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Internal Working Models of Parenting

Motivations of Parents of Infants With a Congenital Heart Defect

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Drawing on attachment-caregiving theory, we interviewed parents of 24 infants with a complex congenital heart defect (CCHD) about parenting motivations through the first year. Using directed content analysis, 8 categories of motivations, focused either on the baby, the parent-infant relationship, family, self, or tasks were identified at 1, 4 or 6, and 12 months. A matrix of motivations by parent showed family and infant age variations. Motivations illustrated for 5 parents at 1 month suggest that specification of expectations and intentions and clustering of motivations mentioned by a parent would advance study of linkages of parenting internal working models with parenting action. **Key words:** *attachment-caregiving theory*, *complex congenital heart defect*, *directed content analysis*, *infant*, *internal working model of parenting*, *motivation*, *parent*, *parenting*

FROM a nursing perspective, parenting is critical to the well-being and clinical outcomes of infants.[1] Although nurse researchers and clinicians access a broad literature of theoretical frameworks and assessment instruments to describe parent-infant relationships and interaction,[2] relatively little research literature on the mental models that organize and guide parents' thoughts, feelings, and actions is available. Motivation and emotion as well as expectations and intentions are integral components of the mental models that attachment and caregiving theory refer to as internal working models.[3-5] Knowledge of a parent's internal working model of parenting is fundamental to understanding a parent's goals, judgment, perception of reality, interpretation of information, and evaluation of action and the response of others to it.[6] Consequently, the internal working model that guides parenting activity, both momentary and longer term, is a point of departure for sensitively supporting problem solving and providing anticipatory guidance. The purpose of this article is to present concepts for a theoretical model applicable to both assessment and intervention aspects of

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parenting support. The concepts we specified for the theoretical model were drawn from the literature and elaborated through research designed from a nursing perspective. These beginning, descriptive steps of development of a theoretical model originated from our interest in parenting infants and young children, either healthy or with special health needs such as chronic lung disease or a complex congenital heart defect (CCHD). After presentation of the concepts, cases will be presented to illustrate application of the framework. These cases were prepared from parents' description of what they were working on as parents on 3 occasions through the first year of life of an infant with a CCHD.

THEORETICAL MODEL

A basic assumption of the theoretical model we are developing is that its purpose is to aid nurses in supporting parents in accomplishing universal parenting functions, including those defined by Ruddick[7] as nurturing growth and development, preserving life, and shaping the child's behavior to be acceptable to the social group. To accomplish this support, nurses intervene with anticipatory guidance, problem-solving assistance, coaching, and guided participation. Nursing practice, however, may lack means of comprehensively and coherently assessing and responding to parenting activities. Parent activities, which encompass momentary responses to a child as well as ongoing work or projects that endure over time, may include agendas related to the self or family as well as to the infant. The extent to which nurses discern the agendas or motivations of parenting activities and articulate them with the parenting functions they aim to support may make the difference between effective and ineffective nursing practice.

Attachment-caregiving theory[3,4] is the underpinning of the theoretical framework we are developing for research and clinical practice in relation to parenting. We are drawing on 3 concepts from this theory to elaborate a theoretical model of articulated parenting thought, emotion, and action: (a) the behavioral system of caregiving; (b) the internal working model; and (c) motivation. Caregiving as a behavioral system is reciprocal to the attachment behavioral system of a person seeking proximity, security, or care.[8] As conceptualized by Hinde,[9] a behavioral system is biologically based and instigated or elicited by motivation that is specific to a proximal goal. The goal determines and regulates goal-corrected behavior. A proximal goal refers to an end state or desired condition in mind or view. As depicted by Bretherton,[10] a behavioral system is composed of sensory, monitoring, goal setting, and effector subsystems regulated by the expectations and intentions of the internal working model.

The behavioral system of caregiving

Caregiving, from the attachment-caregiving theoretical perspective, refers to an emotionally regulated parenting function or activity that endures through time and has protection, provision of security, sustainment, relief, comfort, renewal, or well being as proximal goals. As a parenting activity, caregiving is a behavioral system that involves the parent, the infant, and perhaps others who participate in the infant's care in activities such as feeding, settling for sleep, or comforting.[5,11] Caregiving is purported to undergo its greatest development during pregnancy, birth, and the months following.[5] George and Solomon[5] claimed that a mother's perception of her infant and their relationship are more influential than any single quality of the infant, including temperament characteristics, in the development of the caregiving behavior system. We use "parenting" to indicate caregiving functions that are specific to those provided by parents and, in addition, the scope of functions that may be encompassed in parenting activities.

The internal working model of parenting or caregiving

The concept of an internal working model (IWM) was adapted and developed

by Bowlby[3] from biologically-based control system theory specifically to explain the operation and development of attachment behavior of a young child and the caregiver's or parent's caregiving response. George and Solomon[5,12] developed the IWM concept for application to caregiving of mothers. An IWM is an emotionally-based mental model that operates on the reality of infant, self, and others; and parenting functions, tasks, or conditions the parent is experiencing. This operation is a dynamic process of orienting, organizing, guiding, and correcting parenting activity in respect to the proximal parenting goal. An IWM of parenting, operative for a specific parenting subsystem (ie a specific parenting activity, such as feeding), is revealed in parents' descriptions of expectations and intentions relevant to the activity and proximal goal. An IWM for a specific subsystem of behavior operates when motivation for the activity is activated by internal and/or environmental cues and terminates when the cues are no longer active.[3,13] Among these cues is a parent's perception of the infant's health, well-being, and vulnerability as well as emotion associated with challenge or threat. The proximal goal of an operative IWM is specified by criteria of successful or unsuccessful action or of achievement of an adaptive state–a "set goal" in Bowlby's cybernetic language. These criteria, linked to expectations and intentions, guide and correct or redirect parental thought and action. In this article, we use "goal" in the sense that Bowlby used "set goal."[3]

The IWM concept is sometimes used interchangeably with the concept of "mental representation." As described by George and Solomon,[5] the caregiving representation is a parent's depiction or description (mentalization) of the parent-child relationship. Associated with emotion that varies in quality and intensity, the caregiving representation guides behaviors organized for caregiving functions (providing protection, comfort, and care for a child), and, as a psychological mechanism, is used interchangeably with the language of an IWM of parenting. As a concept, however, a mental representation is not dynamically constructed and operative. An IWM, in contrast, has process as well as structure. The process includes feedback of information, correction of thought and action, and goal clarification and redefinition.

As an infant develops, the parent's interests and responsibilities are revised, conditions change, and the IWM of parenting must be reconstructed to fit the new reality. The extent, timing, and character of revision depend on conditions and demands, available information and social input, and the parent's perception of and openness to new information.[4,14] George and Solomon[5] claimed that flexibility in updating the IWM enables sensitive and responsive behavior with a child. These investigators documented variation among and within mothers in caregiving IWMs across the infant's first year.[15]

Several studies have applied the IWM concept to parenting subsystems and proximal goals other than protection in the context of the infant's security seeking. Pridham et al.[16,17] interviewed mothers of healthy infants born at term and prematurely born infants, some with chronic lung disease, to learn about their IWMs of infant feeding as they watched video clips of a just completed feeding at 1, 4, 8, and 12 months, infant postterm age. Eight 6-point ordinal categories were identified from interview data for rating dimensions of the mother's IWM of feeding on degree of adaptiveness or attunement. Dimensions rated included, among others, the focus or orientation of the feeding, acknowledgement of and response to infant agendas, stimuli or cues used for decision making, and criteria for structuring the feeding and for evaluating intake. Adaptiveness ratings were highest at 4 months and lowest at 8 months.[16] As the attunement of mothers' feeding IWMs increased, the positive affect and behavior of mothers during feeding increased.[17] These studies indicated that an IWM for a parenting subsystem, feeding, may be examined for its contingent, sensitive, responsive, and flexible qualities.[18]

Motivation as the activation of a behavioral system

Motivation is integral to understand the operation of an IWM. The motivation that activates an IWM instigates or stimulates action and maintains a project. Heard and Lake[19] viewed Bowlby's[3] concept of a behavioral system as a way of conceptualizing motivation. The activation of a behavioral system is a sign or expression of motivation to reach the goal of the system. Motivation has had relatively little discussion in the attachment-caregiving literature: what it is, how it operates, and how it is influenced by self-reflection or clinical intervention. Bell and Richard[20] asserted that what motivates caregiving, beyond or instead of self-interest, has been a point of controversy, and claimed that caregiving is motivated by an enduring emotion of caring that maintains connection with the child through monitoring. However, lacking parent-specific knowledge of motivation, including what it concerns in respect to the behavioral subsystems and proximal goals it activates and how these aspects of motivation vary among parents and within parents across time, IWMs and behavioral systems of parenting cannot be assessed, interpreted, or guided with intervention specific to a parent-child dyad. Although Bell and Richard's concept of caregiving motivation may be useful for understanding parenting at a broad, undifferentiated level, it offers little for understanding the motivation of the subsystems of parenting behavior that parents engage in regularly.[21]

Another issue that complicates the study of motivation as a concept integral to the IWM and behavioral systems of parenting is that, when left unspecified, motivation may be confused with the goal or desired end or proximal state of affairs. We have heard parents reveal motivation concerning proximal goals in statements about why something is wanted or expressed as a specific kind of desire or want (eg, feeling closer to the baby, assuring a specific amount of intake for the baby). The motivation is associated with the specific activity that is engaged in rather than a particular end state.

Parents have described or explained what they are trying to accomplish, desire, or want to happen in light of what, for them, was troubling, perplexing, or challenging. In narrative accounts of their activities and actions, parents have told us about their expectations and intentions concerning specific circumstances. In the process, they illuminated the nature (the why), nuances of meaning, emotional quality, and intensity of their motivations. As a case in point, our research has indicated considerable variability among parents in motivations for infant feeding. Some parents expressed a desire to feed the amount that corresponded to the prescribed or parent-determined amount, whereas other parents indicated that pleasure, excitement, or satisfaction in the infant's participation in the feeding was associated with an infant cue-based approach to feeding.[16] These observations suggest that unpacking parenting IWMs to identify the motivation that activates and sustains activity is needed to assess parenting thought and action in a researchable and clinically useful way.

IWMs of parenting and their motivations, referred to here as "parenting motivations," may best be explored through the narrative accounts of parents who are confronted with many parenting challenges. For parents of infants with special health care needs, day-to-day care, protection, and support of growth and development are complicated by health issues, personal and family changes, and threat of loss or harm to the child. A CCHD requires reparative or palliative surgery immediately or soon after birth to sustain life.[22,23] Parents of infants with a CCHD are often faced with several infant surgical procedures in the first year in addition to repeated diagnostic procedures; the monitoring of nutrient and fluid intake, oxygenation, and weight gain following surgery; and measures to prevent acute illness.

Study of parenting motivations

Although the stressors that parents experience and the crises they confront beyond those ordinarily encountered by parents have been well documented,[24,25,26] little is known about parenting motivations and the proximal goals they imply. Because of the pivotal function of motivation in instigating, sustaining, and terminating behavioral systems in conjunction with the regulatory operation of IWMs,[10,13] we designed a qualitative study to learn about parenting motivations for parents of an infant with a CCHD across the infant's first year. Our purpose was to build a foundation for learning about IWMs of parenting that would advance understanding of the complexity of parenting, provide conceptual tools to aid explanation of the variability among and within parents across time and across functions or activities, and lay the groundwork for more effective guidance of parents for usual events, problems at hand, and challenges anticipated in the future.

METHODS

Research design

This qualitative, longitudinal study was designed to describe the motivations of IWMs for parenting in general for a small sample of parents of an infant with a CCHD through the infant's first year. Interviews were done in the home on 3 or 4 occasions during this year. To increase the sample size, data from a pilot study were combined with data from the fully implemented study. All data were obtained from the same population of families. The 2 studies varied only in the number of data collection visits each family received. For the 10 pilot families, data were collected at 1 to 2 months of infant age, depending on the age of the infant when discharged from the hospital, and at 4, 8, and 12 months. For the families who participated in the full study, data were collected at 1 to 2, 6, and 12 months. For the study reported here, data collected at 4 months from the 10 pilot families were grouped with data collected at 6 months from 15 families in the full study. We assumed developmental similarity between 4 and 6 months in respect to limited spoon- or self-feeding during this period of the first half year. The 7 cases of 8-month data collected from families who participated in the pilot study were not included in this study. The study was approved by the human subjects institutional review boards of the hospital from which families were recruited and from the participating academic institutions.

Participating families

Participants were the parents of an infant with a pre- or postnatally diagnosed CCHD requiring reparative or palliative surgery. This type of heart condition includes tetralogy of Fallot, atrial-ventricular canal, a sizable ventricular septal defect, pulmonary stenosis, tricuspid atresia, and hypoplastic left heart syndrome. Participating parents had to be 18 years old or older and English speaking and reading. All families were recruited from the heart center of a midwestern metropolitan children's hospital. Both parents were invited to participate in the interviews. When both parents were present, interview questions were first directed to the primary caregiving parent, who most often was the infant's mother. The parent who was the primary caregiver was observed in video-taped feeding interaction with the infant and completed all self-administered instruments.

Data collection instruments and measures

Instruments used in this study included a demographic self-report form to learn about parent and family characteristics and attributes, including age, marital status, education, race, and occupation of each parent as well as number of children in the family and family income category. A semi-structured interview was used to broadly learn about parental experience in caring for an infant with a CCHD and the IWM of parenting in operation, and to specifically identify the

motivations that oriented and directed this IWM. A video-assisted semi-structured interview was used with playback of selected sections of a feeding observed during the data collection visit to learn specifically about the IWM of parenting operative during feeding. In both interviews, an open-ended question began exploration of a topic, followed by probing questions or questions to explore a targeted area within the topic.

The interview to learn about the parenting internal working model was developed in a pilot study with 3 families. At approximately 1 month after the infant's birth, the first of several (3 or 4) interviews with parents began with the parent's experience of the pregnancy, birthing, and the processing of the CCHD diagnosis. At the first as well as subsequent interviews, the following parenting activities were explored: (a) giving care to the infant, including feeding, surgical wound care, and medication administration and managing substitute care if needed; (b) monitoring the infant's health, managing the infant's clinical (medical and surgical) care, and participating in prescribed therapies (eg, physical therapy) or developmental program; (c) relating to others in providing care, ie, the partner, other family members, clinicians, therapists, and social workers; and (d) managing the infant's care in respect to the family as a whole, including siblings. The $1\frac{1}{2}$ hours (parenting) interview was structured to begin each parenting activity with an open-ended question and to follow it with a question targeted to learn about components of parenting IWMs, including, motivations, emotion the parent was feeling, and the expectations, intentions, and goals the parent had in mind. The open-endedness of the interview made it possible to learn about as yet undefined IWM components if parents' narratives should reveal them. One of these components was the meaning of an experience or event for parenting, for self as parent, or for the infant. Motivation for parenting in general and for feeding in particular was a previously undefined component of an IWM that became apparent to us in the process of coding the narratives.

The video-assisted (feeding) interview was designed to stimulate the parent's recall and description of what was happening during the just-completed feeding, what the parent was expecting and intending; what the feeding events meant, from the parent's perspective, for the parent, infant, or feeding itself; and the emotion (parent and infant) experienced with these events. We also learned about the parent's satisfaction with the feeding and what the parent would like to change or remain the same. This interview took approximately 30 to 45 minutes, depending on the feeding issues involved and the parent's elaboration of them.

The parent's responses to both the parenting and feeding interviews were transcribed for analysis with directed content analysis, an approach guided by key concepts or variables from existing theory.[27] Transcriptions were checked with the audio tape whenever accuracy or completeness was in question. The content analysis was guided by our concept of IWM with a goal of identifying and categorizing all instances of parenting motivations. The narrative texts from interviews with 3 parents of infants with a CCHD in a pilot test of the interview protocol had provided evidence of motivations along with other IWM components: goals; expectations and intentions for their infants, themselves, and others; and the task in which they were engaged as parents. In the pilot interviews, parents had also described emotion and occasionally the meaning of events or conditions. We intended to produce, as an outcome of the directed content analysis, a catalog of parenting motivations, including operational definitions and exemplars, and directions for coding.

The overall processes of recording and coding followed Krippendorff's[28] guidelines for content analysis. Coders, all of whom interviewed parents for the study on 12 or more occasions, were trained in group training sessions to read and code transcriptions with a concept of the IWM and its components in mind.

The coding process followed Sandelowski's[29] guidelines for qualitative

analysis and started with 2 or more coders working independently. In this first stage of the analysis, the goal was to get a sense of the transcription as a whole by reading it from beginning to end without coding it. The next step was to read the transcription to identify the major stories or projects identified within and across the topics of the interview. These stories or projects could be expected to be accompanied by an expression of motivation relevant to parenting, which may have been stated directly as a goal or as a description of what the parent was working on, desired, wanted to happen, or was trying to avoid. Statements were often embedded in the parent's accounts of events or projects or made in direct response to the interviewer's questions (eg, "What were you wanting to accomplish?" or "What is important about this to you?"). Each indication of a motivation, whether or not mentioned earlier in the transcription, was noted in the transcription margin and the parent's words that expressed it were highlighted. The second stage of the analysis was to assemble in an abstract all of the statements indicating motivation, along with the transcription line numbers of their occurrence. Motivation statements were organized by similarity in focus and proximal goal. Aspects of the parent's IWM of parenting that were a part of the story or project in which the motivation was operative (eg, expectations and intentions that provided evidence of a motivation or that clarified and qualified its focus, meaning, or character) were included with the statement of motivation. The third stage of the analysis was to label each motivation with a category that had previously been identified and that was already included in the coding manual. If motivation text could not be labeled with preexisting designations or categories, a tentative or new label was given. At this stage, labels indicated the subject matter or thrust of the motivation (eg, protecting the infant's health, promoting the infant's skills, supporting family togetherness, or facilitating personal goals) and, although abstractions, were near to the parents' own use of words.

The fourth stage of the analysis for each transcription was review of the list of labeled motivation text with at least 1 other coder, each of whom had coded the transcription and produced an independently labeled list of motivation statements. The research team then read the transcription carefully while checking for evidence in the transcription of motivation statements on the 2 independently created lists. The aim of this stage was production of an exhaustive list of mutually exclusive motivations for each transcription identified at least once in the transcription and with an agreed upon category designation. Descriptive validity (ie, the factual accuracy of the account of motivations) as well as interpretive validity (ie, the closeness of the chosen label to the experience as expressed by the parent providing the account) were examined in this stage of analysis.[30] The fifth and final stage was to check any questionable or new motivation category with categories already included in the manual to determine how to handle the labeling and the revision of the manual. This stage also contributed to descriptive validity.

RESULTS

Of the 26 families recruited to the study, 25 provided data at the 1-month data collection, and 23 families provided data at 4 to 6 and at 12 months. Three families did not complete the study because of death of their infants, 1 prior to the 1-month data collection and 2 others following the first data collection. Mothers ranged in age from 21 to 41 years (M age = 31.8, $SD = 5.17$); education ranged from 11 to 18 years ($M = 15.0$, $SD = 1.9$). Fathers ranged in age from 23 to 52 years ($M = 33.5$, $SD = 6.3$); education ranged from 12 to 20 years ($M = 14.2$, $SD = 2.6$). In 18 of the 23 families, parents were married; 3 were partnered and living together, and 2 were single. In 16 of the families, parents were Caucasian; 3 were Latino, and 1 each were African American or Asian. At the first data collection visit when the infant was between 1 and 2 months of age,

only 3 of the mothers had any employment outside the home. This number increased to 5 by the 4 or 6-month interview and to 7 at 12 months. All but 3 primary caregivers for 1 or more of the 3 interviews were mothers. In 1 family, the father was the sole participant in all aspects of the study throughout the 1-year study. In all 3 of the families that included father as a primary caregiver and interview participant on 1 or more occasion, the mother was employed. Family income category ranged from $10,000 to 14,999 (1 family) to $70,000 to 89,999 (8 families); 6 families indicated their income fell between $25,000 to 39,999, and 7 families were in the $40,000 to 69,999 category. One family did not report income.

For 7 of the 23 families, the infant with CCHD was the first baby. For the other 16 families, the number of children living in the home, some from a previous marriage, ranged from 2 to 8; 8 of these families had 2 children, the modal number of children. Fifteen of the 23 infants were male. Eleven infants had received a prenatal diagnosis of a CCHD. Four infants had been born at less than 37 weeks gestation. A cardiologist's rating of the severity of illness, based on the infant's initial echocardiogram, ranged between 4 and 6.5 on a 10-point scale, with 4 points given for marked disorder and requirement of major high-risk surgery, 5 points given for severe disorder requiring complex palliation or transplant, and additional half points added to these base lines for prematurity, chromosomal or extra-cardiac anomalies, and cardiac dysfunctions. Infants ranged between 21 and 87 days of age ($M = 53.3$, $SD = 17.5$) at the time of the first interview, depending on the infant's surgical treatment and hospitalization and the readiness and availability of the parents to be interviewed.

The categories of parenting motivation identified in the directed content analysis are shown in Figure 1. To compare findings across families at any 1 time and within family across the first year, motivation categories were entered into a category-by-family matrix for each of the 3 narrative analyses done for each family. This matrix, formulated with Miles and Huberman's[31] approach, assisted in checking the completeness and accuracy of coding among coders as well as visually assessing variance in the number and categories of motivations identified among parents and within parents from time to time of IWM assessment.

Parents expressed motivations for parenting in response to all topical sections of the interview. Eight categories of motivations were identified encompassing motivations for feeding in particular as well as for parenting in general. The feeding motivations were expressed with nuances specific to feeding and are not reported in this article.

The 8 categories of motivations for parenting could be clustered by the focus or subject of the implicitly or explicitly expressed proximal goal. Four foci were apparent: (a) the infant, including relationship of infant and parent; (b) the family; (c) the parent him/herself; and (d) parenting tasks or responsibilities. Grouped by their focus, the motivation categories are shown in Figure 2, a matrix of the motivations expressed by each of the primary caregiving parents contributing narrative responses to the interview.

Only a few of the 25 parents from whom we had interview data at 1 month did not describe a motivation for either promoting or facilitating the baby physically, developmentally, or emotionally or guarding or protecting the baby's well-being. Over half of the parents ($n = 13$) described as a motivation 1 or more of the following categories having to do with self: (a) protecting self; (b) promoting or facilitating ones' own agendas; and (c) developing or maintaining a parenting identity. Protecting self included parents' comments about getting through a difficult, challenging, or disorganizing experience; coming safely through an event that involved self as a parent; or having patience and learning to live with frustration and deprivation.

All of the 8 motivations were identified by 1 or more parents at all 3 of the data collection points. The pattern of motivations, shown in Figure 2, differed across time for most of the 23 parents. No parent had the same

The Baby
- *Supporting: promoting or facilitating the baby developmentally* (physically, cognitively, socially, or emotionally); giving care that is responsive to the baby's needs; promoting the baby's health
- *Protecting: guarding the baby's wellbeing or health* (being vigilant, monitoring the baby for signs of physiologic instability, keeping the baby from becoming acutely ill, protecting the baby's survival)

Relating to the Baby
- *Relating: interacting or being with the baby* (getting to know the baby, establishing or maintaining a relationship with the baby, communicating with the baby)

The Family

Building: strengthening the family (developing the family's life style, maintaining family values or traditions, sustaining or strengthening the integrity of the family, shoring up relationships within the family, or protecting family members other than the infant)

The Parent, Her or Himself
- *Guarding: protecting self* (from loss, harm, or inability to manage the situation; fear, worry, or anxiety; demands; or blame, shame, or guilt; needing to regroup, rest, or get away; getting through the experience or situation)
- *Promoting or facilitating self* (regaining the life lived before the baby's birth; doing the things one wants to do or prefers or needs to do; having time for oneself)
- *Forming: promoting a parenting identity* (working on things that parenting requires for being the kind of parent desired by self or expected by others; trying to do a good job as a parent)

Parenting Tasks or Responsibilities
- *Doing: doing the needed* (getting a job done; managing the baby's feedings; establishing a routine that helps to get the job done)

Figure 1. Parenting motivations organized by focus: infant, family, parent, and tasks or responsibilities.

motivations across time. Several motivations were more prominent in the parents' narratives than others. All parents expressed motivation for supporting the baby on at least 1 occasion, either in the form of taking care of the baby or in the form of promoting growth or development. Some parents expressed a baby-supportive motivation on all 3 occasions during the first year. The same was true for motivation for protecting the baby (ie, guarding the baby's health). This motivation was expressed by almost all parents at the third assessment, 12 months after birth. Relating to the baby was not expressed on any occasion by 2 parents, but was revealed as a motivation by many parents as long as 12 months postbirth. Building up or strengthening the family was a motivation for all but 1 of the parents, but was expressed more often at 4 or 6 months than at 1 month. The same was true for guarding or protecting one's own well-being as a parent. Some parents who expressed this motivation concerning self also expressed motivation for promoting self-agendas. Forming an identity as a parent continued across the first year for some parents, whereas, for others, it was not apparent until the second or third interview. Nine parents had a task-oriented motivation at both 4 to 6 and 12 months, indicating some stability in this motivation over time.

Although the matrix of motivation categories expressed by each parent is useful for an overall assessment of parental projects as individuals or a population of parents, more information is needed about the substance of the motivation for valid classification and typing of a parent's internal working model of parenting. The motivations expressed within

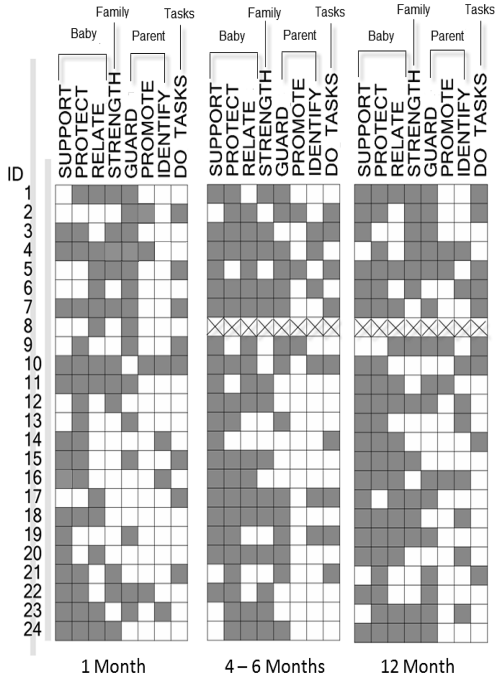

Figure 2. Parenting motivations by family for 3 assessments (1, 4 or 6, and 12 months). Shaded boxes indicate presence of motivation. Cross-hatched boxes indicate missing data.

any 1 category varied widely in specific content or topic, emotional quality, meaning as well as in goals, expectations for infant and self, and intentions. Each of the 8 motivation categories is illustrated in Figure 3 with 1-month narrative data for 5 parents, all mothers. For each mother, the motivation categories that are illustrated are presented in the context of all of the categories identified in the mother's transcribed narrative. The motivation is presented in words close to the mother's expression of it, followed by the category label, shown in parentheses, with which it was coded. Expectations concerning infant and self as well as intentions are enclosed in quotation marks.

DISCUSSION

Our aim of developing a theoretical model for coherently assessing parental thought, emotion, and action as a basis for intervention was advanced in this study by focusing on motivation, a pivotal component of the internal working model operative in the parenting behavior system. We learned that, during the first year, parents who had an infant with a CCHD described motivations concerned with functions of parenting an infant—nurturing growth and development and preserving the child's life—as well as with motivations concerning the parent-infant relationship, family building, self, or task-accomplishment. Infants in this study, from a parent's perspective, may have been yet too young, even at 12 months, for parents to specify motivation to shape infant behavior in ways acceptable to the social group as defined by Ruddick.[7] Still, 1 mother talked about ways she was helping her baby to grow more independent of her. Another mother talked about how her baby had to learn to be patient because her siblings needed her attention, too. These expressions of motivation were coded as promoting the infant's development.

Although the content of a motivational expression was highly specific to a parent's personal and family circumstances, it could be reliably categorized in 1 of the 8 categories of parenting motivations, identified through analysis of the parents' narrative data. These categories encompassed a spectrum of IWM foci, including the infant, family, self, and tasks or responsibilities. Although the categories, in themselves, are not informative about the specific substance of the motivation or the quality of its emotional tone, they aided us in determining the scope of motivations potentially activated within a parent's IWM of parenting at any 1 assessment.

Reliable categorization is a function of descriptive validity.[30] Descriptive validity was demonstrated by the 2- or 3-person team of coders who identified motivations in the transcribed interviews and subsequently categorized them. We agreed that some expressions of motivation, including attempting to resolve uncertainty or ambiguity, may be misplaced in the category of protecting self. Resolving uncertainty may have multiple goals, perhaps not clearly formulated when expressed, but

1. [#23] The baby had a neurological event not long after cardiac surgery, which led to questions about her developmental capacities.
- (Supporting: promoting or facilitating the baby developmentally) "Making up for lost time by supporting baby in social, emotional and physical development; making sure baby has all those experiences a little girl should have. . .The way baby interacts with people, she seems like she's a happy kid, full of life and raring to go. It's exciting. . .We decided to stay positive, learn as much as we could, and be very proactive. They [developmental therapists] will find out what they will need to work on so baby will meet mile stones when she should."
- (Protecting the baby's health) "Protecting baby from acute illness and infectious disease. . .Getting sick would be too stressful on her heart. [Dad] wants to keep baby at home and not let anyone near, but getting exposed and developing immunity is a healthy thing."
- (Relating: interacting with the baby) "Getting a bond with baby through breast feeding. . .So for me, the bonding experience was really cool and I like the fact that it's me and her. I like that it's our time and nobody can take that away from us."
- (Building: strengthening the family) "Getting on with the family life we want to have. . . Enjoying baby and building this family we're starting. I am still trying to find a balance of baby time and husband time."

2. [#4] The parenting motivations for this mother were set in a context of worry about the outcome for an infant with a very severe heart defect expected to require two heart surgeries in addition to the one he had already had. The baby's coming home on supplemental oxygen from the hospital after his first surgery was a sign to the mother that something was fundamentally wrong with him.
- (Supporting: promoting or facilitating the baby developmentally) "Making the baby's quality of life better. . .We try to do things to help the baby's development, even when we play on the floor. We try to speak to him with feeding or say our prayers when we're feeding."
- (Protecting the baby's health) "Keeping the baby from getting sick and monitoring the baby's level of oxygenation. . .We don't want to shelter him, but because of his heart condition, we don't want to bring him around a lot of people." The mother recounted an incident at the doctor's office in which the baby's skin color looked very good, but his oxygen saturation was very low. "So that's kind of scary because that was the one thing that I always said was that I'll obviously know something's wrong when his color changes. It doesn't change."
- (Relating: interacting or being with the baby) "Not wanting to leave baby, even for a couple of hours. . .I just feel bad in leaving him. It's going to be hard to leave him to go back to work. . .Thinking of him having to undergo bypass surgery again is scary, even more this next time than the first time. We got to hold him, we got to love him."
- (Building: strengthening the family) "Growing as a couple and as a family. . .We're going to grow as a family and grow as a couple, so you know that better things are to come; somehow your life goes on. That makes sense."
- (Guarding: protecting self) "Trying to learn what the baby's future and our future as parents will be. . .The unknown is really hard [referring to plan for future heart surgeries.] . . .I want to get to where he's done with all the pain and then we know what to expect."
- (Promoting or facilitating self) "Wanting to be able to plan life. . .We don't know what the full outcome is going to be. It changes what we do, where we go."

3. [#2] The second baby of self-employed parents, both of whom were involved in the baby's care and participated in the interview, was expected to need a second tricuspid valve replacement by 1 year of age or sooner. The imperfect closure of the already replaced valve resulted in low oxygen saturation. The parents recalled that the heart defect had not been identified on prenatal ultrasound.
- (Guarding: protecting self) "Dealing with fear and worry about the baby's longevity and future life. . .We try to stay optimistic instead of being really worried all the time. We are trying not to watch over him or hover over him and be paranoid."

Figure 3. Motivations expressed by 5 mothers, occasionally with their husbands or partners, 1 month after the infant's birth. Numbers refer to the ID on Figure 2. (*Continues*).

- (Promoting or facilitating self) "Wanting to have time away from child care and the house. . . I'd like to take baby with me and his sister to the grocery store and visit some friends who have kids."
- (Doing the needed) "Getting things done within a time schedule dictated by the needs of the baby and his older sister. . .We have to keep up with the baby's feedings, like with the bottles. At night, we get those bottles set up for the whole night and then enough for that morning so that we can at least get through the first feeding."

4. [#15] The baby, who had a very severe, prenatally diagnosed CHD, was between her first and second heart surgeries. Mother believed the baby would be healthier after her second surgery, but worried about her future and the possibility of physical limitations. The baby was the first child for a mother who viewed herself as being very young. She lived with the baby's father, and had a supportive family in the area.

- (Supporting the baby: giving care that facilitates the baby getting what she needs) "Taking care of baby; making sure she gets what she needs, eats what she needs to eat"
- (Protecting: guarding the baby's wellbeing or health) "Needing to protect and monitor the baby closely. . .Make sure she is always in a safe environment. . .Every little thing I always ask like 'What are the signs that she's getting too hot? How can you tell she has a cold?..It's like I'm a doctor now."
- (Relating: interacting or being with the baby) "Making sure she gets all the love she needs. . .The baby is very loving."
- (Forming: promoting a parenting identity) Describing her pregnancy, after the diagnosis of the heart defect: "I went through days where I felt I failed as a mother and then you have a baby. Like, no, you didn't fail as a mother. . .I feel so grown up, so responsible for something. It's a lot of responsibility to take care of her. . .I enjoy having a baby. That's one of my dreams—having a baby and starting a family. It's having someone there that's part of you that makes you want to keep living and keep going and keep going on with your life."

5. [#7] At the time of the interview, the infant had been home approximately 6 weeks following surgery for repair of an interrupted aortic arch and ventral septal defect diagnosed after birth. The infant had been rehospitalized with a cold a week after coming home. Continued difficulties in feeding and breathing had led to consideration of a gastrointestinal feeding tube for a baby who was growing poorly and had, it seemed to the parents, a new medical problem every time he encountered a doctor.

- (Protecting: guarding the baby's wellbeing or health) "Keeping the baby from getting sick. . .If he's sick, then we have to really watch and be with him all the time because I don't know what's going to happen. His immune system is not like it should be. We always have to make sure everything is clean."
- (Relating: interacting or being with the baby) "Providing baby with the loving and attention he needs. . .You have to have a lot of patience and be able to be there all the time, especially in his case. He needs a lot of loving. It's hard to deal with everything because you have to give him more attention because of the stuff he went through."
- (Building: strengthening the family) "Finding family time and trying to communicate with the baby's father about the baby's care. . .Ever since the baby was born, it's like we don't talk any more. We're trying but it's hard because we both get frustrated. And then he's not there to talk to when I need to talk to him."
- (Guarding: protecting self) "Keeping a positive outlook and not worrying. . .If I worry, then I'm just going to get upset and get sick myself, and I got to be strong for baby. I try not to think about what's going to happen. I just go day by day."
- (Doing the needed) "Giving baby the prescribed food and medication on schedule and at a time that fits the baby's and her own sleep pattern. . .About the only thing I am working on getting him to do is to eat more at one feeding and trying to keep the time between feedings no more than 3 hours. He always starts feeding fast and then he'll slow down and hold it in his mouth. I have to help him."

Figure 3. (*Continued*)

primarily experienced as a discomforting feeling. The categorization we reported was ultimately based on what the parent was trying to accomplish as best we could discern it from the parent's narrative. Improvement of the interview protocol, in light of what we have learned from the process of categorizing motivations, will include questions to learn about the direction or goal of motivations.

An issue for interpretive validity is the distinctiveness or nonoverlapping feature of motivations. We stayed close to the parent's own words in the initial phase of specifying motivations so as to maintain the expression as stated by the parent. With the accompanying expression of expectations and intentions, we could generally differentiate 1 category of motivation from another and make a decision we could agree on. Whether or not we have identified an exhaustive list of motivation categories must be determined by study of a larger population of parents who have an infant with a CCHD. Study of parenting motivations with other populations of parents, including parents of healthy infants born at term, prematurely born infants, and infants with special health care needs other than those with CCHD is needed to produce a set of motivation categories that we can be confident are mutually exclusive and exhaustive of the motivations parents have. The device we primarily used to aid interpretive validity and reliable coding was to examine the coding manual as each transcription was coded to determine if a new motivation category was needed or an exemplar of an already existing category needed to be added for fuller definition of a preexisting code.[31]

Our study revealed areas and avenues for development of methods of analysis of motivations and types of internal working models based on motivations and for further analysis and study of internal working models. The identification and specification of motivation categories reported here for 3 interviews during the infant's first year allowed us to begin to define patterns of motivations based on the focus, categories of motivation expressed, the number and range of motivations revealed, and whether or not a motivation category continued across the first year or only part of it. These patterns promise to provide means of characterizing internal working models of parenting in a way that takes into account the set of motivations a parent expresses on any 1 occasion or across time yet makes it possible to create a typology of IWMs of parenting for a population of parents.

We also observed that, through our narrative method and the directed, theory-bound content analysis we used, we could discern an account of a parent's internal working model of a behavioral system or subsystem of parenting that was more or less coherent and comprehensive in a parent's description. Parents' expressed motivation in the context of expectation, intention, or goal of behaving in a certain way in relation to the infant, family, self as parent, or parenting task, all components or foci of an IWM of parenting. A motivation provided a story-line or "plot" for parents' accounts of their experiences, goals, activities, work, or projects. The storyline was elaborated by expectations of the persons or circumstances involved in the operative behavioral system along with the parent's intentions for action and perceptions of action outcomes. The goal that guided or corrected thought and action was often implicitly expressed in what the parent wanted to accomplish or in expectations or intentions. The elaborateness of parents' accounts of motivations, along with expectations and intentions, depended on the parent's articulateness, the interviewer's skill in supporting and eliciting parental description, and the adequacy of the interview protocol.

Identification of aspects of motivation categories that would qualify the content or character of the motivation would aid more definitive description of motivations and help to differentiate parents who express motivation for giving care, furthering development, and promoting growth, currently included in 1 category. In particular, identifying the emotion associated with a motivation would add to the usefulness of motivation

categories to describe internal working models of parenting and parenting behavior systems. Other potentially useful aspects of motivation discernible in a parent's narrative are the parent's sense of competency or efficacy, a positive or negative perspective of outcomes, perception of the infant's vulnerability or robustness, and the accessibility or lack of accessibility of help. The quality of parenting motivations, using criteria of breadth or specificity, complexity or simplicity, and contingency or commitment, are other aspects of motivations that may be worth exploring when parenting issues surface.

Although the motivation categories were developed to be mutually exclusive, they are not independent of each other and may have conjoined influence or operation. In particular, parenting motivations related to the parent him- or herself (eg, protecting self or promoting a parenting identity) may be a function of motivations for promoting the infant's physical care or development, guarding or protecting the infant's health, or making it through the day's work and doing the needed. Motivation concerning protecting or promoting or facilitating self as well as any of the other motivation categories may be a function of the context or circumstances in which a parent lives. Examination of motivations, their links, contexts, and outcomes will be important to develop a theoretical model of parenting thought, emotion, and action for support of parenting.

Another direction for study of parenting motivation is exploration of the evolution of parenting motivations across time in the context of both infant and parental development and the development of the infant's parents as a couple as well as in the context of life circumstances as construed by the parent. How motivations are generated, qualified, maintained, negotiated, or revised within a couple or a family as a whole, with or without the input of family members or clinicians, and in the context of life circumstances may be important for identifying need for intervention and for specifying features of the intervention and its proximal outcomes.

The extent to which conflict or correspondence in parenting motivations exists within a couple or family is also a question for further study. Together, mother and father may express different motivations than when interviewed separately. At 1 month after the infant's birth, both parents often participated in the interview, a condition that may have influenced the parenting motivations the primary caregiver reported.

Although much work on development of the theoretical framework remains, the development promises to be a useful tool for nurse clinicians as well as nurse researchers. At present, for the most part, clinicians must rely on intuition, experience-based conclusions, or unsystematically made observation for assessing a parent's needs for support of parenting. Although standard and routine approaches to clinical practice, including health supervision and promotion, may be adequate for many parents, particularly when an infant is healthy and family conditions are stable and supportive, they may miss the mark for others, particularly parents of children who have special or complex health care needs or who are at high medical or social risk. Parents of children with special health care needs may have multiple and diverse motivations concerning parenting from the perspective of self as parent as well as from the perspective of the infant.

Although eliciting concerns is a clinical vehicle for opening a conversation with parents about what is on their minds, concerns in themselves may not adequately express the foundations or nuances of what a parent is working on. Elicitation of concerns, in particular, is not likely to reveal motivations, emotion, goals, or the expectations and intentions of a parent's IWM. Our research has focused on developing a means of helping parents of infants to describe their IWMs of parenting in accounts or "stories" of their parenting activities. We have begun to identify the constellation of motivations a parent is operating on, within or across time, from narratives of their parenting experiences. Knowing a parent's motivations has aided efficient

but rich assessment of the IWM of parenting, including expectations concerning the infant, self as parent, and parenting tasks as well as intentions for action and fulfilling responsibilities. This study suggests that categories of motivation may be identified, refined, and developed through specifying aspects of motivation, including expectations for outcomes and intentions for action. The motivation categories that are operative in a parent's internal working model of parenting may cluster in characteristic ways, providing a basis for typing the internal working model. Empirically-based theoretical study of motivations for parenting supports examination of the links of parenting internal working models with parental action. Knowledge of these links is needed to understand paths to clinically important outcomes and to identify points of needed problem solving and anticipatory, preventive intervention.

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