Successful father infant bonding in the immediate postpartum period has been shown to reduce cognitive delay, promote weight gain in pre-term infants, and improve breastfeeding rates.

A father’s involvement that continues throughout childhood development is associated with higher academic achievement, better socioeconomic status, and fewer behavioral problems.

In 2015, there were 24 million children living in households without their biological father and were four times more likely to live at or below the poverty level.

Anticonvulsants, including prenatal involvement have the highest odds of becoming incarcerated and engaging in risky sexual behaviors that increase rate of teenage pregnancy.

In the last five years, there have been a limited number of research studies documenting interventions that promote early father-infant bonding.

A majority of research pertaining to the concept of father-infant bonding has not been published in the United States.

Methods and Materials

- Quasi-experimental post-test only design.
- Conducted on a 32 bed postpartum unit at Vanderbilt Medical Center from August 22nd 2016 through December 31st, 2016.
- A purpose sample of first-time fathers of healthy term infants born via uncomplicated vaginal deliveries who either participated in umbilical cord cutting or did not participate were recruited.
- The recruited sample were first-time fathers who spoke and read English, whose partner delivered an infant at least 37 weeks gestation via a vaginal delivery, and without evidence of maternal and infant complications.
- The final sample was composed of 52 fathers: 36 cord cutters and 16 non-cord cutters.
- Three questionnaires were given to fathers: Socio-Demographic questionnaire, Role of the Father Questionnaire, and Mother-to-Infant Bonding Scale. The Bonding Scale was collected at 48 hours after delivery and one month after delivery.

Figure 1. Adjusted Theoretical Model.

Theoretical Framework

- Becoming A Mother theory was adapted from Maternal Role Attainment theory by Ramona Mercer in 2004.
- The theory captures the transition of a mother from a known reality to a new world of motherhood and the psychological and social processes of maternal transformation discussed in Becoming A Mother theory are not represented in the original model but are represented as a father’s journey of adjustment and transition through four similar stages to develop a sense of self-confidence and competence in his new role.
- The adjusted model depicts both parents moving in unison upwards through their four unique stages towards mutual attainment of role identity and successful infant bonding.

Figure 2. Mean Bonding Scores.

Results

- Participants ranged in age from 20-47 years old (mean 31.3). Almost all participants were Caucasian (73.1%), married (86.5%), and employed full time (94.2%). Statistically significant differences were found between father groups, with a larger percentage of fathers reported an educational background of a bachelor’s degree or higher.
- Fifty percent of fathers reported an annual income greater than $80,000.
- The mean bonding differences between two groups were obtained in mothers who did not cut the umbilical cord statistically significant (P=0.008) compared to fathers who cut the umbilical cord (P=0.285). Fathers who cut the umbilical cord demonstrated a change in mean bonding scores from 1.31 to 1.52 between the two moments in time. Fathers who did not cut the umbilical cord demonstrated mean bonding score changes from 1.31 to 2.0 between the two moments in time.
- Fathers who cut the umbilical cord demonstrated a significant correlation between Role of the Father scores and mean Bonding scores at 12-48 hours after delivery but not at one month after delivery (P=0.137) fathers who did not cut the umbilical cord demonstrated a significant correlation between Role of the Father scores and mean Bonding scores at 12-48 hours (P=0.050) and one month after delivery (P=0.070).

Figure 3. ADF and Bonding Correlation - Cord Cutters

Figure 4. ADF and Bonding Correlation - Non-Cord Cutters

Discussion

- The project findings were consistent with previous research in that participation in umbilical cord cutting increased father's feelings of love towards the newborn at 12- 48 hours and one month after delivery.
- While no significant improvement of mean bonding scores occurred among cord cutters, the process of umbilical cord cutting may have had a positive effect on prolonging the window of opportunity for early father-infant bonding to occur.
- In comparison, fathers who did not participate in umbilical cord cutting demonstrated significant difficulty in sustaining an emotional connection with their infant one month after delivery, which is consistent with previous research.
- Both groups of fathers experienced better bonding scores at 12-48 hours delivery, which may be attributed to feelings of love, overwhelming joy, and elation experienced by first-time fathers after witnessing the birth of their newborn.
- The challenge of redefining the role of a new father may explain why cord cutters and non-cord cutters demonstrated a decline in the strength of emotional involvement with their infant at one month.
- The opportunity to be actively involved in labor and delivery rituals through umbilical cord cutting may have connected the father and infant in a way that prolonged the timeframe for optimal bonding to occur during a difficult period of transition.
- Therefore, fathers who cut the umbilical cord reported less difficulty maintaining an emotional connection with their infant compared to fathers who did not cut the cord at one month after delivery.

Conclusions

- Childbirth healthcare professionals play an important role in facilitating early father-infant bonding by encouraging active involvement of fathers at delivery.
- Based on the results from this project, it can be inferred that cutting the umbilical cord may hold a unique place in facilitating and sustaining early father-infant bonding.
- It is important that childbirth healthcare providers offer the opportunity for fathers to be actively involved in labor and delivery rituals through umbilical cord cutting.
- Fathers who choose not to participate in four unique stages of bonding should be exposed to a range of alternative bonding opportunities during the immediate postpartum period.

References

- Available upon request.

Contact
Ashley Scism, DNP, APRN, FNP-BC; Linda Wofford, DNP, RN, CPNP; David Wyatt, Ph.D
Belmont University

Figure 5. ADF and Bonding Correlation - Cord Cutters

Figure 6. ADF and Bonding Correlation - Non-Cord Cutters

Table 1. Socio-Demographic Table.