



CADRE SATISFACTION IN USING THE SI CETING APPLICATION AS AN INFORMATION AND EDUCATION MEDIA FOR STUNTING PREVENTION IN LEMINGGIR VILLAGE, MOJOSARI DISTRICT, MOJOKERTO REGENCY

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ABSTRACT	Keywords
Community health cadres play an important role in delivering health education for stunting prevention. Digital educational media may facilitate access to structured health information and support cadres in conducting health education activities. This study aimed to assess cadres' satisfaction with the use of the SI CETING application as an information and education medium for stunting prevention. A descriptive quantitative study was conducted among Posyandu cadres in a rural community. A total of 31 cadres were recruited using total sampling. Data were collected after participants had used the SI CETING application using a structured 24-item user satisfaction questionnaire with a four-point Likert scale. Data were analyzed using descriptive statistics and presented as frequencies, percentages, means, and standard deviations. All respondents reported positive satisfaction with the application. Twenty-four respondents (77%) were categorized as fairly satisfied, while seven respondents (23%) were categorized as very satisfied. No respondents were categorized as less satisfied or dissatisfied. The mean scores across the 24 questionnaire items ranged from 3.0645 to 3.2581 on a four-point scale. SI CETING received positive satisfaction ratings from cadres and provided preliminary evidence of a positive user experience in the context of this study. However, these findings do not establish the effectiveness of the application in improving knowledge, changing behavior, strengthening cadre performance, or producing health outcomes. Further studies using analytical or longitudinal designs and objective outcome measures are needed to evaluate the effectiveness and sustainability of SI CETING for stunting prevention.	SI CETING; Stunting Prevention; Community Health Cadres; User Satisfaction.

INTRODUCTION

Stunting remains a public health issue requiring serious attention due to its

impact on physical growth, cognitive development, productivity, and the future quality of human resources. Children

affected by stunting face a higher risk of impaired brain development, reduced learning ability, an increased risk of non-communicable diseases in adulthood, and diminished economic productivity. Consequently, accelerating the reduction of stunting has become a priority for health development in many countries, including Indonesia (Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional (Kementerian PPN/Bappenas) & United Nations Children's Fund (UNICEF), 2024; UNICEF & Ministry of Health Indonesia, 2025).

Indonesia has shown a downward trend in stunting prevalence over the past few years. According to the Indonesian Nutritional Status Survey (SSGI), the prevalence of stunting declined from 24.4% in 2021 to 21.6% in 2022 and 21.5% in 2023, dropping further to 19.8% in 2024. Despite this positive progress, these figures still call for accelerated efforts through interventions that are effective, innovative, and sustainable, while also actively involving the community. Promotive and preventive approaches are crucial, as stunting prevention must not be limited to the toddler years but needs to begin prior to pregnancy and continue throughout the first 1,000 days of life (Badan Kebijakan Pembangunan Kesehatan, 2025a, 2025b)

At the community level, Posyandu (Integrated Health Post) cadres (community health volunteers) are key figures in efforts to prevent stunting. They play a vital role in monitoring the growth of children under five, disseminating health and nutrition information, providing family support, and acting as a liaison between health workers and the community. However, the successful execution of these roles depends heavily on the cadres' capacity to acquire, comprehend, and accurately convey health information. Limited access to information resources that are structured, practical, easy to understand,

and reusable poses a challenge to strengthening cadre capacity (Ariyanti et al., 2025; Pratiwi et al., 2025).

Digital transformation offers opportunities to address some of these issues. Digital health applications can provide information quickly and flexibly in an interactive format that users can access repeatedly as needed. Various studies have developed and utilized digital media to support stunting prevention—including educational materials, health information apps, and learning platforms for community health workers and the general public. These studies indicate that digital technology has the potential to enhance users' knowledge, skills, and engagement in efforts to prevent stunting (Dahlan, 2026; Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional (Kementerian PPN/Bappenas) & United Nations Children's Fund (UNICEF), 2024; Muchlisa et al., 2026)

However, there are limitations in previous research and development regarding digital media for stunting prevention. Some digital media focus primarily on delivering information or education about stunting to specific target groups, whereas the integration of prevention materials based on life stages—along with the specific needs of cadre (community health workers)—has not been extensively evaluated. Furthermore, prior studies have tended to assess media effectiveness based on changes in knowledge, attitudes, or skills, while the experiences and satisfaction of cadre as direct app users remain under-researched. Yet, user satisfaction levels can determine acceptance, ease of use, and the likelihood of the application being used sustainably within public health service activities.

In response to these needs, the SI CETING (Stunting Prevention Information System) application was developed as a

digital information and education tool specifically designed to support cadre in acquiring and disseminating stunting prevention information. Unlike digital media that generally focus on delivering general stunting information or targeting specific groups, SI CETING integrates prevention materials based on life stages—ranging from adolescence or the preconception period and pregnancy to infancy (0–6 months) and early childhood (6–24 months). The content covers topics such as early initiation of breastfeeding (IMD), exclusive breastfeeding, lactation management, complementary feeding (MP-ASI), maternal nutrition during breastfeeding, immunization and infection prevention, and parenting and developmental stimulation; it also includes educational videos and material summaries. This integration is a key characteristic of SI CETING, as it is designed not merely as an information source but as a support tool enabling kader to engage in self-directed learning and provide ongoing stunting prevention education to the community.

While the use of digital media for stunting prevention has seen significant development, previous research has largely focused on evaluating changes in knowledge, attitudes, or skills. Evaluations regarding the experiences and satisfaction of cadre as direct users remain limited, particularly concerning applications that integrate stunting prevention education across various life stages. User satisfaction is crucial for assessing technology acceptance, as it reflects perceptions regarding ease of use, interface design, information quality, educational value, and the application's overall effectiveness. Therefore, this study aims to analyze the satisfaction of health volunteers regarding the use of the SI CETING application as a medium for information and education on stunting prevention in Leminggir Village,

Mojosari District, Mojokerto Regency. The study's novelty lies in its evaluation of the volunteers' experience with a stunting prevention application that comprehensively integrates educational materials spanning from the preconception phase to the first 1,000 days of life; the findings can thus serve as a basis for refining the application to better align with the needs of both the volunteers and the community.

METHOD

This study employed a quantitative descriptive design to evaluate the satisfaction of Posyandu cadres regarding the use of the SI CETING application as a medium for information and education on stunting prevention. The study was conducted with Posyandu cadres in a rural community. The study population consisted of all active Posyandu cadres who had undergone training on the SI CETING application and had experience using it in health education activities. A total of 31 cadres met the inclusion criteria, and all were recruited using a total sampling technique. Inclusion criteria included being an active Posyandu cadre, willingness to participate in the study, and prior use of the SI CETING application. Respondents who did not complete the questionnaire were excluded from the analysis.

This study obtained research ethics approval (Number 254/KEP/UBS-PPNI/VII/2026). Prior to data collection, all respondents were informed about the study's objectives, procedures, benefits, and their rights as participants. Participation was voluntary, and respondents provided their consent. The confidentiality of respondents' identities and information was maintained, and the data were used solely for research purposes.

Data collection took place after the respondents had received training and used the SI CETING application. User

satisfaction was measured using a structured questionnaire consisting of 24 items. The instrument was developed based on the DeLone and McLean Information Systems Success Model—specifically the aspects of system quality, information quality, perceived benefits, and user satisfaction—adapted to the characteristics of a health education application. The instrument covered six indicators: ease of use, app appearance, information quality, educational benefit, effectiveness of use, and user satisfaction.

Each item was rated using a 4-point Likert scale: 4 = Strongly Agree, 3 = Agree, 2 = Disagree, and 1 = Strongly Disagree. No neutral option was provided, in order to encourage respondents to express a clearer tendency in their assessment of each statement. With 24 items, the total score ranges from 24 to 96, where higher scores indicate a higher level of user satisfaction.

Prior to data collection, the instrument underwent validity and reliability testing. Validity testing ensured that each item effectively measured the specific aspects of user satisfaction under study, while reliability testing assessed the instrument's internal consistency. The reliability test yielded a Cronbach's alpha value of 0.958, indicating excellent internal consistency. Thus, the instrument demonstrates excellent reliability for measuring the satisfaction of cadre regarding the use of the SI CETING application.

Satisfaction levels were interpreted based on the scores obtained by respondents. As the instrument utilized four response options, satisfaction levels were classified as Very Dissatisfied, Dissatisfied, Satisfied, and Very Satisfied. Applying equal score intervals, the 24–96 range was divided into four categories with an interval width of 18, resulting in the following classifications: 24–41 = Very Dissatisfied; 42–59 =

Dissatisfied; 60–77 = Satisfied; and 78–96 = Very Satisfied. Data analysis was conducted using descriptive statistics—specifically frequencies, percentages, mean values, and standard deviations—appropriate to the data characteristics.

RESULTS

This study involved 31 Posyandu cadres in Leminggir Village, Mojosari District, Mojokerto Regency, who had used the SI CETING (Stunting Prevention Information System) application as a medium for information and education regarding stunting prevention. Cadre satisfaction was measured after using the application via a 24-item questionnaire utilizing a 4-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree.

The distribution of cadre satisfaction levels regarding the use of the SI CETING application is presented in Table 1.

Table 1. Distribution of Cadre Satisfaction Levels Regarding the Use of the SI CETING Application (n = 31)

Level of Satisfaction	Frequency (n)	Percentage (%)
Very Satisfied	7	23
Satisfied	24	77
Dissatisfied	0	0
Very Dissatisfied	0	0
Total	31	100

Based on Table 1, 24 respondents (77%) were in the quite satisfied category and 7 respondents (23%) were in the very satisfied category. There were no respondents in the dissatisfied or dissatisfied categories.

To provide a more detailed picture, descriptive statistical analysis was carried out on the satisfaction questionnaire scores consisting of 24 items. Analysis includes

average (mean), standard deviation (SD), minimum score and maximum score.

Table 2. Descriptive Statistics of Cadre Satisfaction Scores regarding the SI CETING Application (n = 31)

Statistics	value
Number of respondents	31
Number of items	24
Theoretical minimum score per item	1.00
Theoretical maximum score per item	4.00
Overall item mean	3.137
Minimum item mean	3.0645
Maximum item mean	3.2581

The analysis results indicate that the overall average score across the 24 items is 3.137. Item mean scores range from 3.0645 to 3.2581, with the highest mean being 3.2581 and the lowest 3.0645. All items have a minimum score of 3.00 and a maximum of 4.00.

DISCUSSION

The study shows that all respondents rated the SI CETING application positively: 24 health workers (77%) fell into the "satisfied" category and 7 (23%) into the "very satisfied" category, with no respondents falling into the "less satisfied" or "dissatisfied" categories. These findings reflect a positive user experience among the group of health workers using SI CETING within the context of the study. However, these results should be interpreted with caution, as the study evaluated only user satisfaction and did not measure improvements in knowledge, behavioral changes, application effectiveness, implementation success, or health outcomes. The WHO emphasizes that digital health interventions must be evaluated based on various aspects—including benefits, acceptance, feasibility, resource

requirements, equity, and the readiness of the health ecosystem—and that digital technology cannot be viewed as a substitute for a well-functioning health system. (World Health Organization, 2019).

The relatively high level of satisfaction may be related to the suitability of SI CETING's characteristics to the practical needs of cadres. The application provides structured stunting prevention materials in a single medium, starting from the preconception period, pregnancy, infants aged 0–6 months, to children aged 6–24 months, as well as materials on exclusive breastfeeding, complementary feeding, immunization, care, and growth and development stimulation. The availability of centralized materials allows cadres to obtain information more practically and re-access it during educational activities. In the context of mHealth, the match between application functions and user needs is a critical aspect of technology acceptance. The WHO reports that the acceptance and feasibility of digital interventions by health workers are influenced by user characteristics, work context, ease of use, and the readiness of the support system (World Health Organization, 2019).

These findings align with the study by Nkurunziza et al. (2026) involving community health workers in rural Rwanda. That study demonstrated that usability and acceptability are crucial aspects of mHealth evaluation, as applications failing to align with users' needs and workflows are more difficult to integrate sustainably. Nkurunziza et al. also emphasized the importance of tailoring evaluation instruments and designs to the education levels, languages, characteristics, and work contexts of community health workers. These findings suggest that the health volunteers' satisfaction with SI CETING is likely linked not only to the use of digital technology but also to how well the application's content

and functions align with their tasks in providing health education (Nkurunziza et al., 2026).

The results of this study can also be compared with the research by Erika et al. (2024) regarding a "Stunting Super App" in Indonesia. That study developed the SEHATI application as an educational tool for stunting prevention and management and conducted a pilot test to evaluate its usage. The primary difference between the two studies lies in the outcomes assessed. Erika et al.'s study focused on changes in user knowledge, whereas the SI CETING study focused on the satisfaction of health volunteers using the application. Thus, the two studies offer distinct perspectives: knowledge evaluation provides insights into potential educational benefits, while satisfaction evaluation offers information regarding the user experience with the application. Consequently, user satisfaction cannot serve as a substitute for measuring educational effectiveness (Erika et al., 2024).

Theoretically, the findings of this study can be understood using the Technology Acceptance Model (TAM) developed by Davis (1989). TAM explains that technology acceptance is primarily related to perceived usefulness and perceived ease of use (Davis, 1989). In the context of SI CETING, the structured presentation of material, mobile accessibility, and the alignment of content with the activities of cadres could theoretically foster the perception that the application is easy to use and beneficial. However, these two constructs were not directly measured in this study. Therefore, the Technology Acceptance Model (TAM) serves as an interpretive framework rather than an empirically tested model. Future research should measure perceived usefulness, perceived ease of use, attitude, and usage intention to identify the factors

statistically associated with the acceptance of SI CETING. The study's findings can also be understood through the DeLone and McLean Information Systems Success Model, which identifies system quality, information quality, service quality, usage, user satisfaction, and net benefits as components for evaluating information system success (Delone & McLean, 2003). In this study, satisfaction was one of the aspects of user experience evaluated; however, the study did not measure the entire construct within the model. Consequently, the findings cannot be used to draw conclusions regarding the overall success of SI CETING as an information system. The DeLone and McLean framework is more appropriately applied to explain the role of satisfaction as a component of system evaluation.

Beyond application characteristics, contextual factors likely influenced the health workers' assessments. The respondents had received training and possessed experience using SI CETING in educational activities. This training likely aided their understanding of the application's functions and mitigated obstacles during the initial stages of use. The alignment of the application's content with the health workers' tasks may also have contributed to a positive user experience. This aligns with research by Nkurunziza et al. (2026), which indicates that evaluating mHealth applications for community health workers requires considering the application's fit with the work environment, as well as factors such as learnability, navigation, and functionality. Thus, the satisfaction observed in this study likely stems from the interplay between application characteristics, usage experience, training, and the health workers' work context. (Nkurunziza et al., 2026).

The highly positive distribution of satisfaction scores requires cautious

interpretation, as it may be influenced by social desirability bias, response bias, or the novelty effect—particularly given that the respondents had received training and the assessment took place after they had used the application. This study also has limitations, including a relatively small sample size (31 health volunteers), a single study location, a descriptive design, and the reliance on self-reported satisfaction data; consequently, the findings cannot be generalized to other communities. Furthermore, the study did not measure improvements in knowledge, behavioral changes, implementation effectiveness, sustained usage, or health outcomes. Therefore, these findings should be viewed as preliminary evidence of the health volunteers' positive experience with SI CETING, while future research should involve larger samples and multiple locations, employ analytical or longitudinal designs, and measure objective indicators such as knowledge, skills, sustained usage, and health outcomes.

CONCLUSIONS

This study indicates that the SI CETING application received a positive assessment from health volunteers as a medium for information and education regarding stunting prevention. These findings provide preliminary evidence regarding the volunteers' experiences and satisfaction with using SI CETING within the study context. However, the results cannot yet be used to draw conclusions about the application's effectiveness in increasing knowledge, changing behavior, improving volunteer performance, or generating health impacts. Further research utilizing more robust designs and objective indicators is required to evaluate the effectiveness, sustainability of use, and impact of SI CETING in supporting stunting prevention efforts.

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