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Life Course Theory as a Framework to Examine Becoming a Mother of a Medically Fragile Preterm Infant

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Abstract

Life course theory, a sociological framework, was used to analyze the phenomenon of becoming a mother, with longitudinal narrative data from 34 women who gave birth prematurely after a high-risk pregnancy, and whose infant became medically fragile. Women faced challenges of mistimed birth and mothering a technologically-dependent infant. Before social ties were established, legal and biological ties required mothers to make critical decisions about their infants. Liminality characterized mothers' early involvement with their infants. The mothers worked to know, love, and establish deeper attachments to this baby. The infant's homecoming was a key turning point; it decreased liminality of early mothering, increased mothers' control of infants' care, and gave them time and place to know their infants more intimately.

Keywords

Ante/intra partal/post partum care; Attachment/involvement; Birth; Parenting; Parent-child relationships; Pregnancy

Nurse scholars frequently borrow theoretical frameworks from other established physical, biological, and social sciences (Munhall, 2007). Although it is important that theoretical foundations distinct to nursing research and practice are developed, the use of extant frameworks from other disciplines may offer unique insights into phenomena of interest to nurses. Life course theory is one such framework. Rooted in sociology, life course theory is congruent with nurses' holistic focus on the lives of individuals and families. The purpose of this study was to assess the usefulness of application of life course theory to the phenomenon of becoming a mother. We describe this phenomenon in women who became mothers after a high-risk pregnancy ended in preterm delivery of an infant who became medically fragile.

High-risk pregnancy, a condition in which substantial risks exist to the health of the woman and the fetus, is an important predictor of infant birth outcome (Lobel, DeVincent, Kaminer, & Meyer, 2000). Medically fragile refers to infants with life-threatening chronic illness who are, at least temporarily, technology-dependent, and who have health sequelae requiring extended hospitalization or frequent rehospitalization (Miles, Holditch-Davis, Burchinal, &

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Nelson, 1999). We first describe the major principles and concepts of life course theory. Then we demonstrate our application of life course theory to this phenomenon.

Life Course Framework: Principles

Prior to the development of life course theory, social scientists explained human behavior in two ways. First, a social relations approach was used to examine the effects social structures such as marriage and family had on individuals. Subcategories of this approach include functionalism, exchange theory, and ecological systems theory. Second, a temporal approach was used to examine lives that were followed or explained longitudinally (Giele & Elder, 1998). The complexities of lives, however, were not completely captured by these approaches (Giele & Elder); neither alone was adequate to explore the intricate interrelationship between social structures and the impact of time, place, and history on individuals' lives. Research from these approaches converged to shape the development of life course theory in the second half of the 20th century (Elder, 1996).

Life course research is distinctive in its weaving of a "fabric of methodological pluralism" from social sciences and humanities (O'Rand, 1996, p.53). Continuity and change, social structures, and the relationships among time, place, and lives as contexts for developmental processes are foci of life course research (Elder, 1996; Elder, Johnson, & Crosnoe, 2003; Settersten, 2003). In the past two decades, life course researchers have recognized the significance of the physical body (Elder, 1996) and that the mind and body are inseparable (Magnusson & Torestad, 1993). This important paradigmatic development in life course studies is congruent with nursing research and practice focus on biological and psychosocial responses of humans in health and illness over time.

A fundamental assumption of life course theory is that lives are lived in a reasonably ordered manner in patterns shaped by age, social structures, and historical change (Elder & Johnson, 2003). Life course theory has five distinct principles: (a) time and place; (b) life-span development; (c) timing; (d) agency; and (e) linked lives. We used these principles to examine and explain high-risk pregnancy, its premature conclusion, and subsequent mothering of medically fragile preterm infants. After a brief description of each principle, we explain how we view its applicability to the phenomenon of becoming a mother under these particular circumstances.

Time and place

Human lives are shaped by questions of when and where in a sociohistorical sense, making the principle of time and place foundational to life course research. Culture defines a specific place in time (Gieryn, 2000). Use of obstetric technology expanded in the late 20th and early 21st centuries, marking the beginning of a cultural shift in which prenatal testing, ultrasonography (US), and electronic fetal monitoring (EFM) have become the norm Similarly, neonatal technology has created a culture that includes a language of laboratory values, ventilator settings, and feeding volumes that replace conversations typical of parents, relatives, and friends after the birth of a fullterm infant. The technical and medicalized culture of both obstetric and neonatal care may influence women's experiences of high-risk pregnancy and subsequent mothering.

Life span development

The second principle, life span development, is characterized by the view that humans develop in biologically, socially, and psychologically meaningful ways beyond childhood (Elder et al., 2003). New situations encountered in adulthood are shaped by earlier experiences and their attached meanings (Marshall & Mueller, 2003), suggesting that how

women become a mother to a sick infant will be shaped by their previous relationships and mothering.

Timing

Timing may affect women's responses to mothering an ill infant. The concept of time here refers to chronological ordering of events, rather than situating events in historical cultural contexts. Although life events are not rigidly predetermined, certain biological events are chronologically ordered such that, if experienced out of order, physical and social consequences will vary from those that occur within the expected timing or order. For instance, preterm birth is a biologic event in which delivery occurs earlier than expected. Life course theory suggests that a woman's own development and pre-existing behavioral patterns will shape how she and those within her social sphere contend with this out-of-sequence event.

Agency

Agency is based on the assumption that humans are not passive recipients of a predetermined life course but make decisions that determine the shape their lives. Decisions are influenced by one's temporal orientations to the situation, with some decisions requiring intense focus on the present and others influenced by long-term goals (Hitlin & Elder, 2007). Agency has particular salience in the context of preterm birth. Mothers make life-shaping decisions for themselves and their sick infants, with limited insight into the consequences of those decisions.

Linked lives

The core life course principle is linked lives, the perspective that lives are lived interdependently and reflect sociohistorical influences (Marshall & Mueller, 2003). Linked lives refers to an integration of social relationships extending beyond formal family ties, such as friends, neighbors, and work colleagues who provide a "distinct orienting context" (Marshall & Mueller, p.11). Social linkages shape how individuals interpret life events. People vary widely in the manner and degree in which they integrate social norms, relationships, and institutions. Integration may be discontinuous or disrupted under certain circumstances (Giele & Elder, 1998). The lives of mother and infant are uniquely linked, shaping and being shaped by each other in the continuing process of human development. However, becoming a mother of a medically fragile preterm infant is complicated by the unexpected and unknown. The discontinuous or disrupted nature of this mistimed biological event may affect the manner in which initial linkages are formed.

Key Life Course Concepts: Trajectory, Transition and Turning Point

In addition to these principles, three key and related concepts — trajectory, transition, and turning point — are commonly used in life course research to describe human developmental phenomena. Trajectories are "paths of change in developmental processes" (Van Geert, 1994, p.31) and mark the long view of the life course. Long-term human phenomena such as work life, education, parenting, and marriage are often described in terms of trajectories.

Transitions are entry points for new states or roles within trajectories (Hagestad, 2003). A transition is a gradual change often associated with acquiring or relinquishing roles, such as changing careers within the work life trajectory (Elder & Johnson, 2003). In the life course framework, roles are the positions that persons occupy within social institutions, such as mother within a family (MacMillan & Copher, 2005). "Transition" is often used to describe women's developmental challenge of becoming a mother (e.g. Drake, Humenick,

Amankwaa, Younger, & Roux, 2007; Kitzinger & Kitzinger, 2007), and is a common theme in perinatal nursing literature.

Transitions have a liminal quality, that is, being on the threshold or edge of a physical or psychological state (Turner, 1974). Liminality is “neither here nor there,” “betwixt and between all fixed points of classification” (Turner, 1969, p. 232). Liminal phenomena evoke negative feelings (Jackson, 2005), reflecting ambiguity that is threatening because it disturbs one’s sense of order (Turner, 1969; Turner, 1974). Women’s transition between pregnancy and motherhood of a medically fragile preterm infant may be characterized by ambiguity, a liminal state where one is not fully situated within the state from which one is emerging — the mistimed end of pregnancy - yet not firmly established in the state towards which one is making a transition — motherhood

Turning points involve abrupt and substantial change from one state to another (Cairns & Rodkin, 1998). Shin and White-Traut (2007) identified the removal of a preterm infant from the isolette and discharge from the NICU as turning points in the transition to motherhood. The sudden end of pregnancy, the birth of a preterm infant, and the infant’s illness may serve as turning points in women’s lives resulting in substantial adjustments in the childbearing and mothering trajectory.

Mothering the Medically-Fragile Preterm Infant

Becoming a mother means moving from a known to an unknown reality (Mercer, 2004). The decision to become a mother is characterized by ambivalence, calculation of the timing of pregnancy, and determination of effects on significant relationships (Sevon, 2005). Women whose pregnancies are high risk and who deliver prematurely face substantial challenges in developing their maternal role and identity, working to become mother to this specific infant (Lupton & Fenwick, 2001; Nystrom & Axelsson, 2002), especially when the infant is medically fragile.

Early interactions between mothers and their preterm infants occur in the atypical environment of the NICU, where mothers experience uncertainty, powerlessness, loss of control, role alterations, and being an outsider (Nystrom & Axelsson, 2002; Siedeman et al., 1997; Wereszczak, Miles, & Holditch-Davis, 1997). Facing the possibility of infant death, poor prognoses, and loss of the ideal infant (Docherty, Miles, & Holditch-Davis, 2002; Mercer, 1995), mothers struggle to provide care for their preterm newborns,experiencing difficulty feeling like mothers (Lupton & Fenwick, 2001).

When the infant is medically fragile, these experiences are intensified. Mothers of medically fragile infants face significant distress, including depression and grief (Aite et al., 2003; Docherty, et al., 2002; Miles et al.,1999). Separations caused by infants’ hospitalizations impede mothers from providing care (Brunssen & Miles, 1996; Miles & Frauman 1993). Once the infant is home, the mother is burdened by providing illness care in addition to usual care (Carey, Nicholson, & Fox, 2002; Carnevale, Alexander, Davis, Rennick, & Troini, 2006). Mothers face additional challenges because their infants’ severe complications place them at higher risk for social deficits than healthier infants (Landry, Chapieski, Richardson, Palmer, & Hall, 1990). Mothers may not recognize immature cues or atypical responses of these infants (Goldberg, Morris, Simmons, Fowler, & Levison, 1990; Landry, Smith, Miller-Loncar, & Swank, 1997; Singer et al., 2003), especially in the first 6 months after birth, although mothers may compensate for the medically fragile infant’s social deficits by being more responsive (Holditch-Davis, Cox, Miles, & Belyea, 2003).

Using a life course perspective in this study, we focused on becoming a mother as an aspect of adult development within a sociohistorical context characterized by highly medicalized

obstetric and neonatal care in the U.S. in the latter decades of the 20th century and early 21st century. Although commonly used in nursing literature, *context* has often been defined narrowly as the setting for practice (e.g. Swanson's 1990 phenomenology of providing care in the NICU) or the patient's immediate social situation (e.g. Hagren, Pettersen, Severinsson, Lutzen & Clyne's 2005 description of the lives of patients receiving hemodialysis). We examined ambiguous and liminal aspects of becoming a mother to a medically fragile preterm infant, identifying significant turning points at which women moved from a liminal state to explicit identification as mother of this infant.

Method

This study is a secondary analysis of data from a longitudinal study of medically fragile infants, the process of parental role attainment, and its influence on parenting outcomes (Miles et al., 1999). In the original study, 83 fullterm and medically fragile preterm infants were enrolled while still hospitalized and followed until 16 months of age. Infants' mothers were the primary informants.

Sample

For this study, data were analyzed from 34 mothers of these infants who met inclusion criteria: (a) they were diagnosed with a high-risk prenatal condition such as pre-eclampsia; and (b) they delivered a preterm singleton infant who became medically fragile. Demographic characteristics of the sample are in Table 1. Both the original study and this secondary analysis were approved by the institution's human subjects review board.

Procedures

Data were obtained in a series of hour-long semi-structured individual interviews that focused on salient elements of the mothers' current experiences, such as early hospitalization, discharge preparations, and being home with the infant. Interviews were conducted at five time points: at study enrollment, which occurred once the infant was expected to survive for at least several months; 1 month after discharge home; and then at approximately 6, 12, and 16 months of age, corrected for prematurity. These time points were necessarily fluid, contingent on the infants' ongoing health and maternal constraints such as returning to work, child care availability, and subsequent pregnancy. The data were collected in response to the research questions that guided the original larger study. The application of life course theory as a secondary analytical framework was unique to this smaller study.

Data Analysis

Data were analyzed by one investigator, although research team meetings were held to discuss the ongoing analysis. Questions of analytic precision and fit of the data to life course principles and concepts were the focus of discussions among the investigators.

Content analysis is a "classical procedure for analyzing textual material" (Flick, 2002, p. 190). Specifically, directed content analysis (Hsieh & Shannon, 2005) allowed for the examination of the phenomenon of becoming a mother of a sick infant using an existing framework. This is a structured approach to the text. Data were first examined for evidence of the five key principles of life course theory and then identifying transitions and turning points in mothers' narratives. Giele and Elder's (1998) definitions of each of the five life course principles were used in this analysis. Ambiguous or liminal phenomena that appeared to be related to becoming a mother but did not clearly meet the definitions were noted and set aside for further analysis to determine how they were related to these key concepts.

This directed content analysis varied somewhat from Hsieh and Shannon's (2005) version in that the life course framework is not a theoretical rendering of mothering, but rather is a general framework applicable to a variety of human experiences occurring over time. Application of life course theory to the phenomenon of becoming a mother, about which a significant literature exists, allowed for an expansion of the understanding of mothering a medically fragile preterm infant. An important caveat in applying an existing framework to data for analysis is that the meaning of the text may be obscured by an overly strict interpretation based on the constructs of the framework (Flick, 2002). An important safeguard to prevent this is careful paraphrasing to explain the text, not to replace it.

Each woman's experience had unique features; however, early in the analysis, differences emerged between experienced mothers (*n*=14) and those with no previous mothering experience (*n*=20). Three experienced mothers were 24 years old or younger; 1 of these was an adolescent (19 years old). Of those with no previous experience, 9 were 24 years old or younger; 3 of these were adolescents less than 20 years old. Subsequently, within-group comparisons of experienced and inexperienced mothers were made to examine similarities and divergence in their experiences of their high-risk pregnancy and mothering of their medically fragile preterm infant. Later, between-group comparisons were made. This flexible analytic strategy allowed for the development of findings supported by the data that went beyond the initial life course principles and concepts.

Importantly, although mothers were interviewed about 5 times over the course of the study, the timing of these interviews in relation to the infant's post-menstrual age varied considerably. The nature of each infant's particular illness and degree to which they were technology-dependent varied substantially. Therefore, cross-sectional analysis at specific time points was not a useful analytic strategy.

Findings

Mothers' stories yielded both retrospective and prospective longitudinal data. Narratives about pregnancy were necessarily retrospective, with mothers beginning to make meaning of the end of the pregnancy and delivery by the time of the initial interview. The prospective nature of subsequent interviews allowed mothers to articulate both their current concerns regarding their infant and mothering and a retrospective view of what had happened since the last interview.

Time and Place: A Culture of Technology

Mothers' narratives across time reflected two distinct technological cultures: pregnancy, in which technology was focused on her, her body, and the developing fetus, and the NICU, in which technology was focused on the infant. Mothers frequently referred to informational technology (electronic fetal monitoring [EFM], ultrasonography, photography, infant monitors) and supportive technology (ventilators and feeding tubes). Both types of technology were simultaneously reassuring and confusing as meanings of these data were often ambiguous.

Some women experienced tension between the physical and the technological — what the mothers experienced within their bodies and the health care providers' reliance on technological data. This was particularly true of EFM. Several women related that despite tocolysis, signs and symptoms of active labor were ignored by labor nurses who trusted the EFM over women's complaints of labor. One woman delivered a very small infant in her bed as her nurse told a colleague that "the monitor didn't show any contractions." One mother with repeated fetal losses, however, had the opposite experience. An ultrasound examination revealed that her cervix was dilated 4 centimeters. She did not appreciate the

presence of contractions until the EFM showed them. For this woman, technology refuted her physical experience of no labor.

Similarly, ultrasonography during pregnancy yielded ambiguous findings. Occasionally, these examinations contradicted estimates of fetal gestational age based on the woman's last menstrual period (LMP), leading to obstetric management uncertainty, especially when the fetus appeared to be younger than the woman's LMP suggested. One fetus with a large neck mass was given poor odds for survival, although the physician admitted that she did not have much information on which to make that assessment. Despite this grim prognosis, the mother was told "not to be alarmed" when given photos of the baby immediately after birth, although the mass obstructed his airway, necessitating a tracheostomy. Another mother described sadness upon seeing her fetus on ultrasound as "a healthy baby who was just coming too early." This mother refused to watch the screen during subsequent examinations to protect herself from the painful prospect that her "healthy baby" was likely to die.

Photographs were another form of informational technology for the mothers. After delivery, photographs of their infants were given to mothers who could not yet see them first hand. As with ultrasound images, photos yielded ambiguous information requiring interpretation. Half of the women had cesarean sections and protracted recovery periods. Separated from the reality of the birth, many mothers awakened from general anesthesia fearing that the infant had died. Photos allayed these fears. However mothers usually had to ask nurses to interpret monitoring and life support devices in the photographs. Thus, most mothers did not find photos to be particularly reassuring except as evidence of the infant's survival. Later however these same photos provided unambiguous evidence of the infants' progress and growth since birth.

The infants' supportive technology shaped women's mothering experiences substantially. Mothers marked time and infant progress by ventilator settings and oxygen requirements. For these mothers, presence of the ventilator signified a troublesome impediment in establishing a physical and emotional relationship with their infants. High ventilator settings were particularly worrisome; one mother vividly described the high pressures her infant required as "beating his lungs to death." Decreasing oxygen and ventilator settings allowed mothers more freedom to interact with their infants and less worry about extubation and overstimulation.

Mothers learned to manage the infant's technology, including nasal cannulae, oxygen generator concentrators, and tube feedings. Although competence was their goal, mothers mourned the loss of what they never had: the opportunity to parent their newborn as healthy. Their mourning was particularly apparent in early mothering. Mothers later reflected on the sadness of those early days, although at the same time recognizing the necessity of technology for the infant's survival. One mother recognized the heavily technologized environment that her infant required to survive: "He came into a totally different world." Although their infants' need for supportive technology was unambiguous, mothers' own place within the technologically-laden culture was liminal, requiring them to remain physically distant at a time when their desire was to hold, feed, and care for their own baby.

Life-Span Development and Timing Related to Childbearing

Development across the life-span and timing were highly salient life course concepts in mothers' experiences. The two concepts will be considered together as the issues of timing, especially the disruption of high-risk pregnancy ending prematurely, and the ensuing adult developmental issues for the mothers were closely related. Distinct developmental differences were found between first-time mothers and experienced mothers.

In particular, young (≤ 24 years old) first-time mothers described their adult development and maturation as notable responses to unplanned pregnancy, preterm birth, and infant illness. Although most of these pregnancies were unplanned, they were accommodated into the women's work, family and social lives with ease. However, activities of late adolescence and early adulthood such as unencumbered socializing were replaced with the responsibilities of parenthood. A young first-time mother explained, "You know, you look at that child, and you say, 'Okay, that's my responsibility, and that's a big responsibility.'" Another young first-time mother pursued higher education, believing that her own "self-improvement" ensured "a good life" for her infant, although her infant's frequent hospitalizations delayed her plans. For this mother, a key point came when she understood that the infant's prematurity was "not my fault," allowing her a more mature understanding of the complications causing her premature delivery.

For young first-time mothers, these experiences resulted in accelerated maturation, leaving them out of step developmentally with their childless peers and those with normal pregnancies and deliveries. This meant that they inhabited an ambiguous developmental space, older adolescents or young adults by age but facing responsibilities usually reserved for older persons. Preterm birth represented a turning point for these young mothers, forcing them into adulthood early.

Like younger, first-time mothers, experienced mothers also described developing patience and strength to face future setbacks. However, older, experienced mothers described this situation in relation to their previous experiences. These mothers felt competent, even when this was their first preterm infant. Experienced mothers made the needs of children at home a priority over those of the hospitalized infant; the sick infant had caregivers around the clock, while children at home depended on her. These mothers described increased patience and willingness to see the pain of others. One mother explained her experience as making her "more attentive…to everything and everybody around me. I notice things I didn't notice before."

Issues of faith were also salient to adult development. Mothers frequently commented on an increased reliance on faith and religion, striving to discern meaning or a larger sense of purpose in their lives. They recognized the disordered nature of their experience and sought to impose order, often through understanding their infants' condition in context of faith or religion. They explained the preterm birth as "God's will" or attributed survival to God's plan or miraculous intervention. Mothers often referred to their "miracle baby" in terms of the small size or severe illness that the infant overcame. One mother explained her infant's struggles in terms of his future: "He is meant to be something someday."

Agency: Choices and Actions Related to the Pregnancy and Mothering Experience

Issues of agency were most salient to women at two particular occasions: the end of the pregnancy and at times of severe infant illness when discontinuation of life support was considered. At the end of pregnancy, the locus of agency lay outside the women. The end of pregnancy was often sudden and unexpected, catching the women off-guard. "Bombarded with change" was one mother's comment who recalled having "no choice in the matter" in preparing for hospitalization and transfer to a medical center. Passivity was evident among the women, who frequently used language such as "*they told me* [what was going to happen]" and "*I didn't know*… [what the plans were]." Health care providers, not the women, determined that the pregnancy was ending or needed to end; women had no real choice except to acquiesce to decisions and plans of others.

In contrast to their experiences at pregnancy's end when they had no say in their own care, mothers were asked by neonatologists to make life and death decisions about their infants

when the stakes were the highest. This situation underscored their liminal state. Agency was a matter of weighing the unforeseeable or ambiguous consequences of their decisions, balancing their own needs and desires for a child against the suffering and sequelae that the infant might endure. Although agency vis-à-vis the infants was not situated solely with the mothers, mothers of the sickest infants recalled being asked to make significant decisions at points of the most severe complications. Mothers most commonly adopted a "wait and see" posture, continuing current medical interventions although maintaining the right to change their minds if infant did not improve. A 29-year-old first-time mother recalled the conversation with the health care team about discontinuing her infant's support: "They were ask…telling me, or sort of urging me, I think, to turn off the respirator on him, and just let him go because there's no way he's going to make it anyway. But I just can't take matters into my own hands and say, 'okay, this is the day that you're going to die.'" In a clear act of agency, and over mounting pressure to terminate support, she took an active stance on behalf of her infant: "You don't get it, you know. I'm not turning off the machine." The mother reported that a nurse later apologized for pressuring her.

Linked Lives: Network of Shared Relationships

The principle of linked lives explains the ways that mothers formed social and emotional linkages with their infants. First-time mothers generally had different experiences from mothers with previous children. First-time mothers focused primarily on the infant, secondarily on immediate family ties including the infant's father, then the extended family, and last on the larger social network of friends, coworkers, and church family. Mothers with previous children found that their attention and energy were, regrettably, divided between the hospitalized infant and their children at home. A mother who had a previous child born prematurely described her older child at home as "not doing very well." Although recognizing that "this might sound heartless, but…", she described her priority as maintaining normalcy for her preschooler at home. Experienced mothers described social hierarchies similar to those of new mothers, with the exception that their previous children took priority over the hospitalized infant.

Liminality characterized all mothers' early involvement with the infant, requiring them to forego previous expectations of the perfect baby and enter into a process of coming to know, love and then "bond with" this particular baby under difficult circumstances. Mothers differentiated between feeling love for the infant and the establishment of a bond between them. For some, feelings of love began in pregnancy but were placed in a state of suspension after birth until the baby's survival was likely. Mothers recognized a lack of depth or significant attachment to the infant after birth that functioned to spare their feelings if the infant died. They occupied a liminal space where love was present but deeper bonds that tied the infant to them and their extended social network were not yet forged. "Oh my god, I love this baby!" was one mother's response to the image of her 16-week fetus on the ultrasound screen. She delivered at 25-weeks gestation a sick infant whose early critical illness led this mother to make a distinction between her "love for" the infant while not yet "form[ing] a bond with" the child.

Several mothers initially were equivocal in their desire to see their infant, afraid that this would cause them more suffering if the infant died. One mother described her 26-week preterm infant as "a micro-preemie" who "looked bad," and whom she "did not want to live, really" when seeing her for the first time. Another described her complex role as an advocate for her infant, a "kind of monitor" whose most important work was to "just try to be here for, be here, and you know, just love her and just try to bond with her." Mothers described love for their infants preceding the development of deep bonds of attachment. "Knowing" the infant was key in the development of deep bonds, learning to recognize the infant's specific behaviors, cries and responses through close contact over time. Mothers

were required to occupy a liminal position for a sustained time until their infants' health improved and behavioral cues could be recognized.

Use of the phrase "becoming a mother" revealed the primacy of the work for first-time mothers who had no prior maternal identity. Specifically, they needed to recognize that they were now, unambiguously, "a mother," then the mother of this specific infant. A first-time mother described a tearful epiphany in the NICU: "One day I started crying, I said, 'Well, now I'm a mom!'" Experienced mothers, on the other hand, already had a maternal identity.

An important turning point for all mothers was taking the infant home for the first time. Home was closely tied to becoming the mother of this particular infant. Taking the infant home decreased the liminal quality of early mothering: they now had more control of the infants' care and more time and a place to know their infants more intimately. Going home meant abiding links could be forged among the mother, infant, and their larger social world; mothers could finally establish deeper relational bonds with their infants without interruption of hospital routines. A first-time mother of a hospitalized infant found that Mother's Day was especially painful: "… it was kinda tough…I told my mama one time — I — it didn't feel like I was really a mother yet, because I haven't had him home. I haven't had him to myself…." Another said, "I want to spend time with her and get to know her, and I want her to feel like my baby."

Once home, a common goal for all mothers was limiting infants' exposure to potential sources of infection, recognizing their extreme vulnerability and likelihood of rehospitalization. Thus they imposed severe constraints on their social network by placing unambiguous, nonnegotiable limits on contact with the infant. Despite mothers' excitement in taking the infant home, they understood that their experience was different from that of parents of healthy infants, whose homecomings are marked by celebrations and visits from friends. These mothers found their social network temporarily limited to close family members although more casual social ties were suspended. Those behaviors and decisions related to the now-at-home infant also had important elements of agency, as mothers' posture vis-à-vis their infants was one of intense protectiveness.

Sometimes mothers needed to overcome an overly optimistic view of what "being home" entailed. Constant vigilance, exhaustion and lack of routine were common at first. Many mothers met the challenges of home with relief that signified the resolution of conflicts with the NICU nurses whose control of the infant became increasingly problematic as mothers became more comfortable and competent in managing their infants' technology and basic care. At home, mothers' management of their infants' care increased their intimate knowledge of the infant and enhanced the establishment of deep emotional attachments.

Extended family, especially other women, played vital roles in supporting the mothers through the disrupted pregnancy, early delivery and infant illness. Grandmothers or their surrogates, such as aunts, were allies in resolving the mothers' disappointment with their pregnancy outcomes. Second only to supportive husbands or partners, female family members provided material support, including care for the children at home, fixing meals and caring for the infant when parents returned to work and re-established their social lives. Familial tensions occasionally flared under the stresses of parenting a sick infant. One mother described her own mother as "getting on my nerves the most." Her mother and mother-in-law colluded in "ganging up" on them as she and her husband tried to balance the needs of the hospitalized infant and their 5-year-old at home. For another mother, problems with her father that she believed had been resolved resurfaced.

Less intimate but important social relationships including friends and church family were required to take secondary roles in mothers' lives, particularly during the infant's

hospitalization. Social activities were suspended while the infants required supportive technology and were perceived as vulnerable. All mothers' lives were distilled to simple necessities: adequate food, rest, and social support, and, for experienced mothers, attention to their previous children. Mothers often relied on persons in their wider social network for material support: meals, gas money, transportation and care for older children. Occasionally, special offerings from church helped ease financial strains.

Another important turning point in mothers' re-incorporation of their wider social network was the infants' decreasing technological dependency, usually occurring by 6 months after initial discharge home. By this time, infants typically had decreased or no supplemental oxygen requirement and were tolerating feeding either tube or bottle feedings, although some had more substantial needs. Also, mothers were confident experts in management of technology by this time. Perceiving their infant as less vulnerable, mothers cautiously restored activities with friends and resumed attending church. Liminality and ambiguity were replaced by confidence in their mothering and incorporation of the infant into a sustained social network of family and friends.

Discussion

Life course theory provided a useful means of elucidating women's experiences of becoming a mother of a medically fragile preterm infant. This theoretical perspective allowed for examination of the social context of maternal development. Mothers first narrowed and then widened their social worlds over time in order to link the lives of their new infant with their families and other significant persons. Narrowing meant that important persons in mothers' social spheres were temporarily excluded from early interactions with the mother after the infant's birth and homecoming. These spheres widened later when mothers perceived their infants as less vulnerable and their confidence increased in their ability to manage infant care.

Increased confidence combined with effective agency on behalf of their infants strengthened women's identification of themselves as mother of this child. Liminality and ambiguity decreased as infants' health improved, their technology dependence decreased, and they came home from the hospital. At home, mothers claimed their role as primary protector and care provider without the constraints that the NICU imposed.

Maternal role and identity were key issues in navigating the difficulties of mothering in a confusing technological context and a narrowed social sphere. First-time mothers faced the challenge of mothering without previous experience through which they felt competent. They worked at feeling like *a* mother first, and then *the* mother of this specific child. Experienced mothers were more confident in their maternal role and caretaking skills but still needed to accommodate this infant into the existing family structure and social world.

Mothers employed two distinct measures to reduce liminality associated with their transition to motherhood of this child. First, they exhibited a high degree of protectiveness. Heightened protectiveness may be related to an increased sense of vulnerability and specialness of the child, and may linger into the preschool years (Miles & Holditch-Davis, 1997). Second, mothers were purposeful in creating lasting attachments with their infants and to ensure the infant's place within the family and social network over time. Flacking, Ewald, and Starrin (2007) suggested that the formation of "loving bonds" and securing the infant's survival are both foundational for mothering a premature infant. The birth of a preterm infant results in a series of stressful adaptations for mothers that exceed those of mothers of fullterm infants (Bakewell-Sachs & Gennaro, 2004; Holditch-Davis & Miles, 2000; Holditch-Davis, Miles, & Belyea, 2000).

In our analysis using life course theory, the transition into motherhood varied between first-time mothers and women with mothering experience, a phenomenon reported by Rubin (1967) in early work on maternal role attainment. More recently, Mercer (2004) challenged the concept of maternal role attainment, suggesting that the process of becoming a mother begins before or during pregnancy and ends when the woman has achieved the maternal identity, around 4 months postpartum. For women with no previous mothering experience, the birth of a preterm infant impels them into the parenting trajectory prematurely, marking a particularly ambiguous transition where maternal identity is as yet unclaimed. Barclay, Everitt, Rogan, Schmied, and Wyllie (1997) found that the baby's nature and social support are key in a woman's becoming a first-time mother. The nature of medically fragile infants is typified by uncertainty and frequent health setbacks, complicating but not precluding becoming a mother. Because the psychoemotional tasks of pregnancy are interrupted in preterm delivery, these new mothers faced parenting with what Rogers (1957) calls an "as if" quality: not fully identified as mothers, they were expected to interact with and make decisions on behalf of their infants as if the transition into motherhood is complete.

Although commonalities existed among mothers of medically fragile preterm infants, idiosyncratic events and responses shaped how each woman comes to identify herself as mother of this infant. This is similar to the finding of Miles and Frauman (1993) in their study of 15 medically fragile preterm and fullterm infants. They found that although similarities exist across mothers and families in attainment of the parenting role and identity, especially in terms of claiming control of their infants' care, experiences varied widely even within basic patterns of role attainment. Sevon (2005) described narratives of motherhood as fraught with concerns about "good mothering" and ambivalence related to becoming pregnant. These concerns and ambivalence are imbedded in the experiences of mothers whose pregnancy were complicated by a high-risk condition and preterm delivery. Mothers whose preterm infants become medically fragile encounter additional challenges that both mirror and magnify the concerns of mothers of healthy infants.

"Linked lives" was the goal of mothers of medically fragile preterm infants, forming sustained bonds with their infants despite obstacles. Protecting the vulnerable infant became the means to preserve the opportunity to mother this child fully. Ultimately, the woman moved from a liminal state of socially ambiguous motherhood to full identity of herself as the infant's mother. In overcoming successfully the obstacles that mothering a medically fragile preterm infant posed, women themselves underwent substantial development and maturation. And although most mothers reflected with regret on their pregnancy difficulties and early days of their infants' lives, they later appreciated their own development in response to these experiences.

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Table 1

Demographic Characteristics of 34 Mothers of Preterm, Medically Fragile Infants

	Means (*SD*)	**Range**
Maternal age	31.4 (5.25)	17 - 39
Education (years)	15.2 (1.22)	9 - 18
Infant Birthweight (grams)	1002 (547)	510 - 2600
Gestational age (weeks)	27.7 (2.23)	24 - 34
	Frequencies (%)	
Previous children: None	20 (59)	
≥ 1	14 (41)	
Marital status: Single	11 (32)	
Married	23 (68)	
Ethnicity: African American	11 (32)	
White	19 (56)	
Other	4 (12)	
Infant gender: Female	8 (24)	
Male	26 (76)	