has experienced the worst of this inconsolable crying would admit that it is counterintuitive to think of it as "normal." Being able to understand that, from the evolutionary point of view, lusty, strong crying has been helpful for infants who might receive too little care giving in the first post partum weeks, and that they turn out normally, is an important new way to think about this behavior. If thinking of increased crying as normal became the cultural norm, the anger generated by this age-old behavior might be reduced. This is an important public health target to achieve. It is now clear that it is the anger from this normal infant behavior that triggers most early traumatic brain injury (or shaken baby syndrome). In fact, the dire consequences (death, blindness and motor challenges) of shaken baby syndrome are the only significant negative long term clinical consequences of early increased crying. It is not the crying, but the care givers response to the crying that is the key. That gives us all something important to do; namely, to make sure that we and everyone who takes care of infants know that, no matter how frustrating it gets, never ever shake an infant in frustration.

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Centre of Excellence for Early Childhood Development. What is all that crying about? Montreal. Quebec: Centre of Excellence for Early Childhood Development; 2007. Bulletin of the Centre of Excellence for Early Childhood Development. Vol.6. No.2.

Available at: http://www.excellence-earlychildhood.ca/documents/BulletinVol6No2sep07Ang.pdf.

Accessed (15.12.2007).

Preventing Shaken Baby Syndrome

By
Eve Krakow

New evidence suggests that crying is indeed what triggers some parents to shake their babies. Equipping them with coping strategies may help reduce the incidence of Shaken Baby Syndrome.

Shaken Baby Syndrome (SBS) is a form of intentional injury to infants and children inflicted by violent shaking, with or without impact on a hard surface. It can result in severe head trauma, such as bleeding in and around the brain, retinal hemorrhages and bone fractures. About 25% of clinically diagnosed infants die, and about 80% of survivors suffer lifelong neurological damage.

Excessive crying is often cited as the trigger that causes exhausted or frustrated parents to shake their babies, yet there are limited data backing this claim. Researchers therefore decided to compare the age and incidence of babies hospitalized in California for SBS with the "normal crying curve." This curve charts the pattern of crying demonstrated by babies in the first few months of life.

The results revealed a number of common properties between the two curves. They both begin their ascent when the infants are two to three weeks of age, following a peak; there is an almost linear decline until about 36 weeks of age. The main difference is the timing of the peak: the number of SBS cases peaks at about 10 to13 weeks, while the crying curve peaks at five to six weeks.

However, given that 35% to 50% of diagnosed shaken baby cases have evidence of prior shaking or abuse, this could simply be a delay between cause and effect. "The shaking episode that brings the child to the emergency room may only be the last in a series of shaking episodes that began days to weeks earlier," explains lead author Dr. Ronald G. Barr, from the University of British Columbia.

If crying is the trigger for shaking and other forms of abuse, then prevention programs should focus on improving parents' understanding of the unique properties of early crying. There is increasing evidence that prolonged unsoothable bouts of crying are likely to occur regardless of the soothing methods used. In 95% of cases, this kind of crying is a normal part of a healthy baby's development. Caregivers who are aware of these facts might get less frustrated, knowing that it will pass.

To this end, the National Center on Shaken Baby Syndrome has developed intervention materials called The Period of PURPLE Crying: P for crying peak; U for unexpected; R for resistance to soothing; P for pain-like face (even when the infant is not in pain); L for long crying bouts; and E for evening clustering of crying. Parents are encouraged to take three actions to prevent SBS: First, increase their contact, carry, walk and talk responses, which will help reduce crying, although not stop it altogether. Secondly, if the crying becomes too frustrating, put the baby in the crib and walk away for a few minutes to calm themselves. Finally, never shake or hurt their baby.

Given the similar properties of the age-specific incidence curve for SBS and the normal crying curve, it is hoped that this kind of education strategy will help parents better understand and cope with excessive infant crying, preventing Shaken Baby Syndrome.

References

Tremblay, R.E., Barr, R.G., & Peters, R. DeV, eds. Encyclopedia on Early Childhood Development – Crying Behaviours [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development. Available at: http://www.excellence-jeunesenfants.ca/theme.asp?id=15&lang=EN

Barr, R.G. (2006). Crying behaviour and its importance for psychosocial development in children. 1-10.

St James-Robert I. (2006). Effective services for managing infant crying disorders and their impact on the social and emotional development of young children. 1-6.

Barr, R.G., Trent, R.B., & Cross J. (2006). Age-related incidence curve of hospitalized Shaken Baby Syndrome cases: Convergent evidence for crying as a trigger to shaking. Child Abuse & Neglect; 30:7-16.

National Center on Shaken Baby Syndrome (www.dontshake.org)

Reprinted by permission.

Centre of Excellence for Early Childhood Development. What is all that crying about? Montreal. Quebec: Centre of Excellence for Early Childhood Development; 2007. Bulletin of the Centre of Excellence for Early Childhood Development. Vol.6. No.2.

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Accessed (15.12.2007).

Caring for Crying

By
Eve Krakow

Parents are often given conflicting advice about whether to apply a "scheduled" approach to baby care, or follow their infants' demands. A recent study looked at the impact of different parenting approaches on infant crying and sleeping.

Researchers compared infants and parents in three communities with substantially different parenting approaches. The first group of parents practiced a "proximal" form of care: they held their babies more (15 to 16 hours/day), breastfed more often and slept with their infants throughout the night.

A second group of parents, in London, U.K. adopted a more "structured" approach: they spent much less time holding and carrying their babies, let their babies cry more often, and switched to bottle-feeding earlier.

A third group, in Copenhagen had an "intermediate" method: they held their babies less than the proximal care parents but more than the second group of parents, were more responsive to their babies than the second group of parents, and co-slept with their babies less than proximal care parents and only during part of the night.

The biggest finding was that the amount and intensity of unsoothable bouts of crying at five weeks of age, when colic usually peaks, were the same in all groups. Both babies who received proximal care and those who received intermediate care fussed and cried less overall in the first 12 weeks of life. On the other hand, the babies in both the structured care and intermediate care groups were more likely to sleep through the night at 12 weeks than the proximal care babies.

Ultimately, the "best" strategy depends on what parents want to achieve, says Dr. Ian St James-Roberts, the study's lead researcher, from the University of London. "Proximal care may suit some parents' wish for close contact with their babies. For many Western parents, the goal is to minimize early crying and to encourage their babies to sleep through the night at as young an age as possible. If that's the goal, then the mixed approach to care seems to be better overall."

Dr. Dominique Cousineau, pediatrician and head of developmental pediatrics at the CHU Sainte-Justine in Montreal, says the finding that colic is independent of the method of care will no doubt be reassuring for parents. In her experience, most North American parents practice a form of care similar to the parents in the study who adopted an intermediate approach, because that is what practitioners are advocating. "In the first few months of life, the mother and the child are one. Holding babies and responding quickly to their cries helps develop their sense of security and plays an important role in developing the attachment relationship," she explained. "It also fosters cerebral growth. Parents are teaching their baby that there is a consistent response to their actions, and this helps the brain organize and structure itself."

While the optimal method of infant care is still under debate, parents of babies prone to colic can be reassured by one thing: it's not their fault.

References

St James-Robert, I., Alvarez, M., Csipke, E., Abramsky, T., Goodwin, J., & Sorgenfrei, E. (2006). Infant crying and sleeping in London, Copenhagen and when parents adopt a "proximal" form of care. Pediatrics,117,1146-1155.

Reprinted by permission.

Centre of Excellence for Early Childhood Development. What is all that crying about? Montreal. Quebec: Centre of Excellence for Early Childhood Development; 2007. Bulletin of the Centre of Excellence for Early Childhood Development. Vol.6. No.2.

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CALL FOR PAPERS

Special issue of Infant Mental Health Journal
Guest Editors
Hiram E. Fitzgerald, Tammy Mann, Natasha Cabrera, Michelle Sarche, Desiree Qin

Development of Infants and Toddlers in Ethnoracial Families

Culture is often defined as the shared values, norms, traditions, customs, history, arts, folklore, and institutions of a group of people. Despite what is shared, every racial and cultural group in the United States is itself richly diverse. A number of analyses of the literature on child development have drawn attention to the lack of focused attention to the study of child development in cultural context. During the past two decades, many important volumes on African American, Latino-American, and Asian American families have been published, but few of these volumes specifically address issues related to the earliest years. Even more poorly represented in the core knowledge base of human development is how within-group diversity exerts its influence on early development. In contemporary American society, increasing numbers of children are reared in multi-cultural, multi-racial and multi-ethnic families. Do such families blend their cultures to construct a new context for their children, or does one culture become the dominant standard? Race and culture are linked at macro levels, but within a particular macro culture, there is rich cultural diversity. What effects do racially and culturally diverse family structures have on child development during the earliest years? There is no consensus answer to these questions because the questions have not been adequately researched. We know little about within culture variation, and still less about within culture variation in bi-racial families apropos of early child development.

This special issue of the *Infant Mental Health Journal* will therefore focus on development from conception to age three in samples that predominately or exclusively include infants and toddlers of color. If the sample includes infants and toddlers from diverse ethno-racial groups, sample sizes for infants and toddlers of color must be sufficiently large to make meaningful within group analyses. Consequently, authors must provide more detail about the descriptive characteristics of their samples than is ordinary; within group variation is a key focus of this special issue. Our goal is to contribute to a deeper understanding of the life experiences of infants and toddlers reared in families of color, or in bi-racial families. Whether one's research involves preventive-intervention, child care, parenting, father influences, or attachment relationships, data analyses, discussion, and implications must address questions of within-group variation.

As is usual for the *Infant Mental Health Journal*, we invite papers from all disciplines on all topics that are appropriate for the birth to three age group within the constraints noted above. All papers must be submitted electronically to fitzger9@msu.edu. Papers involving international samples are welcome. The *Infant Mental Health Journal* uses the peer review process to assess the quality of articles submitted for publication. All submissions must be in WORD or Word Perfect format. Send text, tables, and figures in separate files. Papers should not exceed 40 double-spaced pages, 12 point font, inclusive of all material. Deadline for electronic submission of manuscripts is May 1, 2008. Please send submissions and address any inquiries about the special issue to fitzger9@msu.edu.

PRESIDENT'S PERSPECTIVE

By
Professor Tuula Tamminen
President of WAIMH

LOOKING FORWARD TO YOKOHAMA

WAIMH will have its 11th International Congress in Yokohama, Japan on the 1st – 5th of August, 2008. So, in about six months we will have our biennial main meetings and important opportunities to work together once again. The Yokohama Congress will be exceptionally rich and inspiring and from WAIMH's point of view it will offer new occasions to develop WAIMH as a world wide organization.

As all members of WAIMH hopefully know by now, there are two processes of transition going on in WAIMH. First, the AIMH board has started to develop the organizational structure of WAIMH in order to increase the role of Affiliate Associations in our governance. If the majority of the WAIMH members so agree, the recommended changes in our bylaws will take place and Yokohama will be a new turning point in WAIMH's development.

One of the most important changes will be to create an Affiliate Council, consisting of all Affiliate Presidents. This new body will have its very first meeting during the congress in Yokohama. All of the Affiliate Presidents will be invited together with the WAIMH board to this historical meeting so that the new structure will immediately be set in action.

The second transition process is also huge but in a different way. For two years preparations for moving the WAIMH Central Office from USA to Finland have been gradually taking place and after Yokohama the WAIMH Finland Office (WFO) will start to operate from the University of Tampere. This is also a historical step since Professor Hiram Fitzgerald and the Michigan State University have really offered a secure home base for WAIMH for some many years..

In WFO there will be a team of Executive Director, Dr Palvi Kaukonen, Associate Executive Director, Dr Kaija Puura and full-time Research Co-ordinator Minna Sorsa to continue and further develop the activities of WAIMH central office. We believe here in Finland that together with members of WAIMH and Affiliate Associations WAIMH will continue its global growth and successful progress.

The Yokohama Congress will be a remarkable meeting also because it will be the first international infant mental health congress in Asia. This means two valuable things: On the one hand the promotion of infant mental health will become clearly more global and on the other hand the cultural diversity will enrich our field in a fundamental way. Hopefully all participants will enjoy looking at the world from new perspectives.

The scientific program in Yokohama will be extra ordinarily interesting and there will be more high quality plenaries that ever before. The program will again also include the plenary interfaces which were so successfully introduced to the participants of our Paris Congress in 2006. The Program Committee, chaired by Professor Hiram Fitzgerald and the Local Organizing Committee, chaired by Dr Hisako Watanabe have done the very best to create an unforgettable congress! Japanese people are the best hosts in the whole world, so there are many reasons to look forward to Yokohama!

I am looking forward to seeing you in Japan!

EDITOR'S PERSPECTIVE

"NO SOUNDS, NO CRY"

By
Miri Keren, M.D.
Editor, The Signal

As we can see in this Issue, "too much crying" is a very common issue that parents and clinicians need to face. Indeed, in our own community-based Infant Mental Health Unit, this is one of the main reasons for referral. Actually, we have never had a baby addressed to us because of a "lack of cry". Very low birth weight premature babies often don't cry in the first weeks of life, but this is part of their lack of their central nervous system immaturity.

When one thinks in evolutionary terms, the rarity of "no cry" situation is not surprising at all: cry is the main biological-driven "signaling" attachment behavior, appears at the very moment of birth, much before the "proximity-seeking" attachment behaviors are present (it is, by the way, interesting to note that crying behavior does not disappear with age, even though we have enlarged our repertoire of abilities to tell our distress to our close environment). No baby needs its environment to teach him how to cry…. but he/she does learn the reactions to its cry. Therefore, crying behavior may disappear under extreme conditions of persistent negative reinforcement.

The first time I personally came to think about the "no cry" situation was a few years ago, when our Unit started to work with newly adopted post-institutionalized infants and their parents.

In the context of a controlled attachment-based intervention we have been running for 3 years with newly adopted infants (6months-2 and half year olds) from Eastern Europe orphanages and their adoptive parents, we have been struck by the absence of crying behavior displayed by most of the infants, regardless of their emotional and developmental status. It took us some time to notice it, because most of the parents did not report it as a problem. Indeed, "no cry" means "no distress" for ordinary people, including parents! Adoptive parents, actually, often start with the illusion that "now everything is okay with the infant, since he/she's now in a good and loving family", and therefore, may misinterpretate the lack of cry. Only after they understand the impact of the orphanage-linked psychological and stimuli deprivation experiences on the infant's attachment and exploratory systems, they start "hearing the silence". After the instinctive crying behavior has been extinguished, there is a need to actively "teach" the infant that crying is not dangerous anymore, and that it is a legitimate and expected signaling behavior in times of distress. In fact, in cases where crying has provoked very negative reactions, there is a need to provide the parents a "desensitization-oriented" guidance. Generally speaking, we have been surprised to find how much adoptive parents tend to put aside thoughts (and feelings…) about the long term impact of the orphanage experience, in spite of their education and general knowledge. Therefore, it may not be reasonable to expect from them to intuitively address this issue, or even to consult an infant mental health clinician for their non crying infant.

In the light of the long term socio-emotional-developmental importance of healthy attachment behaviors, I personally think that we, as being invested in social mental health policies, need to increase the "attachment-awareness" among our Child Protection social welfare colleagues, who are in the first-line contact with these newly adoptive parents.

Literature Monitor

BOOK REVIEW

Disorders of behavioral and emotional regulation in the first years of life. Early risks and intervention in the developing parent-infant relationships.

Mechthild Papousek, Michael Schieche, and Harald Wurmser (Eds)

Zero-to three, Washington, DC., 2008.

Reviewed by Elizabeth Fivaz-Depeursinez

It is impossible to review in a single column the long awaited translation from german to english of the joint publication under Mechthild Papousek's direction of the Munich's interdisciplinary research and intervention program on early regulation disorders. I hope that an overview of its very appealing contents will speak to the Signal's readers, be they researchers or clinicians.

This book fulfills an important need in the clinical realm in infancy, that of a truly transactional, communicational, system's based model of intervention for what the authors aptly name behavioral and emotional regulation disorders in the first years of life: a model focused on the interaction of infant and parents in facing the regulatory tasks of early childhood; and a model addressing the dysfunctional parent-infant interactions, to which each partner contributes - not withstanding the socio-cultural context. These disorders notably comprise excessive crying, sleep and feeding disorders, failure to thrive and problems of attentional and emotional regulation.

The first section provides a theoretical perspective based on developmental pediatrics (R. Largo & C. Benz-Castellano) as well as on developmental psychopathology (F. Resch) and describes the sample of 701 infants and toddlers which were assessed and treated at the Munich program between 1994 and 1997 (H. Wurmser & M. Papousek). It closes on the central concept of the book, that of using a dynamic developmental systems approach to treat disorders of behavioral and emotional regulation in infancy. Not only is this model founded on the well-known joint research of Hanus and Mechthild Papousek, integrating insights from infancy research, but it also draws on clinical and psychodynamic concepts.

The second section provides an overview of age related clinical syndromes, summarized in four chapters by the team's authors, from excessive crying, sleep and feeding disorders to failure to thrive, to the typical disorders of the second and third years of life – e.g. excessive clinging, social withdrawal and aggressive/oppositional behavior. Of special interest are the detailed case presentations illustrating each syndrome.

The third section describes parent-infant counseling and psychotherapy. Beginning with an overview of evidence-based treatment approaches (K. Sarimski), it proceeds with the psychodynamic aspects of sleep and feeding disorders (respectively R. Barth and T. Jacubeit), with its emphasis on Fraiberg's "ghosts in the nursery", and the developmental systems approach elaborated in Munich (R. Wollwerth & M. Papousek), with its emphasis on parent-infant communication as the port of entry.

The fourth section reports on early identification of long-term risks and preventive intervention. The first chapter focuses on excessive crying in the Munich's sample, showing in particular that the majority of infants had regulatory problems in more than one domain. The findings of the 30 month follow-up point to a constellation of risk factors that may lead to internalizing and externalizing behavior problems for these children in the third year of life. These findings concur with those of the Manheim study reported by M. Laucht and co-workers in the second chapter, whereas the third chapter by M. Papousek focuses on a subgroup of infants with multiple regulatory problems, with dysphoric restlessness, problems of attention regulation and disinterest in play: The author discuses potential developmental links between this syndrome and ADHD in school age children.

What cannot be conveyed through this overview of contents is, beyond the research and clinical sophistication of the approach, the spirit of the therapeutic relationship which is the hallmark of Mechthild Papousek's style: a profound respect for parents and infants and an trust in their intuitive resources for growth.

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