

PATERNAL INFANT BONDING : A CRITICAL REVIEW

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INTRODUCTION

The last decade has been a revolution of sorts in the manner in which health care is rendered in the parent-child realm of nursing. 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. Beginning in the mid to late 1960's, despite objections from many professionals, husbands were allowed to support their wives through the labor and delivery process and witness the births of their children (Morton, 1966).

Just prior to fathers gaining access to the previously taboo labor and delivery area, the concept of mother-infant bonding became a popular concept (Klaus & Kennell, 1976). The concept of engrossment had also been introduced from studies conducted with fathers and newborns in the first few days after birth (Greenberg & Morris, 1974).

Although studies documenting the importance of maternal-infant bonding are prolific, those

documenting the importance of paternal-infant bonding are not so plentiful. Studies that specifically address the effects of the father's presence at delivery on the father's attachment behaviors reflect slightly more positive than negative (without a significant difference) findings. It is postulated, however, that the studies reflecting more positive findings are not methodologically as sound as the studies reflecting negative findings (Palkovitz, 1985).

In fact, the literature reveals that many men feel pressured by health professionals to go into the delivery room. It has also been validated that men who are inadvertently excluded from witnessing the birth of their infants feel compelled to "make up for it" by spending extra time with their infants in the presence of their wives for up to five months after birth (Palkovitz, 1985). Changing societal beliefs about gender roles and parenting responsibilities have prompted greater attention to the male who previously has been largely excluded from consideration in the reproductive and childbearing process (Jordan, 1990).

The purpose of this paper is to review past studies of paternal-infant bonding implied by the measures used, discuss the methodological problems of

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measuring paternal behaviors, attitudes, perceptions and variables. Furthermore, guidelines for future studies which might advance research in this area are developed.

THEORETICAL FRAMEWORK

The concept of bonding has its origin in the imprinting theory which hypothesizes that early crucial events will have long-lasting effects on the organism. The original experiment testing this theory was conducted on birds by Lorenz and is cited in Moltz(1960)

The sensitive period has been described as a unique interval in the first minutes to up to a month of life during which optimal parent-infant bonding begins. Bonding is the rapid formation of an affectional tie, unidirectional from parent to infant, during the first hours and days after birth, enhanced by physical contact(Klaus & Kennell, 1976). 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. The exact timing and duration of this period are not specified.

An attachment is an "affectional tie or bond that on individual(person or animal) forms between himself and another specific individual" (Ainsworth, 1972,). An attachment implies an enduring, significant relationship which can develop at any age (Ainsworth, 1972). Bowlby's theory of attachment is based on the following two assumptions about man : first man is composed of behavioral systems, second man is a social being whose existence depends upon continual interactions with the environment. Bowlby(1969) reported from observations of rhesus monkeys, baboons, and great apes that males were very protective and attracted to females with young. This is the first study that suggested the existence of paternal bonding. Bowlby also reported from observations of human infants that the newborn has the ability to elicit behavior from adults.

They tend to maximize the various types of stimuli that adults provide. For example, when an infant turns his head toward a speaker, this encourages the person to continue talking to the infant.

Greenberg and Morris(1974) identified paternal behaviors associated with paternal-infant bonding and termed them engrossment. They defined engrossment as a sense of absorption, pre-occupation, and interest in the infant. The seven characteristics listed by Greenberg and Morris included visual awareness of the newborn, tactile awareness of the newborn, awareness of distinct characteristics of the newborn, perception of the newborn as perfect, a strong feeling of attraction to the newborn resulting in a focusing of his attention of the infant, extreme elation or a "high" and an increased sense of self-esteem.

Studies have not proven or disproven the existence of a sensitive period in human(Palkovitz, 1985). As a result, the term bonding now refer to a long-term process of the parents' developing emotional ties to the child in which the events of the sensitive period are but one ingredient(Klaus & Kennell, 1982). While Kennell and Klaus continue to support the existence of a sensitive period, the definition has been expanded to include attachment parameter(long-term).

Ainsworth(1969) described attachment as an "ongoing condition of an organism and refers to its propensity to behave in certain ways characteristic of that organism which serve to maintain proximity to and interaction with a particular figure-the object of attachment" (Bowen & Miller, 1980). The literature is consistent in referring to attachment as the development of a long term tie or bond between two people. 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 to be adopted as a theoretical base for practice and research without further critical investigation.

LITERATURE REVIEW

Clearly, in the past decade, the concept of paternal-infant bonding has gained wide acceptance, and popular beliefs indicate that birth attendance and "bonding" positively influence father-child relationships. A review of the literature on paternal-infant bonding revealed a wealth of studies addressing several variables thought to influence the development of a relationship between a father and his infant. Does the research literature support such a notion? More importantly, have reliable studies appropriate for evaluating these beliefs been designed, and carried out? These issues must be addressed before meaningful strategies for public education and policy-making are formulated.

The published literature determined the level of father-infant bonding based on several different criteria: variations in participation in prenatal or perinatal events (Bowen & Miller, 1980; Cronenwett & Newmark, 1974; Greenberg & Morris, 1974; Gabel, 1982), expressed attitudes and beliefs about father participation (Bills, 1980; Humenick & Bugen, 1981), findings relating father participation to other variables (Rodholm & Larsson, 1979; Perry, 1983; Nicholson et al., 1983; Roberts, 1983; Jones, 1986), early contact and considerable psychosocial variables affect paternal-infant bonding (Leonard, 1976; Perry, 1983; Humenick & Bugen, 1981; Taubenheim, 1981; Jones, 1984; Toney, 1983). These reports are subsequently cited as evidence for father-infant bonding. Because their inclusion in the popular press has been widespread and interview data indicate that their influence in shaping popular opinion has been strong (Palkovitz, 1984), these 16 anecdotal reports will be briefly discussed in this review of literatures.

The main focus of this paper, however, is to review research specifically designed to assess the re-

lationship between father-infant interaction at birth and during few days after birth. Additional criteria included in this review are: sample size and subject characteristics, levels of independent variables, descriptions of dependent measures, and findings of studies. The goals of this review are to address the differences in findings reported in the above 16 articles, to consider whether methodological differences can account for the divergent finds, and to formulate guidelines for future research in this area. Research concerning paternal infant bonding is summarized in Table 1.

The first detailed account of the effects of birth attendance was written by Greenberg and Morris (1974). They reported that fathers who attended their child's birth were more confident in their ability to identify their child and also felt more comfortable holding their baby than fathers not at the birth. Many reports have cited the Greenberg and Morris' findings as the classic study showing the impact of the birth experience on fathers. However, a very important statement in Greenberg and Morris (1974) report is not cited: "There were no highly significant differences in observations of engrossment among fathers who saw their newborn's birth as opposed to those who did not"

A study similar to Greenberg and Morris' (1974) was conducted by Cronenwett and Newmark. In contrast to Greenberg and Morris's findings, no differences were observed between groups in response to infant items (e.g., appearance and distinctiveness of baby, feelings about holding the baby, feelings toward the baby). Formal preparation and attendance at delivery was positively influenced their self-perception. This study indicates that birth attendance has no major effect on father's perceptions of their infants, although prepared birth attendance is associated with increased closeness with spouse and enhanced self-concept.

<Table 1> Paternal behaviors, attitudes and perceptions and variables affecting paternal-infant bonding/ attachment.

Authors of Reference	Year	Sample	Methods and Measures	Results	Comments
1. McDonald	1978	N=7 fathers	Descriptive study. Paternal behavioral scales recorded by observer for three observation intervals.	Seven identified behaviors (hovering, prolonged gazing, visual contact, pointing, face to face, fingertip contact, palming contact) identified.	Paternal behaviors observed by author bear similarity to the behaviors by mothers. All observations occurred in a home-like birth environment. A replication of the study would be helpful to reinforce these data.
2. Rodholm & Larsson	1979	N=15 fathers	Descriptive study. Photographing fathers at first contact with infants.	Orderly progression of behaviors : touching extremities, touching with fingers and fingertips, palms, and dorsal aspect of fingers,. Slowly increasing eye contact to the enface position.	Only instrument-evaluation of photograph-had reliability data provided
3. Taubenheim	1981	N=10 first time fathers	Pilot descriptive study. Three instrument in the data gathering process : demographic data, attitude and observational tool.	Engaging in caretaking behaviors affects paternal-infant bonding as those fathers with the highest bonding scores all fed their infants during observation session.	Instrument had no reliability or validity
4. Greenberg & Morris	1974	N=30 fathers. Birth attendance, N=15. Nonattendance, N=15	Experimental study. Questionnaire, interview 48-72 hours after birth	Birth attenders more confident in ability to identify child. Both groups very "engrossed" in child.	No controls for prebirth attitudes. Attenders spent more time with child and went to more prenatal classes, spent more time in labor room.
5. Bills	1980	N=30 fathers. Physical contact with infant, N=15. No physical contact, N=15.	Experimental study. The effect of planned physical contact on the enhancement of the formation of paternal-newborn affection bonds. Instruments : affectional relationship questionnaire and personality research form.	Major finding of the study to be the universal and enthusiastic acceptance of early father-infant interaction	No mention about reliability or validity of instruments.
6. Leonard	1976	N=52. first time fathers	Descriptive study. Research assesses demographic variables and their attitudes toward their newborns.	Demographic and psychosocial variables were correlated with the attitude scores of fathers.	A larger sample size with more variance in demographic variables would have been more potentially enlightening
7. Jones	1984	N=30 first time fathers	Descriptive study. Two instruments :	>80% of father exhibited behaviors involving tactile	A larger sample and testing of the instruments

Authors of Reference	Year	Sample	Methods and Measures	Results	Comments
			observational check list & questionnaire (general information : physical involvement surrounding the birth, postpartum period, nonphysical interactions & fatherhood).	and visual interaction	for reliability and validity would increase the impact of this study.
8. Cronenwett & Newmark	1974	N=152 fathers. Prepared attenders, N=64. Unprepared attenders, N=58, Nonattenders, N=30.	Descriptive study. 28 items questionnaire.	Noreponse difference to infant items. Prepared attenders had enhanced relationship with spouse. Preparation related to positive self-perception. Attenders view child birth as more positive.	Big group difference in anesthesia. No control for prebirth attitudes.
9. Perry	1983	N=57 married couples, Four groups (mother-infant group, father infant group, parent group, and control group)	Experimental study. Instruments : neonatal behavioral assessment scale & neonatal perception inventories.	No relationship between infant behavior and perceptions of parents.	These two instruments are not related and should not be utilized to measure parents' perception based upon infant behavior.
10. Humenick & Bugen	1981	N=66 new parents. Three groups : prenatal, birth & postpartum.	Exploratory study. Parent-infant interaction scores. The husband and wife rate each other and correlation coefficient calculated.	Parental expectations of time to be spent upon infant care activities was comparable to the actually spent postpartum. Low trait anxiety and high parental expectations.	No reliability or validity on instruments
11. Nicholson & et al.	1983	N=40 couples	Descriptive study. 1. Interviewed the subjects prenatally and rated answers to questions on a Likert-type scale. 2. Observed for one hour during labor. 3. Interviewed one week after delivery.	Close marital relationship was correlated with a positive birth experience.	No reliability on validity on instruments. Previous child care experience may predict fathers' confidence level in caring for newborns.
12. Roberts	1983	N=27 fathers	Descriptive study. Demographic data and prenatal self-esteem scale when during third trimester pregnancy. Four weeks postpartum interview about labor and delivery experience.	Obligatory infant behavior affects both parents' ease of transition to parenthood and their perceptions of their infants.	Sample was a volunteer sample. The result of the study cannot be generalized other than the sample itself.

Authors of Reference	Year	Sample	Methods and Measures	Results	Comments
13. Jones	1986	N=157 first time fathers and their infants	Descriptive study. Brazelton neonatal behavior assessment scale at 24 hours or more of age. Fathers completed the Greenberg first father survey and demographic data questionnaire prior to being videotaped for ten minutes while they hold their infants.	State of the infant during the observation period appeared to predict the frequency of certain types (affection and comfort) of interactional behaviors.	Brazelton neonatal behavior assessment and Greenberg first father survey establish reliability and validity.
14. Gabel	1982	N=20 fathers who had not been formally prepared to attend the births of their infants	Descriptive study. Interviewed with subjects and demographic data questionnaire completed by subjects.	Indicate that as a group the fathers had very negative expectations of child birth, but in actually had found the birth experience to be meaningful and positive.	The sample was homogeneous one consisting of all black, employed, with at least high school education
15. Bowen and Miller	1980	N=46. Preparation and attend, N=21. No preparation, attend, N=8. No preparation, no attend, N=17.	Explorative study. Paternal behavior observation sheet and demographic data interview sheet, 15 minutes observation in hospital.	Presense at delivery related to total attachment and distal attachment but not proximal.	Group differences in parity, amount of anesthesia, time of observation, No controls for previous exposure to infant or prebirth attitudes. Very briefed observation in limited context.
16. Toney	1983	N=37. First hold 8-12 hours postdelivery vs. hold 10 minutes within first hour.	Experimental study. 10 minute observation of "bonding behavior frequencies". Those holding their infants at delivery and those not holding their infants at delivery. Interaction assessment instrument.	No group differences. However, relationships between "bonding behavior" and education, infant sex, feeding, delivery difficulty.	All were birth attenders. Very brief observations. Reliability data provided for instrument.
17. Easterbrooks	1989	N=60. Full term mother & father N=30 Preterm mother & father N=30	Descriptive study. Comparative between 2 groups ; (1) distribution of quality of attachment to parents (2) Similarity or independence in quality of attachment to parents	Birth status exerts little influence on infant-parents attachments. Suggestion calls for longitudinal studies examining in detail the nature of parent-infant interaction and individual differences in attachment quality.	Sample was a middle-class of preterm infants and families. Differences in studies may in part reflect such cohort differences.

Gabel(1982) examined twenty fathers who had not been formally prepared to attend the births of

their infants. The results indicate that as a group the fathers had very negative expectations of

childbirth, but in actuality had found the birth experience to be meaningful and positive. Bowen and Miller(1980) explored father-infant attachment and its relationship to preparenthood classes, presence at delivery and infant state with forty eight fathers and their infants. Results of the study suggested that the fathers present at delivery demonstrated more social attachment behavior than the fathers not present at delivery. Total attachment scores were higher for the fathers who were present at the births of their infants. An indirect finding of this study was that infants who are awake and alert may elicit certain attachment behaviors from their parents. Also Roberts(1983) examined the effect of infant behavior on the transition to parenthood. This study suggested that obligatory infant behavior affects the parents' ease of transition to parenthood and their perceptions of their infants. Jones(1986) examined the effects of infants' social competence and state upon father-newborn interaction. The major finding was that the state of the infant during the observation period appeared to predict the frequency of certain types of interactional behaviors-specifically affection and comfort.

Nicholson et al.(1983) commented that the great variability in fathers' involvement with their infants, although most of them attended birth, suggests that close marital relationship was correlated with a positive birth experience and also previous child care experience may predict father's confidence level in caring for newborns. Acknowledging considerable variability in patterns of support and individual needs, they concluded that "the type of father involvement which is most beneficial to father, mother and infant may depend on specific characteristics of the couple "(p.9). Researchers need to realize that paternal support can be represented by a wide range of behaviors, and that families are most likely to adopt patterns of interaction maximizing the match between roles, skills, and needs. The implication is that in some cases the optimal pattern of paternal support may involve little direct participation in infant care.

As is the case with birth attendance, early reports on the effects of early contact were highly anecdotal, with little attempt to systematize studies. Bills(1980) studied the effect of planned physical contact on the enhancement of the formation of paternal-newborn affectional bond. The researcher reported the major findings of this study to be the universal and enthusiastic acceptance of early father-infant interaction. The type and quantity of physical contact the fathers of the experimental group had with their infants were not mentioned in that study. Toney(1983) reported that there is no group difference in the frequency of "bonding behavior" displayed by fathers granted 10 minutes of contact within the first hour after birth and fathers making initial contact 8-12 hours after delivery. However more bonding behaviors were associated with higher education, male infants, breast-fed infants, and outlet forceps, or cesarean delivery.

Several researchers(McDonald, 1978 ; Jones, 1984 ; Rodholm & Larsson, 1979 ; Taubenheim, 1981) conducted a descriptive study to identify paternal behaviors toward their newborns. McDonald (1987) identified paternal behaviors observed during the first three minutes of contact and compared them to successive three minute intervals. The seven paternal behaviors identified in this study were hovering, prolonged gazing, visual contact, pointing, face-to-face, fingertip contact, and palming contact. The paternal behaviors observed by McDonald bear similarity to the behaviors exhibited by mothers toward their newborn. Rodholm and Larsson(1979) observed an orderly progression of behavior including the following : touching extremities, touching with fingers and fingertips, palms, and the dorsal aspect of fingers. Slowly increasing eye contact to the enface position was noted. Taubenheim(1981) conducted a pilot descriptive study. Findings in his study suggest that engaging in care taking behaviors affects paternal-infant bonding as the fathers with the highest bonding scores all fed their infants during

the observation session, Jones(1984) identified the quality and quantity of the affectional behaviors exhibited by fathers toward their infants as well as the relationship between certain paternal factors and these affectional behaviors. The results indicated that past child care experiences enhanced perception of the degree of input in the birthing process. More than 80% of the fathers exhibited behaviors involving tactile and visual interaction with their infants.

Leonald(1976) conducted a descriptive study of fifty two first-time fathers' attitudes toward their newborns. Demographic and psychosocial variables were correlated with the attitude scores of fathers using Pearson Product Moment correlation. The following factors were significant : number of children now desired, whether pregnancy was planned, type of delivery(cesarean birth generated higher attitude scores), whether they enjoyed being with young children, and knowledge of baby care.

At this time, no evidence has been reported that is strongly suggestive of "bonding" as a result of the father's early history with his infant. Studies reporting positive findings for birth attending versus nonattending fathers slightly outnumber studies finding no group differences. Generally, studies reporting positive findings are methodologically less sound than those reporting no differences. The literature considering early contact and extended contact is also inconclusive. It is highly likely that the discrepant findings reported in the literature can be accounted for by differences in sample characteristics and methodological considerations(e.g., differences between employing structured vs. unstructured observations, observational techniques vs. questionnaire measures, reliability and validity of instruments, and in differences in the timing and types of measures).

An objective reading of the existing literature suggests that although some father-infant relationships may benefit from increased exposure, attendance of childbirth classes, birth attendance, early contact, and extended contact are neither

necessary nor sufficient for the establishment of positive father-infant bonding.

Based on these reports, we can conclude that the indirect effects of marital enhancement and feelings of inclusion in the evolving family exert a more powerful impact on the father infant relationship than the direct effects of early interaction with the infant. Further research is needed to address these issues from a perspective specifically designed to study father involvement in the larger context of family development.

IMPLICATIONS and RECOMMENDATIONS

Based on the theoretical framework and a review of the literature in regard to our understanding of father-infant bonding, the following implications and recommendations were derived :

1. Designs with prebirth assessment of paternal characteristics are mandatory because some amount of self-selection is inevitably a part of the transition to fatherhood where personal choice is involved.
2. Pre-intervention sample characteristics must be adequately described by researchers to facilitate intergroup comparisons.
3. Greater emphasis needs to be placed on gathering detailed information about the past history of the father and father-mother couple. Information concerning various aspects of his own "mothering" and "fathering", the quality of the relationship with his partner, his preparedness for and experience with parenting, the planning of the pregnancy, the couple's perception of the paternal role, the father's planned caregiving involvement, his partner's support, and his birth expectations, represents variables likely to influence subsequent paternal behaviors.
4. Future research should be based on theoretical models outlining possible relationships between these variables and ideally should be capable of testing hypotheses concerning the relationships between variables. Studies determining the relative importance of variables and the direction of influ-

ence of variables are necessary as a base for informed policy-making positions as well as for adequate public education.

5. A more adequate theoretical base is needed for choosing and interpreting outcome measures. With few exceptions, researchers have endeavored to study the effects of birth attendance and father-infant contact on subsequent father-infant relationships while failing to use methods appropriate to capture reciprocity. A theoretical base adequate for evaluating the meaning of "objective" findings has not been developed. Does more behavior demonstrated toward an infant mean that a father is more involved? These problems are coupled with the fact that observations have generally been very brief. Efforts must be made to sample representative patterns of father-infant interaction.

6. Nursing research is needed both to identify characteristics of fathers who do not attach to their infants and to identify factors that promote paternal-infant bonding /attachment.

7. A reliable attachment /bonding tool to identify the risk factors for poor paternal-infant bonding and nursing strategies to work effectively with these fathers and their infants need to be developed.

8. Father participation would no longer be analyzed separately from maternal behaviors, and total parental involvement in all types of families could be studied as a separate variable, especially with regard to its influence on child outcomes.

9. Nurses are in the ideal positions to identify the men who are unable to form paternal infant bonding and to alter postnatal intervention according to these risks. Also nurses continue conducting research related to the promotion of paternal-infant bonding.

In today's society, expectant parents frequently request information regarding aspects of the perinatal period. Due to its high degree of proximity to obstetrical clients, nursing is in an opportune position to fulfill such educational needs. It is apparent that prenatal, perinatal and postnatal education and knowledge can promote the development of a posi-

tive father-infant relationship, a relationship which becomes a valuable contributor to the child's development. Ultimately, such a relationship may strengthen the integrity of the family unit. Health care workers must know when the attachment process begins.

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- 국문초록 -

부아(父兒)애착 : 문헌고찰 및 비평

김 혜 숙*

지난 10년동안 구미에서는 부모-아동 관계영역에 혁신을 가져왔다. 특히 부모-아동 애착이론의 획기적인 변화로 가족 중심 출산 경험을 강조하고 있다. 과거에는 남편이 아내의 출산에 참여하던 것이 타부시되어 왔지만 애착의 개념이 대두되면서 남편도 출산에 함께 참여하도록 고려하여 임신에서부터 부부가 함께 이 과정을 완수하도록 모든 환경을 변화시키고 있다.

애착이론은 다양하여 정신분석이론, 학습이론, 인지

발달이론과 동물 행동학적 측면에서 이해되고 있다. 다양한 이론적 배경과 개념들을 가지고 아버지-아동의 애착 및 유대관계에 대한 연구가 지난 10여년 이상 되어 오고 있다. 가장 관심의 초점이 되어 연구 되어온 것으로는 애착형성을 위해 중요하다고 하는 민감한 시기(Critical period)를 중심으로 애착의 특성인 시각, 청각, 촉각, 상호호혜적 관계, 긍정적 애정을 바탕으로 연구되어졌다.

이 연구는 부아 애착(Paternal Infant Attachment)의 연구를 연구방법, 측정도구 및 방법상문제와 변수들을 중심으로 재정리하여, 이 분야에 있어서 앞으로의 연구 방향을 살펴보았다.

17편의 연구들을 각각 년도, 표본수, 방법 및 측정, 결과 및 비교난을 비교분석하여 도표를 작성하였다. 이론적 기틀과 문헌고찰에 근거하여 다음과 같은 적용과 제언을 한다.

1. 출산전 아버지의 특성에 대한 사정이 필요하다.
2. 연구자가 집단간 비교를 용이하게 하기 위해 연구 전에 표본의 특성을 정확히 기술해야 한다.
3. 부모와 아버지의 과거력에 대한 상세한 정보수집이 강조되어야 한다.
4. 앞으로의 연구는 이론적 모델에 근거하여 이루어져, 대중교육 뿐아니라 정책결정에 기여해야 한다.
5. 연구결과 평가와 해석을 위해 정확한 이론적 근거가 필요로 된다.
6. 간호연구는 부적절한 부아 애착 형성에 있어서 아버지의 특성을 확인하고 부아유대와 애착 증진의 요소를 파악해야 한다.
7. 부아 유대에 대한 위험요소 확인을 위한 도구개발과 그들에 대한 효과적인 간호전략이 필요된다.
8. 가족에 있어서 모든 부모행위가 하나의 독립변수로서 연구되어야 하고 부아유대 증진에 관한 연구가 시도 되어야겠다.

오늘날 부모들은 임신기간동안 많은 정보에 접하기를 원한다. 산전, 산후의 교육과 지식은 긍정적인 부아 관계를 증진시키고, 이것은 아동의 발달에 크게 기여할 수 있다.

긍정적으로 이러한 관계는 가족단위를 강하게 통합시키게 되므로 건강관리자(Health care workers)들은 애착에 대해 높은 관심을 갖어야 하겠다.

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