

Transforming Adolescent Health Monitoring: Implementing the *e-Rapor Sehatku* in Puskesmas Bojong Rawalumbu"

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Abstract

Keywords:

Digital Health
Adolescent Health
Adolescent Nutrition

Regular health screenings in schools are vital for fulfilling the health rights of Indonesian children. However, the current manual health report cards are inefficient and time-consuming. This community service project aims to address this by developing and implementing a digital health report card, *e-Rapor Sehatku*, at the Bojong Rawalumbu Community Health Center (Puskesmas). This initiative, targeting the Nutrition Implementing Staff (TPG) at Puskesmas Bojong Rawalumbu, involves collaboration between the fields of Nutrition Science and Information Technology. The project includes needs analysis through in-depth interviews and FGD with key stakeholders, application development, and pilot testing. Training for TPG covers data input, processing, presentation, interpretation, and conclusion drawing using the *e-Rapor Sehatku* application. The project began with securing permissions from the Bekasi City Health Office in June 2023. Activities carried out include needs analysis, application design and development, and initial application testing. The needs analysis revealed a strong demand for a digital health reporting system, prompting the development of *e-Rapor Sehatku*. Initial trials with TPG highlighted several functional issues, leading to subsequent refinements and a small class trial. The project successfully identified the need for digital health reporting and developed the *e-Rapor Sehatku* application. Initial trials provided valuable feedback for further refinement. The next steps involve conducting broader user trials within the school community to ensure comprehensive implementation. The implementation of *e-Rapor Sehatku* at Puskesmas Rawalumbu is expected to facilitate regular, efficient, and systematic health screenings, ultimately improving children's health. The digital health report will also enhance communication between parents and teachers, promoting greater parental involvement in their children's health.

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1. INTRODUCTION AND SITUATIONAL ANALYSIS

Based on Keputusan Presiden No. 72 of 2021, Article 3 states that the targets for the acceleration of stunting reduction are aimed at adolescents, prospective brides, pregnant women, breastfeeding mothers, and children aged 0-59 months [1]. Adolescents are a strategic target for implementing health programs. Every Indonesian child, including adolescents, has the same health rights. One way to fulfill these rights is through

regular health screenings at schools [2]. However, the current health report cards are filled out manually and in book form, which is time-consuming and ineffective [3].

Various health screening applications have started to emerge, such as the Ceria app, which focuses on monitoring adherence to Iron and Folic Acid Tablets (IFA tablets – Tablet Tambah Darah). However, it is not as comprehensive as the printed health report cards. Consequently, the data collected from students is limited. Currently, many students and schools do not yet use the health report cards, resulting in suboptimal health screenings at schools. There is a need for innovation to integrate health report cards into the school curriculum to ensure proper implementation. Data from school screenings is essential not only for students, parents, and schools but also as a basis for determining intervention programs.

This community service aims to assist in implementing the e-Rapor Sehatku at community health centers (Puskesmas), which is a digital, school-integrated health screening system for adolescents. Preliminary surveys and discussions with partners identified several issues hindering the digital implementation of the health report card screenings: 1) Information Technology: There is a need to develop an e-Rapor Sehatku application that transitions from manual to digital health reports; 2) Nutrition: Assistance is required for filling out the digital health report cards by the Nutrition Implementing Staff (TPG) at the Puskesmas. The proposed solutions for this initiative include: 1) Developing an e-Rapor Sehatku application to digitize the manual health reports. 2) Assisting the Nutrition Implementing Staff (TPG) at Puskesmas in using the digital health report cards.

The Bojong Rawalumbu Community Health Center (UPTD Puskesmas Bojong Rawalumbu) is a public health facility located at Jl. Tri Satya Raya, Perum Bumi Bekasi Baru Selatan, Bojong Rawalumbu Village, Rawalumbu District, Bekasi City 17116. This health center addresses various nutritional issues, including adolescent nutrition. Every Indonesian child, including adolescents, has the same health rights. One way to fulfill these rights is through regular health screenings at schools [4]. However, the current health report cards are filled out manually and are in book form, which is time-consuming and ineffective [5]. Presently, many students and schools do not use the health report cards, resulting in suboptimal health screenings. There is a need for innovation to integrate health report cards into the school curriculum to ensure proper implementation.

Referring to the issues faced by UPTD Puskesmas Bojong Rawalumbu regarding the absence of a digital health report card system to replace the cumbersome manual health report cards, this community service initiative focuses on the following activities as solutions: 1) Developing the e-Rapor Sehatku Card application to transition from manual to digital health reports. 2) Assisting the Nutrition Implementing Staff (TPG) at the Puskesmas in using the digital health report cards.

2. METHODOLOGY

This community service project conducted at UPTD Puskesmas Bojong Rawalumbu, targeting one Nutrition Implementing Staff (TPG) at the health center. The project involves a collaboration between the fields of Nutrition Science and Information Technology. The activities will be carried out based on the issues identified at the partner site. The steps of implementation are needs analysis and application design. First, we conduct Focus Group Discussions (FGD) and in-depth interviews with key stakeholders (students, parents, teachers, TPG). Use the findings to inform the development of application features. Next, the application development, consist of perform need analysis, design, development, testing, and maintenance of the e-Rapor Sehatku application. Some of key features will include measurement of weight, height, and nutritional status, growth charts, monitoring of Iron Supplement Tablet (TTD) adherence, mental health assessment, educational content. The last step is the pilot testing.

Training and Implementation the application will cover data input, processing, presentation, interpretation, and drawing conclusions from the data entered into the application. Training materials will include PowerPoint presentations and the application itself. Based on the issues identified in the situational analysis and previous research, the community service team will conduct the following activities: 1) Conduct FGDs and in-depth interviews with stakeholders to determine application features. 2) Develop the application through a structured process of analysis, design, development, testing, and maintenance. Features will include measurements, growth charts, TTD adherence, mental health, and educational content. 3) Perform testing in three stages: initial user testing, small class testing, and broader respondent trial.

3. IMPLEMENTATION AND DISCUSSIONS

The community service activities began with obtaining permission from the Bekasi City Health Office in June 2023, as Puskesmas Bojong Rawalumbu is within the Bekasi city limits. The activities carried out include: 1) Need analysis and application design; 2) Application development; 3) Initial application testing.

Needs Analysis

The community service project started with in-depth interviews and Focus Group Discussions (FGD) for needs analysis. An in-depth interview was conducted with the Nutrition Implementing Staff (TPG) at Puskesmas Bojong Rawalumbu, Ms. Alvia Soliah, S.Gz, on August 10, 2023. The interview revealed that not all content in the health report book is easily understood. Additionally, TPGs often handle large amounts of data, highlighting an urgent need for digital health reporting, especially for adolescents. A practical, easy-to-use, and accessible program is necessary to facilitate health reporting, particularly to the health department.



Figure 1. Needs Assessment at Puskesmas Bojong Rawalumbu and the Bekasi City Health Office

Ms. Soliah's views were echoed by the Nutrition Program Coordinator from the Bekasi City Health Office, Ms. Wiwin Anggraini, S.Gz, during the needs assessment on August 11, 2023. The e-Rapor Sehatku is expected to enhance health services for adolescents. Currently, screenings are conducted annually as part of the minimum service standards (SPM). More frequent updates would ensure real-time data, improving program planning based on current data. Needs analysis was also conducted at SMP 41 Bekasi, a school recommended by Puskesmas Bojong Rawalumbu for the pilot project.



Figure 2. Need Assessment at SMP 41 Kota Bekasi

During the FGD with parents and students at SMP 41 Bekasi on August 23, 2023, it was concluded that the e-Rapor Sehatku could serve as a communication tool between parents and teachers regarding health. According to Natalia (2022), this reporting can be a promotive and preventive activity for children [2][9]. Stakeholders, from the health office to students, expressed strong support and enthusiasm for the e-Rapor Sehatku innovation. Regular, efficient health screenings can help reduce diseases caused by poor self-care, ultimately improving children's health.

e-Rapor Sehatku Development

The e-Rapor Sehatku includes features for measuring weight, height, and nutritional status, growth charts, adherence to Iron Supplement Tablets (TTD), mental health, discussion forums, reporting, notifications, multiple user roles (TPG, teachers, students, parents, and the health office), and educational videos on adolescent health. The application can be accessed at <http://www.e-raporsehatku.com/>.

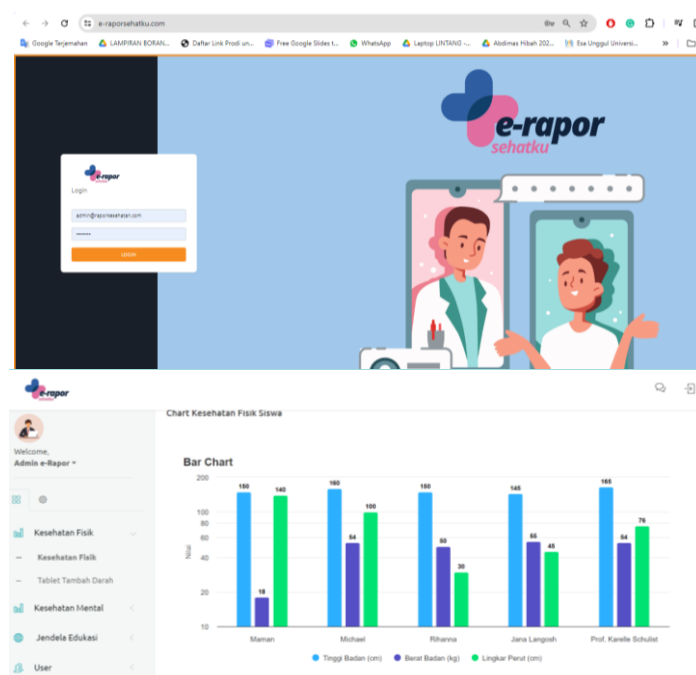


Figure 3. e-Rapor Sehatku application

According to Leonita (2018), technology facilitates health promotion and intervention, reaching targets at all levels [10]. The e-Rapor Sehatku was developed with features based on the needs analysis, including weight, height, and nutritional status measurement, Growth charts, Waist circumference measurement (to prevent PTM risks), TTD adherence, Mental health assessment, Adolescent health education Multiple user roles (students, parents, teachers, nutrition staff).

Implementation Trial

To ensure all features function correctly, the implementation trial included three stages: Initial testing with 1-3 respondents, involving the community service team and TPG. This stage tested the application with health center staff, focusing on essential features.

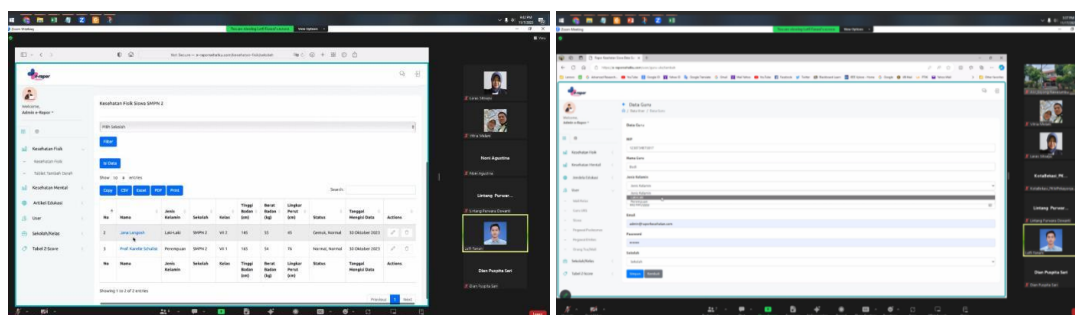


Figure 4. Limited Trial

The initial trial on November 17, 2023, revealed issues with data updates and inputs. Teacher roles occasionally encountered errors when entering student names, and the health center role could not update the education window. Most other features functioned correctly. Necessary improvements will be made before the next trial stage. The next stage, a small class trial with 10-15 respondents, took place on November 24, 2023. Application refinements were made based on the initial trial results.



Figure 5. Assisted Trial of e-Rapor Sehatku Implementation

4. CONCLUSION AND RECCOMENDATION

4.1 Conclusion

The completed activities in this community service series include: 1) Needs analysis for the digital e-Rapor Sehatku application; 2) Development of the e-Rapor Sehatku application; 3) Assisted implementation trial of the e-Rapor Sehatku. The needs analysis revealed an urgent requirement for digital health reporting, particularly for adolescents. Consequently, the e-Rapor Sehatku application was developed and initially tested with the Nutrition Implementing Staff (TPG) at Puskesmas Bojong Rawalumbu. The trial identified several features that were not functioning correctly. The next step is to conduct user trials within the school community.

4.2 Saran/Rekomendasi

With the implementation of the e-Rapor Sehatku at Puskesmas Rawalumbu, Bekasi City, West Java, it is expected that health screenings can be conducted regularly, efficiently, and systematically. Regular health screenings can help reduce illnesses caused by poor self-care, aiming to improve children's overall health. Additionally, the e-Rapor Sehatku is anticipated to serve as a communication tool between parents and teachers, particularly regarding health, enabling parents to be more involved and informed about their children's health status.

REFERENSI

- Badan Pusat Statistik. Data dan Informasi Kemiskinan Kabupaten/Kota di Indonesia 2022. Direktorat Statistik Ketahanan Sosial, editor. Jakarta: Badan Pusat Statistik; 2022.
- Efendi NF, Sitoayu L, Nuzrina R, Purwara L. Hubungan intervensi gizi spesifik dalam program gerakan 1000 HPK terhadap kejadian stunting pada baduta di wilayah kerja Puskesmas Jatiluhur Purwakarta The relationship between specific nutrition interventions in the 1000 HPK program. *Ilmu Gizi Indones*. 2021;05(01):61–70.
- Indonesia P. Peraturan Presiden No. 72 Tahun 2021 Tentang Percepatan Penurunan Stunting. Lembaran Negara Ri. Sekretariat Negara. Jakarta. 2021.
- Leonita E, Jalinus N. Peran Media Sosial dalam Upaya Promosi Kesehatan : Tinjauan Literatur. *J Inov Vokasional dan Teknol*. 2018;18(2):25–34.
- Mulazimah; Ikawati, Yani; Nurahmawati D. Upaya Peningkatan Kesehatan melalui Program UKS Penjaringan Kesehatan Anak Usia Sekolah Dinas Kesehatan Kota Kediri. *Kontribusi*. 2021;2(1):1–8.
- Munthe RD, Brata KC, Fanani L. Analisis User Experience Aplikasi Mobile Facebook (Studi Kasus pada Mahasiswa Universitas Brawijaya). *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*. 2018;2(7):2679-88.
- Natalia S, Anggraeni S. Skrining Kesehatan Anak Sekolah sebagai upaya deteksi Kesehatan sejak dini. *J Community Engagement Heal*. 2022;5(1):47–50.
- Palutturi S. Pentingnya Politik Bidang Kesehatan. *J AKK*. 2013;2(3).
- Prathama GI, Fanani L, Brata KC. Perancangan User Experience Sistem Informasi Klinik berbasis Aplikasi Mobile menggunakan Pendekatan Design Thinking (Studi Kasus: Klinik Dr. Maya). *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*. 2022;6(12):6068-80.
- Sitoayu,Laras; Nuzrina, Rachmanida; Rumana NA. Aplikasi SPSS untuk Analisis Data Kesehatan: Bonus Analisis Data dengan SEM. Pekalongan, Jawa Tengah: PT. Nasya Expanding Management (Penerbit NEM); 2020.