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# Quality content in digital apps: Assessing infant development, parenting, and child care aspects

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**Abstract**

Parent's use of apps to support their parenting is on the rise. New parents have unique challenges since they might feel unprepared to raise their children. They might rely on mobile programs, or "apps," and the Internet to help them deal with the challenges of daily parenthood. In the past, extended families provided support to young parents in raising children, but with the shift towards nuclear families, traditional parenting assistance is often unavailable. Consequently, there is a lack of spontaneous teaching and learning processes, leaving parents with insufficient knowledge of common childcare practices. The main objective of this study was to conduct a systematic analysis of infant parenting apps regarding available information about infant development, infant parenting and child care aspects. For analyzing various infant parenting apps, 40 apps were downloaded and installed on an Android phone available for free download on the Google Play Store. Each app was used and then individually assessed by the researcher for its content and quality on the various criteria using a self-structured schedule. The majority of the apps did not have information on infant development, parenting and child care. These apps provide information that is insufficient and not easy to understand. The information is in English language only. The findings of this unique analysis highlight that the information provided in the app is insufficient and lacks credibility.

**Keywords:** Mobile applications, infant parenting, infant development, childcare practices etc.

## Introduction

Parents have the greatest and most enduring impact on their children's lives, and research on how to promote their development demonstrates the critical role that early-life cognitive and social support from parents has in fostering infant development (Güven *et al*. 2023) [4]. Parenthood involves significant physical, social, and psychological changes, marked by both happiness and anxiety for numerous parents. New parents experiencing parenthood for the first time often feel unprepared to navigate the daily challenges of caring for their infants.

Rehman *et al*. (2016) [9] assessed mothers' knowledge about child development and their sources of knowledge. They found that mothers have inadequate knowledge about child development. Aldayel *et al*. (2020) [2] identified the parents' levels of awareness regarding the developmental milestones of their children and the sources of information they use to stay informed. In all four domains, their expertise was found to be inadequate. Parents were shown to be the most knowledgeable about physical development out of the four areas of development; cognitive, social, and emotional development came next. Few parents stated that they always trusted the advice of their medical providers. They discovered that parents lacked the necessary understanding of developmental stages. Karuppannan *et al*. (2020) [5] evaluated the mother's parenting abilities and understanding of her child's developmental stages. They discovered that mothers in Kanchipuram have very less understanding of the developmental stages of their children.

In the past, extended families provided support to young parents in raising children, but with the shift towards nuclear families, traditional parenting assistance is often unavailable. Consequently, there is a lack of spontaneous teaching and learning processes, leaving parents with insufficient knowledge of common childcare practices.

They may turn to the Internet and mobile applications, commonly known as "apps," seeking guidance and assistance in managing various parenting scenarios. Several parents use mobile applications (apps) to record and track their infants' growth and development, learn about parenting techniques, and calm their babies by playing white noise and lullabies. 'How to' video-sharing apps assist parents in learning about practical aspects of baby care, such as putting together and operating baby equipment. (Lupton & Pedersen 2016) [7].

Lupton (2016) [6] assessed the use and value of digital media for information about pregnancy and early motherhood. Results of the study showed that women tend to value multi-functional apps and digital platforms related to early motherhood. His study revealed the importance of using

digital platforms for making mothers socially active and maintaining relationships with other mothers.

However, women also valued experts' advice and showed more desire for highly ready to access information and suggestions by medical professionals. Numerous apps have been released by app developers and health care providers to assist with parenting. However, the abundance of pointless and subpar apps means that parents still have trouble finding those that suit their needs. (Virani *et al.* 2019) [11]. Researchers globally have developed various apps to aid parents during the initial year of their infant's life (Franciscovich *et al.* 2015 and Morse *et al.* 2018) [3, 8].

Nonetheless, parents still have trouble locating reliable apps that live up to their high standards for functionality and usability. Because of this, parents use unreliable and unsafe apps, the majority of which are created by businesses, which may encourage bad parenting techniques (Virani *et al.* 2020) [12].

## Methods

### Sample selection

The digital sample of the study comprised of 40 infant parenting apps available for free download on the Google Play Store which were analyzed for their content and quality.

### Data collection

A total number of 40 apps were downloaded and installed on an Android phone which were available free of cost on Google Play Store.

### Data analysis

Each app was used and individually assessed by the researcher for its content and quality on the various criteria by using a self-structured schedule. The collected data were classified and tabulated to draw meaningful inferences as per the objectives of the study. For interpretation of results, the following descriptive statistics were used: Frequency and percentage.

## Research Findings

**Table 1:** Availability of information on infant development N=40

| Growth aspects | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| Child's weight | 23 | 57.5 | 17 | 42.5 |
| Physical growth | 37 | 92.5 | 07 | 7.5 |
| Brain development | 35 | 87.5 | 05 | 12.5 |
| Speech development | 33 | 82.5 | 07 | 17.5 |
| Social growth | 32 | 80.0 | 08 | 20.0 |
| Development task | 29 | 72.5 | 11 | 27.5 |
| Learning problem | 33 | 82.5 | 07 | 17.5 |

Results of the infant development information have been depicted in Table 1. As the Table shows information on a child's weight was provided only by 57.5% of apps while 42.5% did not provide such information. The majority of the apps provided information on physical growth **(**92.5%), brain development (87.5%), speech development (82.5%), social growth (80%), developmental tasks (72.5%) and learning problems (82.5%) while the remaining apps did not provide this information.

**Table 2:** Availability of information on infant parenting N=40

| Parenting aspect | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| Parenting style | 35 | 87.5 | 5 | 12.5 |
| School tips | 26 | 65.0 | 14 | 35.0 |
| Moms' daily classroom | 09 | 22.5 | 31 | 77.5 |
| Good parent | 17 | 42.5 | 23 | 57.5 |
| Indian myths | 03 | 7.5 | 37 | 92.5 |

Results of the information on infant parenting have been shown in Table 2. The majority of the apps provided information on parenting style (87.5%) but at the same time they did not provide any information on Indian myths (92.5%). Nearly three-fourth of the apps did not provide information on moms' daily classrooms (77.5%). More than half of the apps provided information on school tips (65.0%). Only 42.5 percent of apps provided information on good parent aspect. The rest of the apps did not provide content on above given aspects.

**Table 3:** Availability of information on child care N=40

| Child care aspects | Yes | | No | |
|---|---|---|---|---|
| | F | % | F | % |
| Child daily care | 16 | 40.0 | 24 | 60.0 |
| Daily activities and routine | 23 | 57.5 | 17 | 42.5 |
| Child crying | 20 | 50.0 | 20 | 50.0 |
| Child behaviour | 14 | 35.0 | 26 | 65.0 |
| Child eating habits | 07 | 17.5 | 33 | 82.5 |
| Child safety | 21 | 52.5 | 19 | 47.5 |

Results of information on child care have been displayed in Table 3. The majority of the apps did not have content on child eating habits (82.5%) while the remaining of the apps provided such information. More than half of the apps did not provide information on child daily care (60.0%), or child behaviour (65.0%). Around half of the apps provided information on child crying (50.0%). More than half of the apps provided information on daily activities and routines (57.5%) and child safety (52.5%).whereas the remaining apps did not contain information on these aspects.

## Discussion

### A. Infant development

The findings of the present study underscore a critical gap in the existing landscape of mobile applications designed for mothers in India. The majority of the apps analyzed provided content on essential aspects such as a child's weight, physical growth, brain development, speech development, social growth, developmental tasks, and learning problems. However, it was observed that the depth and breadth of this content were insufficient to meet the needs of Indian mothers effectively. This observation resonates with previous research conducted by Samanta *et al.* (2021), which highlighted a significant demand among mothers for comprehensive information on the physical, motor, cognitive, social, and emotional development of infants. The study reinforces the notion that while some information is available through existing apps, it often falls short in terms of depth and specificity required by mothers in India. This finding aligns with previous research by Aldayel *et al.* (2020) [2] and Karuppannan *et al.* (2020) [5] to further corroborate these findings. They have identified

persistent knowledge gaps among mothers regarding various aspects of infant growth and development. Specifically, mothers lack sufficient knowledge about the nuances of physical, motor, cognitive, social, and emotional development, as well as developmental milestones.

**B. Child care and Infant parenting**

The current study reveals a notable deficiency in existing mobile applications concerning essential care aspects of infant parenting. Specifically, it was observed that a significant number of apps lacked information on crucial topics such as child daily care, child crying, daily activities and routine, child behaviour, and child eating habits. This inadequacy indicates that the current digital resources may not fully meet the informational needs of mothers in India. These findings are consistent with previous research conducted by Samanta *et al*. (2021), which highlighted a strong demand among mothers for comprehensive information on these infant care and parenting aspects. The study underscores the gap between the information available through existing apps and the specific informational needs expressed by mothers.

Similarly, a study found that the survival of neonatal is influenced much by the care provided by the family before, during and after delivery. Due to lack of proper care 1/14 new born die in poor slum dwellings of Madhya Pradesh (M.P.) in India (Agarwal *et al*., 2007) [1].

**Conclusion**

The findings of this unique analysis highlight significant gaps in the information provided by parenting apps for parents of infants. Specifically, these apps often lack relevant and comprehensive information on key aspects such as infant growth, effective parenting strategies, and child care practices. The analysis reveals that the available apps offer insufficient guidance and support in these crucial areas, leaving parents without the necessary resources to make informed decisions about their child's development and care. Additionally, the credibility of these apps is often questionable, further undermining their usefulness. This research underscores a strong demand among mothers for more reliable and thorough information on infant growth, parenting techniques, and child care, emphasizing the need for improvements in the quality and trustworthiness of parenting apps.

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