

THE USE OF ANDROID-BASED SIMADU (POSYANDU INFORMATION SYSTEM) APPLICATION IN BEJI

La Ode Abd Rahman¹, Hanny Handiyani¹, Shanti Farida Rachmi¹, Friska², Vergeina Ayu³, Fakhri M & Rizaldi⁴

¹Department of Fundamentals of Nursing and Basic Nursing Universitas Indonesia

²Akademi Keperawatan Al-Ikhlas Cisarua Bogor

³Department of Nursing Specializing in Nursing Leadership and Management Faculty of Nursing Science Universitas Indonesia

⁴Universitas Indonesia Hospital

Thriving technology, information, and communication drive mobile health development to induce changes in health service delivery. The Android-based SIMADU application is a substitute for the manual and conventional administration system. It encourages Posyandu cadres to use the android-based application, which is considered more productive, and thereby making Posyandu activities more efficient. This research is discussing the Android-based SIMADU application. Method used is a descriptive survey, carried out in Posyandu Flamboyan, Mawar, Cempaka, and Kenanga, all addressed in Kukusan Beji Depok West Java. Data collection techniques are observation and questionnaire distribution. The sample is 25 cadres from Posyandus in Kukusan Beji. The results is 78.1% of Posyandu cadres advocate the use of the SIMADU application. 68.8% of Posyandu cadres entail an engineer who can assist them to use the SIMADU application. The SIMADU application features are attested to be effective to elevate Posyandu cadres' confidence by 71.9%. The conclusion, use of technology and information in Posyandu may breed a significant change in health service delivery. The SIMADU application can help Posyandu cadres in Posyandu activities, e.g., recording and documenting the data of families, pregnant women, babies, toddlers, and fertile couples.

Keywords: Posyandu Information System Application; Android

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*) Corresponding author:
Email: laode.abdul@ui.ac.id

1. Introduction

Technology is rapidly changing the world, and over three decades. The fast development of technology, information, and communication has fostered mobile health development and produces a big change in health service delivery (Chen, Chai, Dong, Niu, and Zhang, 2018; Raman, 2017).

Currently, data of children's growth and development as the fundamentals of children's nutritional status assessment are manually recorded in KMS (Kartu Menuju Sehat) or Cohort Register book, bringing on adversities if the records are not available when Posyandu activities are being carried out (Liliana and Absari, 2018). The Android-based application developed can be a substitute for the conventional and manual administration system so recording the data of babies, immunization schedules, and early childhood development can be easily and quickly conducted using the Android application in smartphones. Accordingly, Posyandu activities

become more efficient, motivating mothers to use the smartphone application, which is considered more productive.

The Android-based technology, information, and communication have a good impact on maternal and child health (KIA). The mobile health intervention is more effective and demonstrates a negative result by 43% and a positive one by 57%. Functions embodied by the mobile health intervention are diverse and the health stages are relatively broad (Chen *et al.*, 2018). Website applications are accessible for all registered users, especially Puskesmas and Posyandu workers, who will assist you in data entry (Nurwasito and Savitri, 2018). Meanwhile, mobile applications are accessible for all Posyandu members and helpful in distributing the activity information, recording childrens' activities, and reminding the members of schedules. This study was conducted to examine the use of Android-based SIMADU application.

2. Method

The method used is a descriptive survey through field studies/visits (assistance) performed on July 17th-November 22nd, 2019 in Posyandu Flamboyan, Mawar, Cempaka, and Kenanga in Kukusan Beji Depok West Java. Data collection techniques are observation and questionnaire distribution. The questionnaire used is SUS (System Usability Scale) to investigate the use of SIMADU application by Posyandu cadres, especially in Posyandu Flamboyan, Mawar, Cempaka, and Kenanga in Kukusan Beji Depok West Java. The SIMADU application is an Android-based application for recording and documenting data of families, pregnant women, babies, infants, and fertile couples. The SIMADU application is designed to help Posyandu cadres record and document data.

3. Results and Discussion

After assisting cadres from Posyandu Flamboyan, Mawar, Cempaka, and Kenanga in Kukusan Beji Depok West Java and evaluating the use of SIMADU application, we perceive their positive responses. About 78.1% of, or 22 Posyandu cadres advocate the use of the SIMADU application. Approximately 68.7% of, or 22 Posyandu cadres perceive easiness in using the SIMADU application for Posyandu activities.

To integrate the SIMADU application into Posyandu activities, an engineer is warranted. S/he will be in charge of repairing the application system if any issues in data input are found. The two arguments are aligned with 68.8% of, or 22 Posyandu cadres, who assert that cadres call for helps from an engineer who can make them able to operate the SIMADU application smoothly.

About 80% of, or 24 Posyandu cadres clarify that features of the SIMADU application are well integrated.

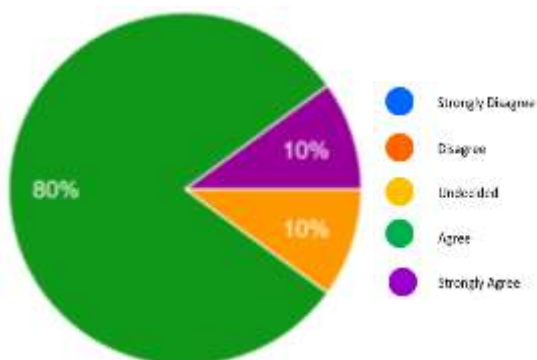


Figure 1. Integrated Features of the SIMADU Application

Features of the SIMADU application are appealing for Posyandu cadres, arising their spirit for learning the application and increasing self-confidence levels regarding the application use by 80%.

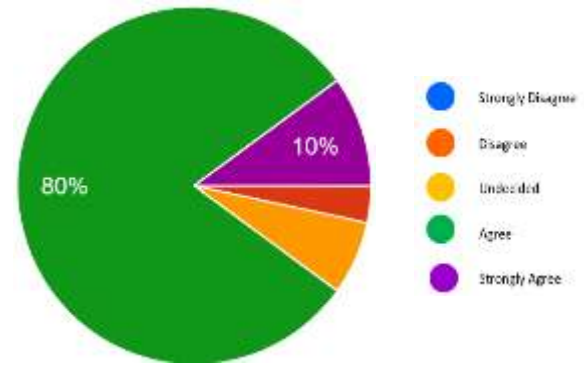


Figure 2. SIMADU Application in Drawing Interests

Internet instability in the assisted area makes the SIMADU application error while it is being used and impacts data storage. Data inputted will not be able to be stored in the firebase. The problems spur the cadres to perceive that they need to learn how to fix errors in the SIMADU application if any. Results point out that 76.7% of the Posyandu cadres agree that they should learn anything related to the SIMADU application before integrating the application into Posyandu activities.

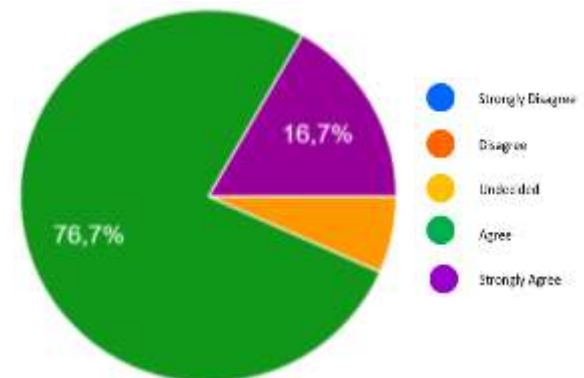


Figure 3. Need for Application Learning

After acquiring assistance and simulation, the cadres perceive a huge benefit from the SIMADU application. Using the application, they can monitor the growth and development of babies and infants simply by opening the application on smartphones and report the activity result easily. The easiness is confirmed by 70% of the Posyandu cadres who disagree with the perception that the SIMADU application is difficult to use.

66.7% of the Posyandu cadres confirm that features of the SIMADU application help them comprehend how to use the SIMADU application.

The integrated Posyandu system is one of the administration and documentation systems which can accommodate and allow the Posyandu cadres to report various Posyandu activities easily, in which the end result of the report is in an Excel format.

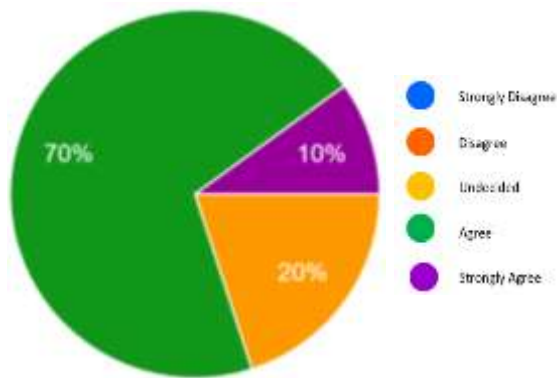


Figure 4. Easiness of the SIMADU Application

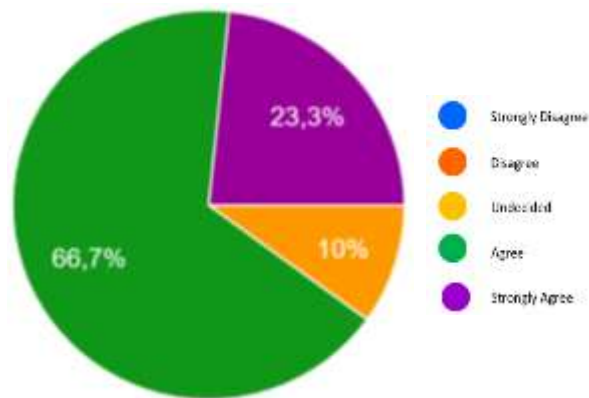


Figure 5. Easy-to-Understand Features of the SIMADU Application

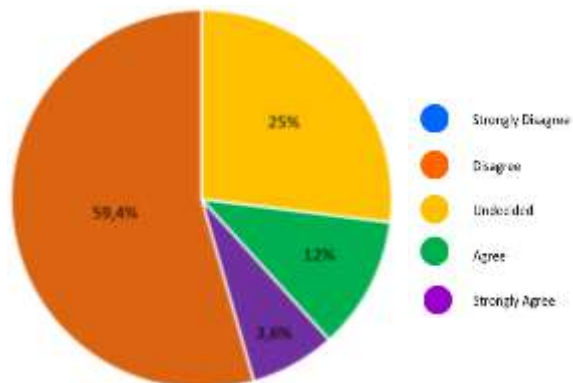


Figure 6. Inconsistency of the SIMADU Application

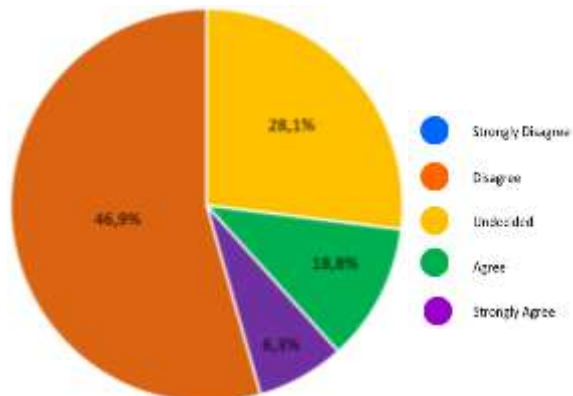


Figure 7. Burdensome Application Features

Improving the quality and use of an information system is of import. Easiness and efficiency offered by the SIMADU application may contribute to effective service delivery and the optimization of Posyandu cadres' functions and roles by applying the Android-based SIMADU application system.

To enable the Posyandu cadres to use the SIMADU application easily, simple and understandable features and tools are demanded. The features or tools of the application are presented in either understandable writing or picture/symbol form. They can broaden the cadres' insights and knowledge of the application (Deharja and Permatasari, 2016). The easy features and tools propel cadres to learn how they can integrate the application into Posyandu activities. Absari and Liliana (2018), commensurate with the assertion, declare that an application system entails good design and analysis processes.

Besides the integrated and easy-to-use features of the SIMADU application, a skillful engineer which can manage the application is needed. The engineer will help fix the application system if problems or errors occur during data input (Haque, Ebron, Bailey, and Blumenfeld, 2018). An engineer is a key factor to the efficient application management workflow (Allen, Escoffery, and Satsangi, 2015; Haque, *et al.*, 2018).

During the assistance, several challenges hamper the use of the SIMADU application. One of the challenges is unstable internet in the assisted area. The SIMADU application can only be used with the internet network, whose instability will affect the application performance. As the consequence, data inputted cannot be stored in the database. The unstable internet network impacts not only the use of the Android-based application but also the process of community business and economy (Wahab, 2016). Therefore, the internet network is a vital component for personal communication which can be used to increase the effectiveness and efficiency of operating and administrative activities (Maulidia, Rochimah, and Affandi, 2013; Wahab, 2016).

4. Conclusions and suggestions

Predicated on the research results, the use of technology and information in Posyandu may generate a big change, notably in health service delivery. The SIMADU application allows effective and efficient recording and documentation of the data of families, pregnant women, babies, infants, and fertile couples. The SIMADU application has been used in four Posyandus and is expected to be used in all Posyandus in Kukusan. Furthermore, the current SIMADU application, which is operated online, can be developed into an offline application.

5. References

Absari, D. T., & Liliana. (2018). Pemanfaatan Teknologi Informasi Dalam Mendukung Posyandu Terkait

- Dengan Tumbuh Kembang Anak. *TEKNIKA*, 7(November), 122–128.
- Allen, C. G., C. Escoffery, A. Satsangi, and J. N. B. (2015). Strategies to Improve the Integration of Community Health Workers into Health Care Teams: “A Little Fish in a Big Pond.” *Preventing Chronic Disease*, 12.
- Chen, H., Chai, Y., Dong, L., Niu, W., & Zhang, P. (2018). Effectiveness and appropriateness of mhealth interventions for maternal and child health: Systematic review. *JMIR MHealth and UHealth*, 6(1), 1–12. <https://doi.org/10.2196/mhealth.8998>
- Deharja, A., & Permatasari, V. (2016). *Peningkatan Pengetahuan dan Kreatifitas Kader Melalui Pemanfaatan Teknologi SMS Gateway Untuk Mengoptimalkan Kunjungan Posyandu*.
- Haque, S., Ebron, S., Bailey, B., & Blumenfeld, B. (2018). Use of Health Information Technology among Patient Navigators in Community Health Interventions. *Perspectives in Health Information Management*.
- Liliana, & Absari, D. T. (2018). Pemanfaatan Teknologi gan Tumbuh Kembang Anak. *Lembaga Penelitian Dan Pengabdian Kepada Masyarakat*, 7(2), 122–128.
- Maulidia, N., Rochimah, S., & Affandi, A. (2013). (2013). *Pengembangan Prosedur untuk Optimalisasi Kualitas Sistem & Layanan Jaringan TIK dengan COBIT4.1 dan I TIL.V3*. In *Prosiding Seminar Nasional Manajemen Teknologi XVII Program Studi MMT ITS*.
- Nadia Savitri, Heru Nurwasito (2018) “Pengembangan Aplikasi Mobile untuk Pelayanan Posyandu dengan menggunakan Google Maps Api Geolocation Tagging” *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer* Vol.2, No.1.
- Raman, A. (2017). Health Technology and Nursing Practice. *The Nursing Journal of India*, CVIII, 3.
- Wahab, R. A. (2016). Analisis Perkembangan Internet Broadband di Wilayah Perbatasan Provinsi Sulawesi Utara. *Jurnal Penelitian Pos Dan Informatika*, 6(2), 201–226. <https://doi.org/10.17933/jppi.2016.06020>