Advances in Nursing Science
Vol. 32, No. 3, pp. E1–E16

Fathering Premature Infants and the Technological Imperative of the Neonatal Intensive Care Unit

An Interpretive Inquiry

Shawn Pohlman, PhD, RN

The experiences of 9 fathers of premature infants in the technological environment of the neonatal intensive care unit were examined using interpretive methods. Fathers were interviewed 6 to 8 times each. Findings revealed emotional costs for fathers as technology often took precedence. Fathers' feelings of frustration, fear, and alienation were hidden from nurses, as fathers were silent and silenced. Fathers perceived a power dynamic between themselves and nurses, which may be due, in part, to a complex interplay between the technological imperative and gender dynamics. Two exemplars illustrated how fathers forged emotional connections with their babies despite the technological imperative. **Key words:** *family-centered care*, *fathering*, *fathers*, *infants (premature)*, *interpretive phenomenology*, *neonatal intensive care*, *parenting*, *qualitative research*, *technology*

Everybody wanted to go in the NICU and see her [his 1 pound, 10 ounce daughter] and I was like "No, nobody's going in there but family" . . . . She's not a freak show. You just can't have everybody come up and see her. She's not just something to *see*, she's something to *care* about and love. And that's just the way I feel. If they don't [feel the same], they don't need to see her.

These are the words of a young father, Larry (F03), who was frustrated with visitors and some neonatal intensive care unit (NICU) staff members, particularly nurses, who he felt focused more on the technology surrounding his daughter than on her tiny sentient body. He felt alienated from those who overlooked the fact that she was a human being who, above all, deserved love and respect. Unquestionably, neonatal intensive care represents a triumph of sophisticated technology that has dramatically improved the survival of premature infants.[1] Yet, our understanding of parenting, particularly fathering, within a technologically textured environment is quite limited. In fact, there is a paucity of research on fathers of preterm infants as a whole.

After a premature birth, fathers must relinquish their authority to the skilled healthcare workers who tend to the machines, wires, and tubes attached to their fragile sons and daughters. Although Larry was grateful for the technology saving his daughter's life, I felt that it was this tension that gave rise to the frustrated "tone" embedded in his opening narrative. One possible reason for his frustration is that fathers desire to protect their children from harm, a drive that may be stronger when a child is impaired in any way.[2]

Having a premature infant is stressful for fathers, who have reported feelings of fear,

Author Affiliation: *Maryville University, St Louis, Missouri.*

The author thanks Lee Smith-Battle, Nancy Cibulka, and Lottchen Wider for their thoughtful review of the manuscript; Teresa Buettner for her careful transcription of the interviews; and the National Institutes of Nursing Research and the Foundation for Neonatal Research and Education for their financial support of this work. This article is dedicated to Kenny, an inspirational man who taught the author so much about fathering and the author herself.

Corresponding Author: *Shawn Pohlman, PhD, RN, 650 Maryville University Drive, St Louis, MO 63141 (spohlman@maryville.edu).*

anxiety, anger, guilt, and helplessness.[3,4] To complicate matters, fathers may keep these emotions tucked inside to appear strong and resilient in support of their partners.[4,5] This pattern is reinforced by deeply engrained cultural and societal parental norms that place the needs of babies and mothers ahead of fathers, a precedent that is naturally exaggerated in the NICU where babies and mothers (at least initially) are the patients.

A stark contrast exists between fathering in a technologically textured environment and in the privacy of one's home, which may put the relationship between the father and the preterm infant at risk from the beginning. Parents' circumstances, including their own mental health, exert a powerful influence on their parenting ability.[6] Because fathers of premature infants embark on parenting in a complex and intimidating environment,[2] with infants who may be irritable, less responsive, and suffer from a host of physical and mental/behavioral problems,[7] fathers' ability to form healthy relationships could be jeopardized. In turn, a child's development—what they learn, how they react to events and people, and what they expect from themselves and others—is greatly affected by their relationships with parents and the environment. Researchers have recently discovered that healthy infants have rich emotional/psychological lives and can suffer in ways that are quite significant yet poorly understood.[6] NICU nurses are in a pivotal position to nurture and coach fathers so that they form healthy relationships with their infants; but to do so effectively, a better understanding of fathers' experiences is needed.

BACKGROUND

Philosophy of technology

The philosophy of technology, a philosophic domain originating just 200 years ago, assumes that technology goes beyond the material presence of the machines; technology is directly associated with historical, scientific, philosophical, and social tenets that are embodied in our culture, politics, language, education, knowledge, and skills.[8] Heidegger, a German philosopher of the 20th century, warned that technology, in its seeming "remoteness," actually will bring about a profound distancing of ourselves from the things around us and from the world, preventing us from really seeing and relating to each other and to things in their entirety.[9] This technological self-understanding is the imperative because it takes precedence in the world today. It is important to understand that this technological self-understanding or imperative is embodied in our practices in ways that are often outside our conscious awareness and control.[10]

Philosophy of technology and nursing

The philosophy of technology and nursing focuses on the experiences, meanings, and implications of technology for nursing practice. In the past, scholars tended to demonize technology and its influence on nursing, which resulted in a conceptual and practical impasse[8,11] because, in reality, such a polarizing approach was not reflective of the way nurses and technology comingle in a space highlighted with more shades of gray than black or white. In practice, nurses dwell in a muddy middle ground with technology. Technology brings nurses closer by increasing their ability to better monitor the patient's physiological status while the demands to be technologically competent may devalue their authentic intention to know persons in their wholeness.[11] Scholars have called for a more complex reexamination of the interface between technology and nursing to capture the full context—the meanings ascribed to the machines, the way the embodied patient is handled, or the choices made about what is humane and dignified care.[8,11,12] To do so, we must examine an important, but often overlooked, part of this picture—the patient and the nurse-patient relationship.[11]

Recently, Almerud et al[13] explored the impact of technology on caregiving in an adult intensive care unit (ICU) from the perspective

of 9 patients, utilizing a phenomenological approach. They concluded that the roar of technology silenced patient's voices and rendered them invisible. Contradiction and ambivalence characterized most caregiving interactions. As embodied patients, they felt trapped and wanted to escape but had no choice due to the insistence of the machines, the regimens, and the routines. Although caregivers did take some time to talk to patients, conversations centered on everyday, more trivial issues. Patients reported that staff shied away from patient stories that might reveal deep concerns or innermost needs, which served to further exacerbate their anxieties.

Turning toward the caregivers, Almerud et al[14] embarked on a study of 8 nurses and 2 physicians who work in an adult ICU. Caregivers' narratives highlighted the demanding, luring presence of technology, from which emerged this hierarchy: The caregiver sits on the top rung; the patient sits on the bottom. This arrangement was costly insofar that technology drove treatment, depleted time, and shaped caregiving attitudes, which then eroded the possibility of close, meaningful caregiver-patient encounters. Caregivers seemed vaguely aware that something had gone awry.

Upon "hyperreflection" of both studies, Almerud et al[12] noted that although technology is part of the ICU staff's daily life, technology can never replace the empathy of the human touch and connection. They suggested that ICU staff build in spaces to promote disclosure, trust, and solace. The challenge for caregivers is to know when to raise the importance of the measurable dimensions that technology contributes and when to magnify the patient's lived experience and to learn to live and deal with the ambiguity of it all.

The NICU and power relations

With technology comes power, which is often granted to healthcare providers, but not to patients.[14,15] In NICU settings, the balance of power favors the doctors and nurses. Because nurses spend so much time at infants' besides, they may find themselves unwillingly at the center of power struggles with parents. Several studies underscore the fact that nurse-mother relations are complex and although these relationships may appear harmonious on the exterior, sometimes nurses and/or mothers may be harboring negative feelings on the inside.[16,17] One prevailing theme from these studies was the imbalance of power between mother and nurse: Mothers struggled to be the "mother" while nurses attempted to maintain their "expert" status. In one study that included nurses, findings suggested that nurses attempted to position themselves as "teachers and monitors of parents," "protectors of the infants," and "experts" by virtue of their training and experience.[17] Interestingly, the nurses were adamant that the relationship they shared with the mother did not affect the infant's care.

Little is known about fathers and power relations in the NICU. Findings from a study of German fathers revealed that fathers were very aware of a power differential between themselves and healthcare providers and feared confrontation with them.[18] "Fathers know that one had better not be openly critical of them [health caregivers] lest they take it out on the baby (a common ever-present fear)."[18(p238)] A qualitative study of the emotional world of Australian parents revealed that some fathers were quite distressed by their inability to protect their infants from the NICU.[2] One father, Jack, described feeling very threatened as his infant was "wired up" because he was unable to function as his baby's protector.[4] Initially, he reacted by trying to be a sort of human shield or "human humidicrib," providing continuity of care to his wife and baby. Over time, he felt angry and resentful because his son had been taken over by the medical system and was "their patient" rather than "his son." Another father, Michael, initially fled to safer ground, his work, because his idealized role of protector was distorted and his ability to achieve fatherhood was fraught with guilt and fear. In this setting, the joy of fathering was elusive.[19]

In summary, the technological imperative of the NICU goes well beyond the machinery; this technological self-understanding is embodied in the practices of the nurses and other healthcare providers as a result of a complex interplay of historical, scientific, philosophical, and social forces in ways that are largely outside their conscious awareness. To better understand this dynamic, a closer look at the interaction between the technological imperative and the nurse-patient relationship is needed. This is particularly important in the NICU, as those who prescribe and monitor the technology (the doctors and nurses) often assume positions of power and authority, whereas the parents may remain relatively powerless. The purpose of this article is to explore fathering and the technological imperative of the NICU, which was one theme that emerged from a broader interpretive study of fathers and preterm infants.[20] The overall study aims were designed to (1) reveal the stressful episodes and coping practices of fathers, (2) examine fathers' resources and barriers as they develop a relationship with their infants, (3) describe how fathers learn practical infant caregiving skills, and (4) discover how fathers own personal meanings of self, family, fatherhood, and work shape his caregiving practices.

METHODS

The methodology used for the study was interpretive phenomenology, which is based on a philosophic framework that assumes that humans dwell in a meaningful world. The researcher strives to uncover the meaning that a particular situation, action, demand, or prospect has for the participant[21] to better "understand world, self, and other."[22(p99)]

Participants

Nine fathers of preterm infants were recruited from 3 Midwestern hospitals over a 7-month period. Enrollment criteria were as follows: English speaking white fathers of singleton infants born at less than 33 weeks' gestation without congenital disabilities. Fathers had to be 22 years of age, be sharing a home with the infant's mother, and be enrolled within 1 month after their infant's birth. At enrollment, each father agreed to participate in 8 interviews. Seven fathers completed all 8 interviews; 1 father (F02) withdrew after 6 interviews because he suddenly left his wife, and another father (Larry, F03) withdrew after 1 interview for unknown reasons, although he was young, was newly married, and his daughter was quite ill. Although I interviewed him only once, our conversation was very rich and compelling as he was unemployed at the time and spent inordinate amounts of time in the NICU. As a result, he provided detailed descriptions of his daughter and the healthcare providers who cared for her, which is why I included his narratives in the analysis. In total, 63 interviews were completed. The institutional review board approved the study and consent was obtained.

Demographic characteristics of the sample are presented in Table 1. All fathers except 1 were married; 8 were first-time fathers. Eight fathers were employed full-time; 3 were manual laborers, and 5 had technical/administrative jobs. Their infants were diagnosed with respiratory distress syndrome, requiring varying amounts of respiratory support after birth.

Data collection

During hospitalization, interviews took place in the hospital and were conducted every 2 to 3 weeks. After discharge, interviews occurred every 4 to 5 weeks in the home. Interviews lasted 60 to 90 minutes and were tape-recorded and professionally transcribed verbatim, resulting in more than 2000 pages of transcribed text. The sequence of the interviews (1st to 8th) and the interview guides used in each interview are presented in Table 2. Interview guides were used only to initiate conversation and encourage dialogue. Probing, clarifying questions grew from our conversations, which helped fathers provide detailed narratives of what they did, thought,

Table 1. Father/infant demographic characteristics

	Father			Infant			
	Age, y	Yearly income, $	Education	Gestational age at wk	Birth weight, g	Age at first interview, wk	Adjusted age at last interview, wk
F01	26	46 000–60 000	College	27	915	29	12
F02	23	<10 000	<HS	29	1722	31	7
F03	22	Unemployed	<HS	25	808	28	28
F04	23	21 000–30 000	HS	32	2196	33	16
F05	39	11 000–20 000	<HS	25	933	27	12
F06	36	>100 000	College	31	1479	33	16
F07	37	61 000–75 000	College	25	515	27	10
F08	38	76 000–100 000	College	28	1018	29	18
F09	30	61 000–75 000	College	26	706	28	18

Abbreviation: HS, high school.

and felt about specific situations, reflecting their practical understanding of the world.

Data analysis

The interviews were analyzed using the interpretive or hermeneutic approach,[10] and the transcribed text and detailed field notes were treated as meaningful text.[22] Hermeneutic analysis involves a systematic, circular process that evolves as the researcher's provisional understanding of the text deepens from successive readings, detailed analysis, and consensual validation from other readers.[23] Analysis began with the scholarly reading of the narrative text, followed by coding of

Table 2. Interview guides and sequence[a]

	Interview sequence							
Interview guide titles	1st	2nd	3rd	4th	5th	6th	7th	8th
Coping	√	√	√	√	√	√	√	√
Meanings of pregnancy	√							
Getting to know your baby	√	√	√	√	√	√	√	√
Work history		√						
Work meanings							√	
History of fatherhood					√			
Meanings of fatherhood								√
Family rituals								√
Demographic form	√							√

[a] √ denotes the use of that interview guide during the interview.

excerpts that reflected the study aims. I then created interpretive files for each participant that included a broad description of each father, followed by descriptive headings that emerged from coding of the data. Blocks of the coded data were then transferred into the interpretive file, in support of the descriptive headings, followed by my interpretive commentary. This systematic approach resulted in detailed interpretive files, often, 50 pages in length and single-spaced, which became the basis for my deepening understanding of individual fathers as well as for my uncovering similarities and differences in family processes and meanings across all of the fathers. The interpretive files provided an audit trail of changes in understanding and my position in relation to the narrative text.[24] An expert interpretive researcher and several doctoral students, who were also conducting interpretive studies, read selected transcripts and provided a critique and consensual validation of study findings. Multiple interviews with each father provided the opportunity to clarify information that was left unexamined in prior interviews.

FINDINGS

The theme, fathering and the technological imperative of the NICU, will be presented in 2 subthemes: the emotional costs of fathering in a technologically textured environment and the power differential between nurses and fathers. In addition, 2 exemplars illustrate how fathers forged emotional connections with their babies despite the technological imperative.

The emotional costs of fathering in a technologically textured environment

Nurses caring for premature infants spend much time and energy monitoring the machines, which may take precedence over tending to the emotional needs of fathers. A story that Larry (F03) told illustrates this point. Larry was unemployed at the time of our interview, so he had ample time to visit the NICU and knew his daughter intimately as a result. He amazed me with his descriptors of his daughter's emerging personality, which were more elaborate than other fathers. He was also an astute observer of the nurses. Our conversation began with a description of his second, skin-to-skin holding experience, which did not go as well as the first.

Larry: The nurse . . . was all right, but she wasn't too good about it. . . . She didn't get the drape and put it around us and she just gave us the rocking chair and said, "Take off your shirt and sit down there." We didn't like it too much. The other nurse, she was really cool about it.

Interviewer (I): Oh, so it varies by nurse.

Larry: Yeah. . . . Like the nurse out there today, she's a real nice woman. She's really caring about the baby and stuff. . . . I like the nurses that care about the baby, see who they are and that they're a baby, that they're a premature baby, not just go over there, do your job, pull the tubes, you know, suction them out, do this, do that, hurry up and get it done with the baby. . . . You know, it's not really being nice to her, it's just trying to take your time.

I: So you can tell that pretty quickly about a nurse do you think?

Larry: Yeah, pretty much. Almost every day there's a different nurse in there. Maybe once or twice you get the same nurse, but almost every day there's a new nurse up there. And I can tell just by how the nurse acts and everything whether she's gonna be gentle with her or whatever. Usually they are pretty rough and I just get nervous. It's not that she don't care about the baby or anything, it's just that she wants to get her job done. That's how I feel. She just wants to hurry and get her job done.

Larry was disturbed by the abruptness of the nurse, who seemed hurried and less careful. Larry certainly did not feel emotionally nurtured during this interaction. Later, he elaborated even more on his feelings: "I don't like her being in the NICU around people who don't care about her—it's not their baby, so they don't know how it feels to be close to her like I am." This quote gets to the heart of his frustration: "Whose baby is it anyway?" Although it is hard to ascertain exactly why the nurse was rushed, there are several

possible factors at work. There is no doubt that nurses today are feeling the pressure to do more with less, which is the result of the trickling down of the technological imperative. The broader culture, as a result of political, scientific, and social forces, places more emphasis on the acquisition and use of sophisticated machines than on the human resources needed to monitor the machinery. As a nurse educator, it is clear to me that our curriculum designs favor biomedical content over socioemotional content—a priority that new nurses (who eventually become preceptors) may carry with them to the bedside. And last, because nurses in technologically textured environments must bear witness to the bodily wrath that the machines, tubes, and wires impose on a daily basis, placing distance between themselves and their patients/families may help them cope with difficult emotional situations that arise (for which they have little training).

Another father, Jeff (F07), recalled being initially troubled when nurses handled his tiny daughter like a "rag doll." He described a diaper change this way:

Jeff: The nurse just grabbed her legs and pulled them up. And I'm like "don't pull them off." They just move her over and move her head.

I: It scares you huh?

Jeff: Yeah, they just kind of move her around just like she's a little rag doll. . . . Not that bad, but apparently they've worked with them more and they know more of what they can do and that the babies are not gonna fall apart. . . . We looked at each other like "wow!"

Although Jeff couches his comment about the rag doll with "not that bad," describing his daughter like a doll has a poignant connotation: Dolls are small and limp like all very preterm infants, but differ in one important way—they are *lifeless.* Jeff seems to understand that nurses have a great level of comfort when it comes to maneuvering preemies (which I can attest to as an experienced neonatal nurse), but nonetheless his initial reaction was one of fear. Again, the reasons why nurses sometimes handle premature infants somewhat cavalierly are complex. Perhaps the work of Foucault, a noted philosopher, may add an important insight. It was Foucault who first labeled the notion of a "medical gaze," which involves "seeing a 'case' or a 'condition' rather than a human being."[15(p311)] He traced this objectified, medical gaze to 18th century French physicians who agreed to treat and help their poor, impoverished patients in exchange for the opportunity to display their bodies for the purposes of educational advancement.[25] Although this practice improved the understanding of diseases, Foucault contended that it changed medicine and reflected a different relationship of man to himself: "Man allowed himself, for the first time, to be constituted as an object of science."[25(p197)] Nurses handling infants as if they were handling dolls is not done with the conscious intent to inflict harm, but this practice may, in part, be reflective of the historical forces that have shaped the technological imperative.

I think it is important to note that Larry and Jeff, like all the fathers in the study, watched the nurses with a careful eye but kept very quiet. They kept their thoughts and feelings hidden despite experiencing a whole host of emotions. Kenny (F05) spoke openly about this dilemma in relation to his son's quite typical roller coaster medical course:

Kenny: It's just a touch-and-go thing. He's, like, sitting at a yellow light and you're wanting to know: Should I go on through it or should I stop?

I: Every day you probably have that feeling.

Kenny: Every day, the emotions, stress. . . . Not to say that I don't cry, because I do and I feel better. I try not to do it around my wife.

Fathers kept quiet to protect their partners who were more overtly distressed and expressive emotionally. Again, Kenny's story illustrates this point well:

I don't need my wife to be upset. I know that after giving birth to a baby that a woman goes through the postpartum blues and it was real hard on her. . . . Being at home every day and not being in the NICU and when she gets in the NICU

she don't want to leave, which I don't either, but I know I have to. It's real hard.

What Kenny failed to mention is that he struggled with clinical depression, which was diagnosed after the baby went home. Three of the 9 fathers were under the care of psychiatrists; 2 were diagnosed after their infant's birth (F05: depression; F08: panic disorder). Toward the end of the interview process, several fathers commented on my role as their "psychologist" or "counselor," lending credence to their need to express thoughts and feelings to an outsider.

Building rapport, and therefore trust (what would seem to be an essential ingredient to feeling emotionally supported), was difficult when fathers saw a new face almost every day. The lack of consistent caregivers was on the minds of several fathers and they found this "discomforting." One father (F08) described what was difficult about having so many nurses:

You get a rapport with somebody and it's hard to switch because you can't just assume you can talk to this person about the same subject and they're going to understand how you're talking to them or what you're talking about or what you mean.

He recalled a nurse who knew him well in this way: "She knows what we want to do or whatever. Some of the other ones just take charge and do it." He felt that having consistent nurses also allowed him the opportunity to get to know the nurses "a little bit better . . . which made it easier to talk with them, makes it easier for you to think 'well, what can I ask this person'?" It appears that providing infants and families with consistent caregivers has taken a back seat to various scheduling pressures, which emphasize quantity over quality, product over process. Perhaps Heidegger's notion of the "distancing" associated with the technological imperative underpins this practice. When nurses do care for the same patients, they quite naturally get to know them better, which may take more time as conversations lengthen and emotions emerge.

The power differential between nurses and fathers

Fathers quickly perceived a power differential between themselves and the nurses. They refrained from criticizing nurses, however, choosing instead to keep quiet, but with a watchful eye. For example, when I asked a father (F08) to describe his participation in his son's care, he noted:

She [his wife] . . . has changed his diapers a couple of times. It depends on the nurse, we don't push, you know. I don't like to get on the bad side of a nurse that's watching my kid and she's the same way. . . . If they say "do you want to change his diaper," she'll change his diaper.

Dan (F09) recalled several situations where he was frustrated by the nurses' actions but was reluctant to confront them. For example, he did not fully understand why the nurses were so nonchalant about monitor alarms. He had to learn for himself that many of the beeps and buzzers were false alarms, but only after a few frightening experiences. Although he became accustomed to the alarms over time, in our second interview, he still felt uneasy, yet remained silent:

They go off and sometimes it doesn't feel like she gets enough attention. I'm not sure why things are going on, like her saturation was dropping down and it keeps dropping down. It is like "hold on, something's going on, somebody do something." Nobody seems to get excited. It's . . . tough to see because I'm sure they know what they're doing, but it's my baby.

When I asked him for more details, he noted that he "can't really tell the nurses how to do their job and stuff, but if it's bothering me that much, then I'll say something." He acknowledged that he was "walking a fine line" in the NICU. On the one hand, he wanted to say something to the nurses, but that could upset them. On the other hand, staying silent could potentially cause harm to his daughter. Dan did become much more assertive at the end of his daughter's NICU stay because he yearned to get her home. He recalled: "I'm pushing the nurses to try her down on her oxygen. We want to get her home, let's go,

you know." Dan was one of the most educated fathers and very self-confident during interviews.

Fathers sometimes felt frustrated because the nurses did not fully inform them as to what they could or could not do with their infants during visits. Dan described the problem like this:

> We didn't feel as informed as we could have about our boundaries. I mean it was like our own child, but we didn't know what we could do with her. It's kind of a strange feeling where she's yours, but you have to ask permission to do things. We weren't sure where the boundaries were and what we should do.

Another father (F06) discovered that nurses sometimes enforced certain "rules" with caregiving. He recalled an episode where he "was coerced by the nurses" to change a diaper:

> I was in there by myself and they said "do you want to hold him?" And I said "yes," and they said "have you changed his diaper?" And I said "no," and they said "oh, if you don't change the diaper, you can't hold him. That's a rule." It sounds like we're making these rules up as we go along. So they all got a big kick out of that.

Although these rules may seem innocent at first glance, they reflect a complicated, taken-for-granted nurse/father and female/male power dynamic.

At times, fathers felt ignored by nurses when visiting the NICU, and they had little authority to change that dynamic. Dan (F09) recalled: "Sometimes when you'd come in, I [wondered] 'Why aren't they coming to tell us things?' I know they saw us come in." When his presence was not acknowledged, even though the nurse didn't appear busy, he became frustrated. This was significant because his usual routine when visiting was to "sit down and start watching her and usually just wait for the nurse to come in and give us kind of a report. We then try to get her out and hold her." He described a good father-nurse partnership this way:

> [The nurses would] come up and tell you everything .... They saw you come in and, as soon as they got a chance, they would come over and fill you in on what's going on with your baby, if anything changed. They'd ask you if you want to do this with her. A lot of times we didn't know we could do that. So then we'd know we should've been doing this.

Fathering despite the technological imperative

Exemplars of 2 fathers, Kenny (F05) and Larry (F03), are presented, as they are illustrative of how fathers developed intimate relationships with their infants in spite of the technological imperative.

Kenny's coaching voice

Kenny was a 40-year-old father whose wife, Denise, gave birth to a son at 25-weeks' gestation. Kenny had only an 8th-grade education but was so attuned to the pregnancy that he experienced severe morning sickness. Because of an incompetent cervix, she had a cerclage placed and eventually went on complete bed rest. Kenny initiated conversations with his unborn son from early on with a definite purpose in mind: to keep him inside the womb.

> I've been telling him "come up here, son" because I knew we had time. She was on bed rest, so I kept telling him, talking to her belly, "come up here, son, come up here." So he really did .... She started having pain and stuff in her ribs and she said that was because the baby was up there, probably kicking her in the ribs.

I discovered that the reason Kenny kept telling his son to "come up here" was to prevent his son from somehow "kicking that stitch and breaking it."

Once Denise was in active premature labor, the doctors discovered that the baby was positioned at a very high station. This news prompted new instructions:

> When she was dilated in there [labor and delivery], they couldn't get him out because he was way up there. So ... I'd talk down low to her belly and I said "come down here son, it's time, come on out, don't worry, daddy'll catch you." And then ... I went out

and smoked a cigarette. As soon as I got back, they was on their way to get me. The baby was already down there and ready to go.

When asked if he felt he had something to do with his son's sudden descent, he noted:

Kenny: Basically, yeah. Probably. I would talk to him all the time when she was pregnant. Talk to her belly. He was moving and flipping around. Every once in a while, you could feel him kick but he was so tiny still, you know.

I: So, you talked to him every day.

Kenny: Oh yeah, every day, every night.

I: What did you say to him?

Kenny: Just that "daddy loves him, keep growing, hang in there, stay in there." Basically after that cerclage was in, I said "stay in there" and "come up here, son."

Whether his words influenced the delivery outcome or not, there is no doubt that this father had established a powerful connection with his son. This strong tie continued in the NICU because Kenny's son recognized his father's voice more than his mother's voice, which drew Kenny quite close to his son. As a caveat, I recall being amazed at how many of the fathers used their voices when describing interactions with their newborns. Many fathers were fearful of holding and touching, and talking was simple, safe, and distinct—men's voices are instrumentally different than women's voices—a perfect fit.[26]

Larry's intuitive stance

Larry's narratives touched me in a special way. I sensed that this little girl filled a void in his life created by a turbulent past within his own family. He gallantly struggled to push back the technological imperative and connect with his daughter:

Larry: I try to get her used to my voice. That's pretty much what I do. I just talk stupid stuff to her, you know, just like you normally do to a baby .... She knows her mom's voice real well.

I: Is there anything in particular that you ... do just to see if Leah can learn that you're the dad?

Larry: I get really close to her, by her face, and talk to her, not real deep or anything .... You know, cause all the other nurses are standing back and she hears their voices but it's a loud voice when the nurses are talking to us .... I know none of the nurses get real close to her and try to talk real sweet to her or anything, but that's what I mainly try to do .... Yeah, she knows her mom's voice. I know she pretty much knows my voice but you know, she just doesn't react to it as well. But that's all right. I'll stick my mouth through that [isolette porthole] and "oooh" like that and try to get her used to my vocal cords or whatever. And talk to her like that, sticking my mouth to her so that she can feel the vibration.

I was especially taken by his description of creating his own signature "vibration" through the Plexiglas isolette. He was not about to let a plastic box stop him from building a relationship with his daughter. He also had no intentions of allowing a nurse's scientific explanation of his daughter's emerging smile dampen his own understanding, as depicted in this excerpt: "I think I seen her smile, but the nurses say it's some kind of reaction in her face that might make her look like she's smiling and stuff. But, I don't care. I still think she's smiling."

DISCUSSION

An interesting paradox seems to exist in the NICU (see Fig 1, which artistically explores the paradox of the technological imperative of the NICU). The startling, loud alarms of the high-tech machinery demand the immediate attention of the nurses, while, at the same time, fathers sit quietly at the bedside—often demanding little but quite possibly needing more. The possible reasons for this dynamic are complex and intertwined.

For one thing, study fathers tended to keep their emotions hidden so that they appeared strong on the outside for their families, confirming previous findings on men and fathers in a variety of contexts.[3,18,27,28] In addition, they found it more difficult to open up with me during the first few interviews, which makes sense in light of previous literature

Figure 1. Painting that artistically explores the paradox of the technological imperative of the NICU.

noting that men typically do not cope with stress by talking and sharing feelings.[29,30] Men grow up learning to be emotionally stoic, so they are often, to some degree, emotionally unaware.[31,32] Because men are less in tune with their emotions, they tend to rely more on their cognition and logically deduce how they should feel. As Levant noted, "They cannot do what is so easy for most women: simply sense inward, feel the feeling, and let the verbal description come to mind."[31(p145)] Nurses, on the other hand, being primarily females, are typically more emotionally aware and therefore may assume that those of the opposite sex are as well—because we all see the world through our own gendered lens. In other words, nurses assume that fathers are doing OK emotionally because, after all, they "look" fine, right? Well, at least in some cases, probably not.

The bottom line is this: The complex paradox that I have described above makes it challenging for nurses to know what is really going on in the hearts of fathers. When nurses are unable to be attuned to the emotional needs of fathers, those needs may go unmet—which can potentially be harmful. This is especially true if the baby is critically ill.

> If . . . parents are not helped to work through the double grief, that is, the loss of the full-term healthy infant they were expecting and the anticipatory grief as they realize that they may lose the baby who has arrived, it is hard for them to resume the relationship with this baby and avoid depression.[27(p217)]

Recently, researchers have discovered that fathers suffer from depression more than originally suspected, with overall prevalence rates ranging from 4% to 28% as compared with that of mothers[33–35] at 6% to 31%. Although research on depression in fathers of preterm infants is very scarce, 1 study that included both mothers and fathers in the sample reported that 33% of parents were depressed.[36] The father's pattern of emotional concealment despite feeling very stressed may offer insight into why some fathers become depressed. Although I did not measure depression, the fathers in this study were indeed stressed and expressed many negative emotions, including frustration, fear, anxiety, and sadness, which supports previous literature[2–5] and may have contributed to the mental illnesses of 2 fathers.

Although emotionally vulnerable, fathers tended to keep fairly quiet. Only 1 father reported assertive interactions with the nurses (Dan, who urged nurses to lower oxygen levels to speed up the discharge date). He was the most confident of the fathers, both with me interpersonally and in his interactions with his daughter. Although she was the

smallest infant and was temperamentally difficult, he quickly became comfortable caring for her, despite the fact he had no previous experience with babies. His own father's dependable presence and calm demeanor may have enabled him to feel secure enough to attempt caregiving, despite feeling scared. Researchers have repeatedly noted that a father's childhood experience with his own father, which is linked to self-esteem,[39] significantly shape his fathering practices.[37,38] Additionally, fatherhood often awakens any past relationship issues.[4,19,40] Of note, in my study, only 2 fathers viewed their fathers positively.

Some fathers reported interactions with nurses that were unsatisfactory, either because the nurses seemed avoidant (although not appearing busy) or they provided hasty, abrupt care. These fathers seemed frustrated by the tension between wanting to be protective yet having little authority, a finding that has been noted by other researchers.[2,4] It is impossible to ascertain exactly what was going on with the nurses during these interactions because my focus was on the fathers, who were interviewed outside of the NICU proper. A complex dynamic, coined the "ambiguity duplex" by Almerud and colleagues,[14] may provide some insight here. They noted that a simple ambiguity results from the insistence of technology, which whittles away time or space for intimate dialogue. A double ambiguity emerges as caregivers realize that failing to talk about emotional issues with patients aggravates a new anxiety: Feelings of insecurity if patients express emotions for which caregivers feel ill-prepared to handle, thus compromising their professional identity. The highest price tag unfolds when caregivers cannot tolerate this ambiguity, become ambivalent, and align with the machines as they have a higher status and constitute the modern day interpretation of the "real work" of nursing.

Nearly all fathers in this study expressed discontent over inconsistent caregivers. A similar dissatisfaction was noted by a father who chronicled his experiences with his premature daughter in a book he authored:

> More concerning than anything else at the time . . . was the consistency of Josie's nursing care. The fact that her primary nurse worked weekends put us at a bit of a disadvantage during the week . . . . We started to notice that Josie was being taken care of by a different nurse practically every time we visited or called—this in a place that tries to emphasize "consistency of care" . . . . Our concern was that they didn't *know* our daughter, didn't understand her likes and dislikes—for example . . . how she loved to listen to the tape I made for her of quiet folk and country songs.[41(p156)]

Fathers in this study yearned for caregivers who knew them and their infants more intimately. Interestingly, nurses' discourse about knowing the patient was a prominent theme that emerged from Tanner and associates' interpretive phenomenological study of 130 neonatal, adult, and pediatric critical care nurses.[42] Nurses' narratives revealed that knowing the patient meant knowing the patient's typical response pattern and knowing the patient as a person, and this knowing was essential to skilled clinical judgment, required involvement, and set up the possibility for patient and family advocacy. When describing their caring for patients and families, their narratives included instances of both involved, attached stances and uninvolved, detached stances. The authors noted that "the detached stance is a common moral position. It allows clinical decisions that are based upon external interpretations, not upon meanings as constituted by the patient."[42(p277)] Nursing care provided by inconsistent caregivers would give rise to such a detached uninvolved stance, which is a by-product of the technological imperative.

Fathers' narratives revealed a power dynamic between themselves and the nurses, shedding new light on previous studies that examined the complexity of the relationships between mothers and nurses.[16,17] There may be several factors in play as to why fathers kept quiet, despite feeling uneasy with the nursing care they witnessed. Early on, fathers may simply not be as attached to their infants as are mothers. In a study of fathers of preterm infants, fathers reported not feeling

attachment until between 4 and 14 weeks after birth.[43] Because fathers may feel like novices in the NICU as compared with their expert status at work, they may feel intimidated by their lack of knowledge, fearful of making a mistake.[5] Fathers are in a precarious position. They are very aware that nurses are the experts in this primarily female arena—a notion they accept, but not without trepidation. At the same time, they are legally fathers with the rights and responsibilities inherent to that role, but they must put those rights on hold, in part because they are marginalized by the technological imperative. Hence, they struggle to find a comfortable place to try on parenting despite feeling like outsiders.

Two fathers, Kenny and Larry, created meaningful connections with their infants irrespective of the technological imperative. They focused more on their practical knowledge, which is defined as "knowledge gained through directly practicing skills and taking up cultural practices."[44(p569)] Both fathers had little formal education but were quite intuitive, relying on their own "gut" sense over more technologic, rational explanations. My purpose in including the excerpt about Larry's daughter's "smile" is not to wrangle with the validity of the nurse's explanation, but to discuss the emotional implications of her response. The nurse overlooked the most important aspect of their interaction: Larry was seeking positive affirmation. By offering a "technical" rebuttal of his observation, the nurse disregarded the validity of his relational knowledge. When nurses automatically accept the superiority of research-based knowledge, other types of knowledge (intuitive, ethical, and personal) are devalued.[45] Nurses are in a pivotal position to influence parental perceptions, and they maybe unaware of the power their words and actions may hold. In order to "push back" the technological imperative, nurses and others have to know their patients, follow the body's lead, and honor life.[46]

In conclusion, this study provides insight into the experiences of fathers beginning parenthood in a highly technologic environment. There were emotional costs for fathers as the technological imperative often took precedence. Fathers experienced feelings of frustration, fear, and alienation, yet these emotions were often hidden from the nurses as fathers kept quiet. Fathers quickly perceived a power dynamic between themselves and the nurses, which is partly the result of a complex interplay between the technological imperative and gender dynamics. Fathers were hesitant to criticize nurses who are the experts in this primarily female-dominated arena. Two fathers managed to put technology aside and became emotionally attuned to their infants despite the technological imperative.

RESEARCH AND CLINICAL IMPLICATIONS

Family-centered caregiving in the NICU implies a threesome—baby, mother, and father—yet our understanding of fathering is quite limited. More research is needed in this area from the perspectives of the fathers themselves. The strengths of this study include the longitudinal, repeated interview design that enabled me to build rapport and really get to know my participants. As the study progressed, fathers' interviews got longer (a finding my transcriptionist confirmed) and included narratives revealing their emotions. Although this study provided the fathers' side of the story, it would be beneficial to include their partners/wives in both joint and individual interviews to deepen our understanding. To ascertain a more comprehensive picture of NICU dynamics, researchers must include nurses and other healthcare workers in their samples. A limitation of the study is the lack of racial diversity; studies that include ethnic and racial diversity are much needed.

It is important for nurses to be aware that, beneath the surface, fathers of premature infants may be feeling emotionally vulnerable but appear strong on the outside. As a result, fathers would benefit enormously from consistent caregiving, which would help build rapport and trust with nurses and promote

disclosure. It is imperative that nurses know the parents if they are to feel cared for and about.[42] NICU management teams must embrace this notion on a philosophical level and then infuse this conceptual framework into all aspects of care delivery. Although I am unaware of any research supporting my next claim, I believe that a consistent caregiver approach would save time and money in the long run. Nurses would likely be more attuned to nuanced changes within their patients/families of patients, which may prevent potential problems from arising, and nurses may experience less burnout because their work would be more meaningful, resulting in less staff turnover.

As a result of the complex, emotionally charged nature of the NICU, parents would benefit from debriefing sessions facilitated by trained professionals as well as depression screenings. Because of limited research in this area, knowing when to screen for depression is unclear. Nurses might also benefit from these same interventions, and it is striking that this notion has been overlooked both clinically and empirically.

Benner reminds us of the importance of telling stories, particularly of breakdown and suffering because therein lies our most valued notions of good patient care.[44] She noted that, ultimately, it is the development of a relationship with another person that sets up the possibility of comforting. Fathers' narratives revealed their emotional vulnerability and I sensed that they, too, needed comforting. When nurses connect emotionally with patients and families, they are able to transmit a comforting ethic, which is embodied in their stances of closeness, distance, gesture, gentleness, roughness, attentiveness, carefulness, or carelessness.[44]

Given the invisibility of the technological imperative surrounding us, how does one become more aware? Dreyfus, a modern philosopher, proposed that we can resist this imperative "in the name of what Heidegger calls the saving power of the humble things."[47(p324)] He advised us to cultivate our skills and sensitivities in order to be tuned to our technological world when appropriate, but without losing our capacity to disclose other worlds as well. As one example, recently I have become much attuned to birds in my feeder outside my kitchen window. I have watched male cardinals feed seeds to their female companions during the spring nesting season, which has opened up a whole new world—a world that was previously invisible to me because I was not *looking*. I am convinced that awakening my senses to the small things has enhanced my understanding of humanity and positively impacted my practice as a nurse educator. I urge other nurses to give this notion a try.

REFERENCES

1. Anspach RR. *Deciding Who Lives: Fateful Choices in the Intensive-Care Nursery*. Berkeley, CA: University of California Press; 1993.
2. Tracey N. Prematurity and the dynamics of birth. In: Tracey N, ed. *Parents of Premature Infants: Their Emotional World*. Philadelphia, PA: Whurr; 2000:37–50.
3. Lundqvist P, Jakobsson L. Swedish men's experiences of becoming fathers to their preterm infants. *Neonatal Netw*. 2003;22(6):25–31.
4. Blake P. A snapshot—a father's reaction to prematurity. In: Tracey N, ed. *Parents of Premature Infants: Their Emotional World*. Philadelphia, PA: Whurr; 2000:117–123.
5. Pohlman S. The primacy of work and fathering preterm infants: findings from an interpretive phenomenological study. *Adv Neonatal Care*. 2005;5(4):204–216.
6. Shonkoff JP, Phillips DA. *From Neurons to Neighborhoods: The Science of Early Childhood Development*. Washington, DC: National Academy Press; 2000.
7. O'Brien F, Roth S, Stewart A, Rifkin L, Rushe T, Wyatt J. The neurodevelopmental progress of infants less than 33 weeks into adolescence. *Arch Dis Child*. 2004;89:207–211.
8. Barnard A. Understanding technological competence through philosophy of technology and nursing. In: Locsin RC, ed. *Technological Competency as Caring in Nursing: A Model for Practice*. Indianapolis, IN: Sigma Theta Tau International; 2005:14–40.

9. Malpas J. Uncovering the space of disclosedness: Heidegger, technology, and the problem of spatiality in being and time. In: Wrathall MA, Malpas J, eds. *Heidegger, Authenticity, and Modernity*. Cambridge: The Massachusetts Institute of Technology Press; 2000:205–228.
10. Dreyfus HL. Heidegger's substantive introduction. *Being-in-the-World*. Cambridge: The Massachusetts Institute of Technology Press; 1991:10–29.
11. Purnell MF. Inside a Trojan horse: technology, intentionality & metaparadigms of nursing. In: Locsin RC, ed. *Technological Competency as Caring in Nursing: A Model for Practice*. Indianapolis, IN: Sigma Theta Tau International; 2005:42–68.
12. Almerud S, Alapack RJ, Fridlund B, Ekebergh M. Beleaguered by technology: care in technologically intense environments. *Nurs Philos*. 2008;9:55–61.
13. Almerud S, Alapack RJ, Fridlund B, Ekebergh M. Of vigilance and invisibility—being a patient in technologically intense environments. *Nurs Crit Care*. 2007;12(3):151–158.
14. Almerud S, Alapack RJ, Fridlund B, Ekebergh M. Caught in an artificial split: a phenomenological study of being a caregiver in the technologically intense environment. *Intensive Crit Care Nurs*. 2008;24:130–136.
15. Davenport BA. Witnessing and the medical gaze: how medical students learn to see at a free clinic for the homeless. *Med Anthropol Q*. 2000;14(3):310–327.
16. Hurst I. Mothers' strategies to meet their needs in the newborn intensive care nursery. *J Perinat Neonatal Nurs*. 2001;15(2):65–82.
17. Lupton D, Fenwick J. "They've forgotten that I'm the mum": constructing and practicing motherhood in special care nurseries. *Soc Sci Med*. 2001;53:1011–1021.
18. Freud W. Premature fathers: lone wolves? In: Shapiro J, Diamond M, Greenberg M, eds. *Becoming a Father: Contemporary Social, Developmental, and Clinical Perspectives*. New York, NY: Springer; 1995:234–242.
19. Tracey N, Blake P, Shein P, Warren B, Enfield S, Hardy H. Narrative of a father of a premature infant. In: Tracey N, ed. *Parents of Premature Infants: Their Emotional World*. Philadelphia, PA: Whurr; 2000:124–142.
20. Pohlman S. *When Worlds Collide: The Meanings of Work and Fathering Among Fathers of Premature Infants* [dissertation]. St Louis, MO: Saint Louis University; 2003.
21. Taylor C. *Philosophy and the Human Sciences: Philosophical Papers 2*. Cambridge, MA: Cambridge University Press; 1985.
22. Benner P. The tradition and skill of interpretive phenomenology in studying health, illness, and caring practices. In: Benner P, ed. *Interpretive Phenomenology: Embodiment, Caring, and Ethics in Health and Illness*. Thousand Oaks, CA: Sage; 1994:99–127.
23. SmithBattle L. Gaining ground from a family and cultural legacy: a teen mother's story of repairing the world. *Fam Process*. 2008;47(4):521–535.
24. Finlay L. "Outing" the researcher: the provenance, process, and practice of reflexivity. *Qual Health Res*. 2002;12:531–545.
25. Foucault M. *The Birth of the Clinic: An Archaeology of Medical Perception*. London, England: Tavistock; 1976.
26. Pohlman S. Father's role in NICU care: evidence-based practice. In: Kenner C, McGrath J, eds. *Developmental Care of Newborns and Infants*. New York, NY: Elsevier; 2004:359–372.
27. Barnett B. Whose baby is it? In: Tracey N, ed. *Parents of Premature Infants: Their Emotional World*. Philadelphia, PA: Whurr; 2000:215–228.
28. Chesler MA, Parry C. Gender roles and/or styles in crisis: an integrative analysis of the experiences of fathers of children with cancer. *Qual Health Res*. 2001;11(3):363–384.
29. Reay D, Bignold S, Ball SJ, Cribb A. "He just had a different way of showing it": gender dynamics in families coping with childhood cancer. *J Gend Stud*. 1998;7(1):39–52.
30. Gray J. *Men Are From Mars, Women Are From Venus*. New York, NY: HarperCollins; 1992.
31. Levant RF. Fatherhood, numbness, and emotional self-awareness. In: Shapiro J, Diamond M, Greenberg M, eds. *Becoming a Father: Contemporary Social, Developmental, and Clinical Perspectives*. New York, NY: Springer; 1995:144–153.
32. Emslie C, Ridge D, Ziebland S, Hunt K. Men's accounts of depression: reconstructing or resisting hegemonic masculinity? *Soc Sci Med*. 2006;62(9):2246–2257.
33. Bronte-Tinkew J, Moore KA, Matthews G, Carrano J. Symptoms of major depression in a sample of fathers of infants. *J Fam Issues*. 2007;28(1):61–99.
34. Bielawska-Batorowicz E, Kossakowska-Petrycka K. Depressive mood in men after the birth of their offspring in relation to a partner's depression, social support, fathers' personality and prenatal expectations. *J Reprod Infant Psychol*. 2006;24(1):21–29.
35. Ramchandani P, Stein A, Evans J, O'Connor TG. Paternal depression in the postnatal period and child development: a prospective population study. *Lancet*. 2005;365:2201–2205.
36. McGettigan M, Greenspan J, Antunes M, Greenspan D, Rubenstein S. Psychological aspects of parenting critically ill neonates. *Clin Pediatr*. 1994; 33(2):77–82.
37. Belsky J. The determinants of parenting: a process model. *Child Dev*. 1984;55:83–96.
38. Daly K. Reshaping fatherhood: finding the models. *J Fam Issues*. 1993;14(4):510–530.
39. Dick GL, Bronson D. Adult men's self esteem: the

relationship with the father. *Fam Soc*. 2005;86(4): 580–588.
40. Barrows P. Fathers and families: locating the ghost in the nursery. *Infant Ment Health J*. 2004;25(5):408–423.
41. Woodwell WH. *Coming to Term: A Father's Story of Birth, Loss, and Survival*. Jackson: University of Mississippi Press; 2001.
42. Tanner CA, Benner P, Chesla C, Gordon DR. The phenomenology of knowing the patient. *Image J Nurs Sch*. 1993;25(4):273–280.
43. Sullivan JR. Development of father-infant attachment in fathers of preterm infants. *Neonatal Netw*. 1999;18(7):33–39.
44. Benner P, Hooper-Kyriakidis P, Stannard D. *Clinical Wisdom and Interventions in Critical Care*. Philadelphia, PA: Saunders; 1999.
45. Chelsa CA, Stannard D. Breakdown in the nursing care of families in the ICU. *Am J Crit Care*. 1997;6(1):64–71.
46. Benner P. Nursing leadership for the new millennium: claiming the wisdom & worth of clinical practice. *Nurs Health Care Perspect*. 1999;20(6):312–319.
47. Dreyfus HL. Responses. In: Wrathall MA, Malpas J, eds. *Heidegger, Authenticity, and Modernity*. Cambridge: The Massachusetts Institute of Technology Press; 2000:331–332.