Theories of maternal attachment

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THEORIES OF MATERNAL ATTACHMENT

"MATERNAL ATTACHMENT" has become synonymous in nursing literature with the theory of "bonding" as proposed by Klaus and Kennell.[1] Changes in the delivery of maternity care have been implemented based on this theory. However, Klaus and Kennell's theory of bonding needs to be critically examined for fallacious assumptions and invalid conclusions. Such a critical examination has not been done thus far.

THE THEORY OF BONDING

Klaus and Kennell's[1] theory of bonding hypothesizes that there is a brief, sensitive period for humans soon after birth during which bonding between the mother and infant occurs. The exact timing and duration of this period are not specified. Contact and interaction between mother and infant during this time are necessary

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for bonding to occur. Once this time for bonding has passed, the opportunity for attachment is lost forever.[2] The bond that is formed during this critical time period is permanent, and the success or failure of this process has long-lasting consequences for the parenting ability of the mother.

The concept of bonding has its origins in imprinting theory, which hypothesizes that early, crucial events will have long-lasting effects on the organism. The original experimental work done to test this theory was done on birds by Lorenz and is cited in Moltz.[3]

The idea that early events occurring at specific critical times could affect later behavior was adopted by animal behaviorists investigating maternal behavior of mammals after the birth of their young. They used this idea to explore the effects of separating and reuniting the mother and her offspring on subsequent maternal behavior.

Klaus and Kennell[1] cited some of this research and made two implicit assumptions: (1) Human maternal behavior is analogous to lower mammalian maternal behavior, and (2) since humans are like other mammals, they therefore have species-specific critical times to bond with their young. If this critical time to bond is denied, malfunctional maternal behavior to the young results. The outcomes of bonding failure according to Klaus and Kennell are disturbed mother-child relations, vulnerable child syndrome, developmental and emotional problems of high-risk infants, failure to thrive, and battered child syndrome. These consequences were based on their retrospective observation that these outcomes were more prevalent among premature infants than for those born at term. They then deduced that since there is less initial maternal contact with premature infants than with full-term infants, this decreased contact at a "critical" time was the *crucial difference* between the premature infants and the term infants that led to the parenting disorders. This is a case of retrospectively attributing causality to one factor in a multifactorial situation.

Klaus and Kennell[1] used animal research and the retrospective observations of parenting behaviors of premature infants as the theoretical background for their experimental studies of bonding in humans. One study[4] was done in an American hospital using 28 primiparous women as subjects. The mothers in the experimental group (N = 14) were given their nude babies to hold within three hours after delivery and were allowed 16 more hours additional contact than the control group (N = 14) over the next three days. Maternal attachment to the infant was measured one month later by observing maternal behavior during feedings and physical examination of the infant. Longitudinal follow-up of maternal behavior was also done using the same sample at one year after delivery[5] and at two years, with five mothers selected at random from each group.[6] The experimental group that had extended contact consistently showed more maternal behavior as operationally defined. However, such results are questionable given the initial small sample size and the decision of the researchers to later exclude some members of the initial sample from their longitudinal studies.

Klaus and Kennell[1] also studied a group

of 40 women in Guatemala with a similar experimental protocol and used infant weight gain, incidence of infant infection, and continuity of breast-feeding at six months as operational measures of maternal attachment. The results showed a significantly greater weight gain and continuity of breast-feeding in the experimental (extended contact) group. However, neither the rationale for the choice of operational measures nor for why the researchers had decided to change operational measures of maternal attachment from previous studies was given.

Experimental research of other investigators cited by Klaus and Kennell[1] in support of their theory also suffers from the problems of either small sample size or of measuring maternal attachment in the immediate postpartum period, thereby confirming that mothers who have more initial contact with their infants are more at ease in interacting with them.

In addition to the "critical period" of bonding necessary for maternal attachment, Klaus and Kennell acknowledge that there are predelivery influences on the ability of the mother to bond with her infant. They call these influences "fixed" because they are "givens" by the time of delivery and therefore unalterable by the hospital staff. The influences are the mother's care by her own mother, the genetic potential of the woman, the cultural practices of childbearing, the woman's relations with her husband and family, her experiences with previous pregnancies, and the course of events during the current pregnancy. However, Klaus and Kennell do not develop the exact ways in which these fixed factors influence the bonding process—specifically whether they can block the process or whether bonding can occur in spite of an unfavorable history with respect to these factors.

The process of bonding as a definition of maternal attachment defines the concept as a qualitative "yes-no" phenomenon—either bonding occurs during the critical time period or it does not. If bonding during this time period does not occur, opportunity for maternal attachment is lost forever.[2] This part of the concept of bonding negates the capacity of the human for resiliency and developmental growth. It also negates the possibility for maternal attachment to adopted children and for mothers and infants who, because of physical condition of either or both at delivery, have had to be temporarily separated.

Klaus and Kennell's concept of bonding as maternal attachment has enjoyed a great deal of popularity, possibly because it came along at a time of increasing consumer demand for family-centered birthing experiences. The concept of bonding serves as a theoretical justification for changes in the delivery of maternity care during the immediate postpartum period in health care institutions. These changes have helped to make the birthing experience for the family more humane. However, the institution of these changes may have been a case of doing the right thing for the wrong reason—a dangerous method of practice for any discipline.

Klaus and Kennell's theory of bonding may ultimately prove to have some degree of validity. However, as the theory now stands, there are too many questionable assumptions, inferences, and conclusions

for it to be adopted as a theoretical base for practice and research without further critical investigation.

ALTERNATIVE THEORIES OF MATERNAL ATTACHMENT

The literature on alternative views of maternal attachment can be categorized as maternal attachment resulting from the experience of the woman prior to the delivery of the child, the woman's perception of the infant, and the interaction of the mother and infant.

Predelivery experience

The experience of the woman prior to the birth of her child has been postulated in the literature to affect the woman's ability to form an attachment to her infant. Part of the capacity for maternal attachment is thought to originate in the mothering the woman herself received as an infant and child.[7] This theory of maternal attachment hypothesizes that if the new mother had been inadequately mothered by her own mother, she would have difficulty in forming an attachment to her child. This idea received some experimental confirmation in Harlow's work with attachment in monkeys.[8]

Rubin[9,10] postulates that during pregnancy the woman goes through the beginning stages of assuming the role of "mother." She defines the behaviors of women during this period of role change as representative of different phases of the process. These behaviors are mimicry; role play; fantasy; introjection, projection, and rejection; identity; and grief work. (Grief work occurs after delivery and is the mourning of the lost role as a woman without a child.) Rubin hypothesizes that the successful passage through these behaviors in assuming the new role to be a prerequisite for the woman to form an attachment to the infant.

Clark and Affonso,[11] in a review article on maternal attachment, draw the conclusion that the woman's self-concept is a crucial factor in the process of attachment to the unborn child. They hypothesize that this self-concept is dependent on the support that the woman receives during pregnancy, her relationship with the fetus, and her maintenance of self-esteem during labor. Peterson and Hehl[12] found that satisfaction with the birth experience was a significant factor in maternal attachment as measured six months after delivery. However, Clark and Affonso's idea of self-concept as a factor in attachment, while perhaps empirically justifiable, remains experimentally unproven.

Perception of the infant

Psychoanalytic theory holds that during pregnancy the woman begins to fantasize about the unborn child and forms an image of the idealized child's physical appearance and personality.[7,13] Clark and Affonso[11] hypothesize that the woman develops an attachment to this fantasized child that has to be modified when the real child does not resemble the fantasized one in appearance and behavior. They do not, however, cite any experimental evidence to validate this hypothesis.

Rubin[14] hypothesizes that the development of an accurate perception of the infant to which the mother ultimately attaches is a result of a claiming process

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that occurs after the birth of the infant. She proposes that this process involves both projecting onto the child personality characteristics based on sex and resemblance to family members as well as discovering actual characteristics that make the child part of the family (eg, "he [she] has so and so's ears"). The claiming process also involves ascertaining that the baby is normal, whole, and intact. This claiming process, as formulated by Rubin, was not based on experimental data, but rather on empirical observations and theory from Deutsch.[7] Systematic investigation of this claiming process might prove to be fruitful in developing a theory of maternal attachment.

Rubin[15] believes the mental process of claiming is accompanied by the physical process of progression of the extent of maternal touch of the infant. She describes maternal touch as progressing from the initial use of the mother's fingertips to the use of her palms and then to contact using her whole arm and body encirclement. According to Rubin this process takes from three to five days to complete, although this time span was arrived at through unsystematic empirical observation. Klaus, Kennell, Plumb, and Zuehlke[16] validated the steps of the progression of maternal touch by systematically observing 12 mothers of term infants. However, they found that the entire process took only four to eight minutes to complete. Part of the reason for this gross discrepancy may be that intrapartum medication practices were different at the times of these two reports as a consequence of changing theory and practice in obstetrical management of labor. The mothers in the later study may therefore have been more alert and responsive and consequently able to go through the sequence of touch more rapidly. Part of this discrepancy may also be due to different observational techniques and environmental conditions as Rubin's infants were clothed, whereas Klaus et al's were nude.

The sequence of maternal touch can be hypothesized to be part of the maternal attachment process. However, further replication of the work of Klaus et al[16] needs to be done because of the small sample size.

Interaction of mother and infant

Maternal attachment can also be seen as developing from the interaction of the mother and her infant. This assumes that the infant is an active rather than passive agent in this process. For infants to be active agents, they must possess certain capacities for interaction at birth. That the infant has the capacity to be an active agent has not always been universally accepted, and at present the exact nature and extent of these capacities are still being investigated. Therefore, before the interactional concept of maternal attachment is explored, some discussion about the different views of the capacity of the infant at birth is necessary.

Capacity of the infant

Psychoanalytic theory claims the infant's behavior at birth is determined solely by visceral sensation. The infant has an instinctual need for food. This need receives gratification by the intake of milk supplied by the mother. Because the mother satisfies this need, she becomes the "object" of the infant's first human relationship. Infants develop "object relations" (ie, attachment) as their cognitive structure develops and they are able to differentiate their mother from the general environment as the source of their oral gratification. Therefore, according to psychoanalytic theory the infant is an undifferentiated organism at birth whose personality will be shaped by the mother according to the manner in which she responds to the infant's needs.[7,13,17]

Social learning theorists (behaviorists) also view the infant as essentially a tabula rasa at birth, ready to be shaped by the environment. However, unlike the psychoanalytic view, the infant's behavior is hypothesized to be random and not determined by innate visceral drives. The behavior evolves during the learning process initiated by the mother's response/nonresponse to this innate random infant behavior. As infants "learn" from the mother's response and their behavior becomes less random and more purposeful, this new behavior provides feedback to the mother and acts as a stimulus for her next response.[18]

Bowlby[19] has updated the psychoanalytic and behaviorist views of the infant's capacity at birth in light of current findings on infant behavior. He views the infant's behavior at birth as organized into relatively independent behavioral systems that emerge at different times in response to different specific stimuli. His five identified behavioral systems are sucking, crying, following, clinging, and smiling. He hypothesizes that these behaviors act as stimuli that induce the mother to respond to her infant. The pattern of her responses shapes the infant's behavioral systems into an integrated response. The gradual integration of these behaviors forms the infant's input into the reciprocal mother-infant relationship. Bowlby thus departs from the psychoanalytic and behaviorist view of the infant as a passive recipient shaped by the environment.

Brazelton[20,21] and other researchers, such as Blauvelt and McKenna[22] and Korner and Grubstein,[23,24] have examined neonates' ability to cope with and shape the environment (ie, their caretakers). Brazelton views the infant as a unique individual from birth on, who was capacities and methods of shutting out or tuning into the environment. These unique differences will affect how the mother will respond to the infant and cause her to modify her intended behavior. Brazelton's theory is based on systematic data collection of newborn behavior.

In summary, the psychoanalytic and social learning theorist views of the capacity of the infant at birth are incompatible with the idea of the newborn as an active agent in the interaction between mother and newborn. On the other hand, Bowlby's and Brazelton's theories of the infant's capacities at birth are compatible with this view of the infant.

The reciprocal relation

The interactional view of maternal attachment defines attachment as develop-

ing through the reciprocal interaction between the mother and her infant. The behavior of one of the individuals triggers a response in the other person. This response in turn acts as a stimulus for the other person and leads to further development of the behavior into a more complex pattern. In this interactional process, modification of responses occurs as the behavior is shaped into a pattern. Brazelton[25,26] and Brazelton, Koslowski, and Main[27] contend that the unique differences of the infant's behavior at birth lead the mother to change her initial mothering responses to be more in keeping with her infant's need for or avoidance of stimuli. In addition, the infant can let in or shut out disturbing stimuli. They hypothesize that disharmony results if either partner cannot modify behavior based on the response of the other.

In the interactional view the question of which partner started the interaction is irrelevant. Donovan, Leavit, and Balling[28] measured physiological responses of mothers to videotapes of three-month-old infants' (not their own) smiling and crying. Mothers who had rated their own infants as "difficult" were less sensitive as measured by changes in physiological parameters than mothers who had rated their own infants as "easy." The researchers then raised the issue of whether difficult infants are different at birth and turn off the mother's responsivity or whether mothers who start off parenthood as unresponsive create difficult infants by failing to read the infant's signals correctly. In the interactional view these questions would be reformulated to examine the dynamics of the interaction from the beginning to determine at what point the behavior of one partner became out of synchrony with the other.

Anderson[29] has developed a theory of interaction between mother and infant along physiological parameters and has named it the self-regulatory mother-young longitudinal interaction. The basic postulate of her theory is that physiological needs of the mother and infant will provide a feedback mechanism to regulate the timing, amount, and type of interaction that occurs. Her research focuses on physiological responses of mother and infant in the interaction, specifically, smooth muscle contractions involved in nutritive and nonnutritive sucking and gastrointestinal peristalsis and the relationship between sucking and oxytocin and prolactin release, uterine contraction, and milk let-down.[30]

IMPLICATIONS FOR RESEARCH

Klaus and Kennell's explanation of the development of maternal attachment as described in their theory of bonding is based on dubious assumptions and is composed of sweeping conclusions drawn from inadequate data. Because the theory of bonding has been adopted by nursing as *the* theory of maternal attachment and has been incorporated into the theoretical framework of nursing research and practice, the validity of this theory needs to be investigated—both intrinsically and with regard to the implications of this theory for the delivery of nursing care to parents and infants.

Alternative explanations of the components and processes of maternal attachment that may prove to be fruitful for

further investigation leading to the development of an alternative theory include the role of the woman's self-concept in the development of attachment to her child, the claiming process of the mother for her infant, and the psychological and physiological interaction between mother and infant.

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