Innovation of Smart Baby Care in Educating Postpartum Mothers on Newborn Care

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Article Info	ABSTRACT
  Corresponding Author: Indarwati Universitas 'Aisyiyah Surakarta Email: tunmarya@aiska-university.ac.id	A mother's success in raising a baby is greatly influenced by her level of knowledge and skills. Primipara mothers, or those who have just given birth for the first time, often lack understanding about newborn care. The results indicate that the ease of application achieved a score of 65.9%, content suitability was rated at 69.4%, completeness reached 58.8%, the alignment with desired knowledge needs was 52.9%, and the ability to facilitate understanding of care practices scored 70%. The SBCMomBaby application is easy to use, appropriate for baby care content, comprehensive, and aids in understanding baby care knowledge. However, it does not fully meet the specific desires of postpartum mothers regarding certain knowledge areas that have not been included in the application.

1. INTRODUCTION

A mother's success in raising a baby is greatly influenced by the level of knowledge and skills. Prima para mothers or mothers who have just given birth for the first time often do not understand newborn care [1]. Low maternal knowledge of newborn care poses a risk to at baby's safety [2]. Proper education will equip mothers with the necessary information to effectively care for their babies. This is particularly important for new mothers, who often feel anxious and unsure about their abilities. With sufficient knowledge, mothers can provide optimal care for their babies, allowing them to grow and develop health.

Newborn care is a crucial stage in human life. Quality baby care can enhance a mother's confidence after giving birth and accelerate recovery after delivery. [3]. Every touch, attention, and decision made has a significant impact on a child's growth and development. In this digital age, technology has provided us with advanced tools that can help provide the best care for infants. Smart baby care has emerged as an innovative solution that combines modern technology with traditional child care knowledge[4].

The utilization of this technology not only impacts health aspects, but also enhances the quality of life for babies and families. With remote monitoring, parents can feel more at ease and confident about their baby's safety, especially for premature infants or those with special medical conditions. In addition, this technology can assist parents in managing the complex tasks and time demands of caregiving. Thus, smart baby care can contribute to families' overall well-being.

Smart baby care is also crucial for both mothers and their babies, because it allows mothers to focus more on interacting with their infants, thereby strengthening the emotional bond between parents and children. Furthermore, smart baby care can be designed to educate mothers on how to provide optimal care to their babies.[5] Smart baby care can be a valuable tool for improving the quality of pediatric healthcare services.

In an increasingly advanced digital era, technology has permeated almost every aspect of our lives, including parenting. Smart baby care has emerged as an innovative solution that addresses the challenges faced by mothers after childbirth. By utilizing various applications, devices, and digital platforms, mothers can gain easy and rapid access to accurate and reliable information regarding baby care. The interactive features provided by this technology allow mothers to monitor, receive parenting tips, and connect with other communities. Through smart baby care, the process of learning and adapting as a new mother becomes more enjoyable and effective.

Based on the above presentation, we intend to create a health-care tool to educate mothers after childbirth on the care of newborns, covering topics such as proper breastfeeding, breastfeeding techniques, how to express breast milk, how to store breast milk, umbilical cord care, and the recognition and treatment of jaundice (ikterus). We named this tool SBC MomBaby (Smart Baby Care MomBaby). Through this research, we aimed to evaluate whether the SBC MomBaby application can be used by postpartum mothers and is engaging enough to enhance their understanding of newborn care.

2. METHOD

This Quantitative Descriptive Study aimed to evaluate the SBC MomBaby product, an educational tool for newborn care that operates via a web-based system, which includes videos and educational articles covering topics such as Early Initiation of Breastfeeding, exclusive breastfeeding knowledge, proper breastfeeding techniques, how to express breast milk and its storage, umbilical cord care, and recognition and management of jaundice (icterus) in infants.

The aspects evaluated included usability, completeness, relevance, and the effectiveness of the tool in transferring knowledge to postpartum mothers. The SBC MomBaby application was evaluated using a questionnaire that was tested for validity and reliability. The results of the validity test indicate that all items are valid, as each item compared with the r table shows a coefficient value greater than the r table, and the reliability test yielded a Cronbach's Alpha value of 0.83, indicating that the questionnaire is reliable.

A sample of 85 postpartum mothers was selected from Muhammadiyah Hospital in Sukoharjo from May to September 2024. Data analysis was performed descriptively using frequency distribution tables.

3. RESULTS AND DISCUSSION

The results of this study are presented in the form of tables, with the analyzed variables being the characteristics of postpartum mothers using the SBC MomBaby Application, ease of use, understanding of the video content within the application, completeness of videos on newborn care, relevance of video content to the skills needed for baby care desired by postpartum mothers, and the usefulness of the E-Quation game feature in facilitating the understanding of newborn care techniques. The following is at presentation of the research results depicted using tables and images.

3.1. Descriptive Analysis of Postpartum Maternal Characteristics

Tabel 1. Characteristics of Respondents Using the SBC MomBaby Application.
at the PKU Muhammadiyah Hospital, Sukoharjo

No	Characteristics	F (%)
1	Education Level	
	Higher Education	31 (36.4)
	High School	42 (49.4)
	Junior High School	10 (11.7)
	Elementary School	2 (2.35)
2	Age	
	>35	12 (14.1)
	30-34	17 (20)
	25-29	29 (34.1)
	<25	27 (31.7)
3	Parity	
	>3 children	17 (20)
	3 children	21 (24.7)
	2 children	31 (36.4)
	1 child	16 (18.8)
4	Employment Status	
	Doctor	2 (2.35)
	Lecturer	4 (4.7)
	Teacher	17 (20)
	Civil Servant	15 (17.6)
	Private Sector (Employee/Entrepreneur/Services/etc.)	22 (25.9)
	Trader	9 (10.6)
	Housewife	11 (12.9)
	Farmer	2 (2.35)
	Laborer	3 (3.5)

Table 1 shows that, based on the characteristics of education level, the majority of respondents had a high school education (49.4%), while 2.35% of respondents had elementary school education. In terms of age, the majority of respondents were between 25 and 29 years. Based on the number of children born, the majority had two children. Furthermore, based on employment status, 25.9 majority worked in the private sector (25.9%).

The discussion of education level indicates that the education level of Sukoharjo residents is already high. The community's awareness of continuing education is good. In terms of education and the desire to have children, it appears that high school education has a higher frequency than higher education, and this research supports Saidah's research.[6]. Research has consistently shown that individuals with higher educational levels tend to have a lower desire to have children. Studies have demonstrated that the higher a person's education level, the fewer children they wish to have. This phenomenon is supported by various research studies, including that conducted by Agusyabana in 2018, which found that the higher the level of education, the lower the desire to have many children.[7]

The majority of respondents gave birth between the ages of 25 and 29. This age range is considered productive and associated with a lower risk of complications during childbirth. Previous research indicates that most women give birth between the ages of 25 and 30.[8][9], Sulastri stated that the productive age for women to give birth is between 20 and 35 years.[10].

The discussion regarding maternal parity in Table 1 shows that the majority of them were multiparous, with two children born. Previous research indicates that most mothers who have given birth have to 2-3 children[6],[11]. Research related to the desire for at number of children to be born among adolescents in Yogyakarta shows a preference for a smaller number of children [12]. Related to the slogan 'many children, many blessings' and now 'quality children,' the desire for children from each family has become more liberated. Furthermore, previous research explains that the number of children one wishes to have is influenced by the number of children already owned, perceptions of the ideal number of children, socioeconomic status, place of residence, and level of education[13]. They believe that having more than two children is acceptable, as long as they are of good quality. Meanwhile, Handayani's research explains that as age increases, the desire to have more children after having two decreases[14].

Based on the table regarding employment status, it appears that the majority of postpartum mothers are self-employed.

3.2. Results of the Descriptive Analysis with Frequency Distribution of the SBC MomBaby Application Assessment

Table 2. SBCMomBaby Application Assessment Results by postpartum mothers
at the PKU Muhammadiyah Sukoharjo Hospital.

No	Variable	Very Easy / Very Complete / Interesting / Suitable / Very	Easy / Complete / Interesting / Suitable / Understand able	Fairly Easy / Fairly Complete / Fairly Interesting / Fairly Suitable	Difficult / Not Complete / Not Interesting / Not Suitable
1	Is the SBC MomBaby application easy to use?	56 (65.9%)	11 (12.9%)	15 (17.6%)	3 (3.5%)
2	Is the video content in the SBC MomBaby application easy to understand?	59 (69.4%)	15 (17.6%)	10 (11.7%)	1 (1.76%)
3	Is the video content on newborn care complete?	50 (58.8%)	25 (29.4%)	8 (9.4%)	2 (2.35%)
4	Is this video content suitable for the newborn care skills you want?	45 (52.9%)	10 (11.7%)	17 (20.5%)	13 (15.3%)
5	Does the E-Quation game feature help you understand newborn care techniques?	60 (70%)	17 (20%)	7 (8.2%)	8 (9.4%)

Based on the information presented in Table 1, we can conclude that the Smart Baby Care MomBaby application is well accepted by postpartum mothers. More than 55% of the respondents rated it as very easy to use/very suitable/very comprehensive / very helpful, except for the variable assessing the suitability of the content with the knowledge needs of postpartum mothers regarding newborn care, which received a score of 45 (52.9%).

Moreover, the evaluation results indicated that 15.3% of respondents rated the suitability of the content with the desired knowledge as lacking. Among the five evaluated variables, the highest score was achieved for the variable assessing the usefulness of the E-Quation feature in understanding newborn care techniques.

Regarding the variable of content suitability of the application according to the needs of postpartum mothers, the ratings were low. This is related to the differing experiences and knowledge of mothers. Some mothers already have a lot of knowledge about baby care, but may lack information on specific aspects they consider important, which is not explained in the application features. As a result, they assessed it as not meeting their expectations. On the other

hand, some mothers have limited knowledge about newborn care, and since the application provides good information in this area, they rate it as very suitable.

A mother's success in raising a baby is greatly influenced by the level of knowledge and skills. Prima para mothers or mothers who have just given birth for the first time often do not understand about newborn care[5][15].

4. CONCLUSION

A mother's success in raising a baby is greatly influenced by the level of knowledge and skills. Prima para mothers or mothers who have given birth for the first time often do not understand newborn care.

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