Introduction

Technology and Family Life.

Research on artificial intelligence (AI) began in the 1950s, but AI is now commercially available in the form of personal devices, home efficiency products, and items for children. The Snoo is a smart bassinet designed for infants from 0-6 months. An app is downloaded on an iPhone or iPad alerts parents when a fussing infant cannot be put back to sleep by the soothing sounds and rocking function of the bassinet. Dr. Karp (Happiest Baby, Inc., 2018), designer of the Snoo, claims the experience of early parenting is less stressful due to the alert function of the bassinet that provides better sleep for infants and parents.

Rationale and Purpose of the Study.

This research focuses on the impact of AI devices on early stages of social communication development. The Snoo bassinet is one such device that may impact parent-infant interactions in the first six months of life. The purpose of this study was to investigate how AI might yield a different experience in social and interactive life for infants that have been exposed to it from their earliest days.

Methodology

Methodology Continued

Description of the Family.

The infants born into the study family arrived at 28 weeks and 2 days gestational age on November 4, 2019. Baby E weighed 2 lbs. 12 oz., and Baby Y weighed 4 lbs. 4 oz. Both infants were placed in incubators in the NICU, where they remained for 72 days. The parents established a daily visiting, feeding, and kangaroo care plan that was coordinated by the interdisciplinary NICU team. The infants were discharged to go home at 10 weeks and 2 days of age on January 15, 2020, which was 10 days before their original due date, January 25, 2020.

Materials.

The parents were provided with two Snoo bassinets and three sets of Snoo sleep sack swaddles of various sizes, as well as sheets, leg extenders for the bassinets, and informational material on the Snoo. Data collection materials included a home technology and values questionnaire, a home technology and values questionnaire, and a family technology and values questionnaire, which was completed and returned to the researcher. Data collection began immediately with parent journals that continued throughout study. Researcher telephone check-ins occurred weekly and home visits with semi-structured interviews were conducted monthly.

Analyses.

A qualitative, case methodology was used in this study. Data was segmented into three phases for analysis: Phase I – NICU; Phase II – Home and Introduction to the Snoo; Phase III – Daycare. A fourth phase was planned, but due to the COVID-19 pandemic, no additional data was forthcoming because of the mandatory termination of in-person home visits. Fifty pages of materials from all the sources were available for analysis of parent perceptions. Thematic coding (Bowby’s, 1989) early infant behaviors to elicit social contact and Stern’s (1977) communicative sequences were used to answer the questions of the study.

Results

Question 1. Regarding question one, parent perceptions of development were not changed by use of the Snoo. The parents began reading about infant development at the beginning of the pregnancy and shifted to reading about development in twins once that piece of information was identified as the need. The parents used the Snoo to track the baby’s progress in milestone achievements and appreciated the individuality of each twin.

Question 2. Regarding question two, the use of the Snoo did impact the parents’ interactions with the infants. The parents were comfortable with the Snoo and individualized the settings of the bassinet to respond to that best suited each infant. Examples from the parent journal illustrate this. Baby Y was described as a fussy infant who fusses easily and doesn’t self-soothe. Rather than maintaining the highest setting at 2 they let the Snoo automatic function take control.

1. “Tonight we removed the motion limiter, and Baby Y went up to level four. Low and I talked about it. We think it was too much. (we removed the motion limiter so the baby could settle down).”
2. “New noises are distracting to her, and the lack of noise when she sleeps makes it hard for her to go to sleep.”
3. “She is getting used to the Snoo and the routine, so she anticipates what will be happening when she is put in the Snoo.”

A field note from an early home visit gives insight to the parents’ appreciation for the Snoo’s functions as a part of parenting interactions: “Level 4 soothing for Baby Y works wonders. If I did not have the Snoo, it would be much different because of her sensitivities and complicated sleep issues.”

Lastly, since only one bassinet could be linked to a single phone, each parent received data and alerts for one infant. The parents set up a system for who would attend to the infants regardless of which phone alert went off. This allowed them to work in tandem to meet the needs of the infants, still get rest, and adjust support for one another as needed.

Discussion

The results of this qualitative study suggest that the perceptions of parents about infant development were not changed by use of the Snoo. The Snoo did impact parent interactions with the infants as its use provided them with data about sleep, wake, and agitation that aided in care routines. Parental comfort with their responsiveness to the infants increased as family life was adjusted to meeting the 24/7 needs of the newborns. When the parents’ comfort was compared to that of the extended family, a positive attitude shift emerged as the Snoo’s monitoring function was recognized.

Multiple sources of documentation were available in this data collection. The researcher used a narrative approach to analyze that incorporated well-established research on infant communication (Bowlby, 1969; Trevarthen, 1977). Data on patterns of social awareness (Bowby, 1969), and these methods were efficient for managing the data. The findings were limited by the unique circumstances of being 1st born twins, the winter season in which the study took place, and monozygotic twins. The technology did not exist.

A limitation of the study is that only one family was followed. In addition, the study was conducted with infants who arrived prematurely, but they do make two important contributions to the literature. Research suggests that the density of technology in a home may change interactions that take place between a mother and child in the earliest months of development. The Snoo supported the emerging parenting skills of these parents, perhaps because they users of technologically advanced devices. Studies of technology exposure with twins is rare, and it is non-existent with smart infant technology. The perceptions of the parents suggest that having this technology allowed them to establish care interactions with more confidence.

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Selected References


