**Research Analysis Part 6**

This paper analyses Lucas, Morley, Cole, Lister and Leeson-Payne`s article *"Breast milk and subsequent intelligence quotient in children born preterm"* published in *The Lancet* in 1992.

**Purpose**

In this study, Lucas, Morley, Cole, Lister, and Leeson-Payne (1992) purported to show the positive correlation between the provision of breastmilk and positive neurodevelopment. The article reports the intelligence quotient (IQ) data in children between 7 ½ and eight years who had been provided breastmilk at an early age against those children whose mothers had either been unable or unwilling to provide breastmilk at an early age.

**Methodology**

This study involved preterm babies who had weighed below 1850g at birth and who had been subsequently admitted to various special-care baby units "*between January 1982 and March 1985*" (p. 262). These babies participated in 4 preterm-infant-feeding parallel trials. Their mothers had either opted to breastfeed them or not within the first seventy-two hours after giving birth. A few years later in an interim analysis, the researchers assessed the effects of the said breastfeeding on the IQ of the same children when they were between 7 ½ and eight years. The researchers collected information about the structure of the family, social class, pregnancy, maternal education, labor, delivery as well as neonatal period. The IQ was assessed using the *"Children's Weschler Intelligence Scale (revised Anglicanised)"* (p.261).  The researchers also carried out statistical analyses such as the *"Student's t-test, chi-square test, and multiple regression"* (p.262).

**Data**

The researchers had conducted a preceding study involving 926 preterm children, and the findings were that the choice of the mothers to breastfeed their infants showed significant development scores "*at 18 months post-term, even after adjustment for a wide range of potentially confounding factors"* (p.262). The subsequent study involved 300 out of 313 surviving children representing a 96% follow up rate. In this study, the researchers collected different variations of data such as the number of children who had received mother`s milk and those who had not, the mean birthweights of these children, the mean gestation periods, their mothers` educational status and social classes. The researchers considered this data when assessing the children`s IQs at 7 ½ to 8 years.

**Literature Review**

From the literature reviewed, Lucas et al. (1992) revealed that although some scholars have questioned this assertion, other scholars propose that breastfed kids can have an advantage in the subsequent development as well as intelligence quotient. Other reviewed studies showed that some researchers found the advantage of breastmilk after adjusting the differences between the breastfed babies and the formula-fed infants based on social class as well as the parent's education status. For instance, one study conducted in 1946, revealed that breastfed infants had an advantage in later IQ. Some other scholars believe that a mother`s decision to breastfeed may be a reflection of healthy behavior or their inherent desire for good parenting which may, in turn, affect the child `s subsequent development. Different scholars, however, seemed to agree on the benefits of human milk especially on the development of premature babies.

**Analysis**

The researchers used regression analysis to make adjustments for the confounding factors. They also carried out "*a separate analysis*" on the babies "*whose mothers chose to provide their milk"* to further explore the relationship between mothers' milk and the subsequent IQ advantage (p.263). After conducting the regression analysis on the proportional diet consumed against the IQ, *"there was a significant linear relation (p<0.05)"* which proved to be the greatest finding in the study (p.263). The point advantage was 9.0 or 95% confidence interval 6.6, 12.4 for infants who consumed 100% of their mothers' milk in comparison to children who did not consume any breastmilk. In the second group, the children maintained a significant advantage *"of 7.5 points (95% CI 3.5, 11.5; P<0.001)"* (p 263).

**Results**

The researchers found out that the diets distribution *"between the two groups was similar because of the experimental in the randomized part of the trials"* (p.262). The similarity minimized any outcome differences between children who had consumed breastmilk and those who had not consumed any. However, children who had consumed breastmilk proved to have had a higher significant advantage than children from the other group.  Infants whose mothers had decided to provide breast milk but did not do it showed subsequent intelligent quotient scores similar to those of mothers who had no intention to provide breastmilk. The scores were significantly lower compared to infants whose mothers successfully provided them with milk. There was no great identified difference in children whose mothers had intended to provide breastmilk but could not irrespective of social class. The factors *"related to developmental scores"* included birthweight, birth rank, required ventilation days, mother's age, social class, mother's education, gestational age and the child's gender (p 263). After these factors were adjusted, *"there were highly significant advantages for infants"* who had consumed breastmilk with regard to their verbal and performance scales, and their general IQ (p.263). The overall results suggested that the early consumption of breastmilk by infants was the greatest factor affecting their intelligence quotient at 7 ½ to 8 years.

**Discussion**

In the analyzed study, the researchers determined that preterm infants whose mothers gave breast milk, gained a significant advantage in IQ between 7.5 to 8 years, unlike their counterparts who received no mother's milk. Mother's milk consumption, therefore, relates more to later IQ compared to other factors such as social class and the intention to breastfeed. In fact, social class and mother's education proved to be unsatisfactory measures for positive health behaviors as well as parenting skills. Parental attributes were, however, associated *"with the mother's choice to provide breast milk"* (p.263).

**Conclusion**

The researchers concluded that breastmilk could have factors that "*compensate for its poor nutrient density"* (p.264). Breastmilk also has numerous hormones as well as trophic factors which can influence the growth and maturity of the brain.

**Intended Audience**

The intended audience for the research is lactating mothers and young women who are yet to become mothers. The study can also address staff in hospitals where preterm babies are confined so they can encourage mothers to breastfeed the children within the first few hours of birth.

**The shortcoming of the Design**

The researchers have not adequately explained how they collected information about factors such as neonatal period, delivery, labor, and pregnancy.

**Opposing Views**

Previous studies had suggested that the intention to breastfeed may have been a reflection of good health behavior and the inherent desire for good parenting. Lucas et al., (1992), however, revealed that there was no significant difference in children`s IQ for children who had not consumed breastmilk irrespective of whether the mothers were willing or not willing to breastfeed.

**Gaps in the Research**

There is a need to explore further whether "*the advantage in intelligence seen with human milk feeding"* (p.264) emanates from coincidental parenting, genetic factors or human milk factors. These factors will have crucial implications for the baby nutritional policy as well as neonatal care.

**Relevance to the Field of Lactation**

The research is relevant to lactation field in that it sought to find out the relationship between breast milk as the subsequent IQs in children born preterm. The researchers revealed that breast milk enhances infant development as well as their IQ.

**References**

Lucas, A., Morley, R., Cole, T., Lister, G., & Leeson-Payne, C. (1992). Breast milk and subsequent intelligence quotient in children born preterm. *The Lancet*, *339*(8788), 261-264. doi: 10.1016/0140-6736(92)91329-7