

SISTEM MONITORING PEMBERIAN MAKANAN TAMBAHAN BALITA BERBASIS WEB DI DESA KARANG REJO

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ABSTRACT

Toddlerhood is a critical period in a child's growth and development that significantly affects future health and cognitive outcomes. Adequate nutritional intake during this stage is essential to prevent growth disorders, particularly stunting. The Indonesian government has implemented various intervention programs, including the Supplementary Feeding Program (*Pemberian Makanan Tambahan/PMT*), to improve toddlers' nutritional status and reduce stunting, especially in areas with high nutritional challenges. In Karang Rejo Village, the PMT program is actively implemented through community health posts (*posyandu*). However, the management of PMT data, including beneficiary records, monitoring of weight and height, and feeding schedules, is still conducted manually. This manual approach leads to data inaccuracies, difficulties in tracking historical records, potential data loss, and delays in reporting. In addition, the lack of integrated data hinders health workers and cadres from conducting effective and regular monitoring, which may impact the accuracy of nutritional interventions for toddlers at risk of stunting. To address these issues, this study proposes the development of a web-based monitoring system for the PMT program. The system is designed to facilitate structured data recording, periodic monitoring of toddlers' nutritional status, and real-time reporting accessible to authorized users. The implementation of this system is expected to improve the effectiveness and efficiency of PMT services, support timely decision-making, and contribute to government efforts in reducing stunting rates and improving the overall health status of toddlers in Karang Rejo Village.

Keywords: *Web- Based Monitoring System, Supplementary Feeding Program (PMT), Toddler Nutrition, Stunting Prevention, Public Health Information System.*

1. INTRODUCTION

Toddlerhood is a golden period of a child's growth and development that greatly determines future health and cognitive quality. During this stage, toddlers' nutritional needs must be optimally fulfilled to prevent growth disorders, one of which is stunting. The Indonesian government, through the Health Office, has implemented various intervention programs, including the Supplementary Feeding Program (*Pemberian Makanan Tambahan/PMT*) for toddlers. This program aims to improve nutritional status and prevent cases of undernutrition and stunting, particularly in areas that still experience relatively high nutritional problems[1]. Karang Rejo Village is one of the villages actively implementing the PMT program for toddlers, primarily through community health posts (*posyandu*) as village-level health service centers. However, in practice, the recording of PMT beneficiaries, monitoring of toddlers' weight and height development, and scheduling of PMT distribution are still carried out manually using logbooks. This procedure has several weaknesses, such as a high risk of recording errors, difficulties in retrieving data, potential data loss, and delays in reporting to relevant stakeholders, including village midwives and local government authorities[2].



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Furthermore, the absence of data integration makes it difficult for health cadres and officers to conduct accurate and regular monitoring. The lack of accurate and up-to-date data may affect the precision of interventions provided to toddlers who require special attention, particularly those at risk of stunting. If this condition persists, the monitoring of toddlers' growth and development cannot be conducted optimally[3].

Considering the rapid development of information technology, particularly web-based information systems, their utilization represents a potential solution to address these challenges. A web-based system enables fast and structured data processing and allows authorized personnel to access information at any time. In addition, real-time reporting of toddlers' nutritional development can facilitate village authorities in making timely decisions to improve the quality of the PMT program. Therefore, it is necessary to develop a web-based Monitoring System for the Supplementary Feeding Program (PMT) for toddlers that can support the recording of PMT beneficiary data, periodically monitor nutritional status, and generate more accurate and integrated reports. The implementation of this system is expected to make PMT services more effective and efficient, as well as support government efforts to reduce stunting rates and improve the overall health status of toddlers in Karang Rejo Village.[4].

2. METHODS

The research methodology consists of several structured and systematic stages to support the development of a web-based monitoring system for the Supplementary Feeding Program (PMT) for toddlers in Karang Rejo Village. The research begins with a system requirements analysis, which involves identifying and analyzing data related to the PMT implementation process, including the recording of PMT beneficiaries, monitoring of toddlers' weight and height growth, feeding schedules, and reporting mechanisms. Data collection is conducted through direct observation of PMT activities at community health posts (*posyandu*), interviews with health cadres, village midwives, and related stakeholders, as well as literature studies to obtain relevant references on nutritional monitoring systems and web-based health information systems. This study aims to design and implement a web-based monitoring system that supports the management of PMT data in an integrated manner. The system is designed to facilitate the recording of toddler data, periodic monitoring of nutritional status, scheduling of supplementary feeding, and generation of reports that can be accessed by authorized users. By utilizing a web-based platform, the system enables more accurate, efficient, and structured data processing compared to manual recording methods. The developed system is expected to improve the effectiveness of monitoring toddlers' nutritional development, enhance data accuracy, and support timely decision-making in PMT implementation. Real-time access to updated data allows health cadres and village authorities to identify toddlers who require special attention, particularly those at risk of stunting, and to provide appropriate interventions more promptly. The research framework includes several stages: system requirements planning, system design, development of the web-based PMT monitoring system, and system testing and evaluation. These stages are carried out to ensure that the developed system functions properly, meets user needs, and effectively supports the implementation of the PMT program in improving toddler health outcomes in Karang Rejo Village.

Method Rough Set

After the system analysis stage, the system design phase is carried out as a follow-up step to address the identified problems in the implementation of the Supplementary Feeding Program (PMT) for toddlers. System design is a crucial stage in the development of a web-based PMT monitoring system in Karang Rejo Village. This phase aims to improve the effectiveness and efficiency of PMT data management and monitoring processes, which were previously conducted manually, by making them more structured, accurate, and well-integrated. During the design stage, the required system components are organized to ensure that the application operates according to user needs.



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The system design includes the design of toddler data management, PMT beneficiary records, monitoring of weight and height development, scheduling of PMT distribution, and reporting features for health cadres, village midwives, and village authorities. With a well-structured design, the developed system is expected to reduce data recording errors, facilitate regular and accurate monitoring of toddlers' nutritional status, and support the effective presentation of integrated reports to assist decision-making in improving the quality of the PMT program.

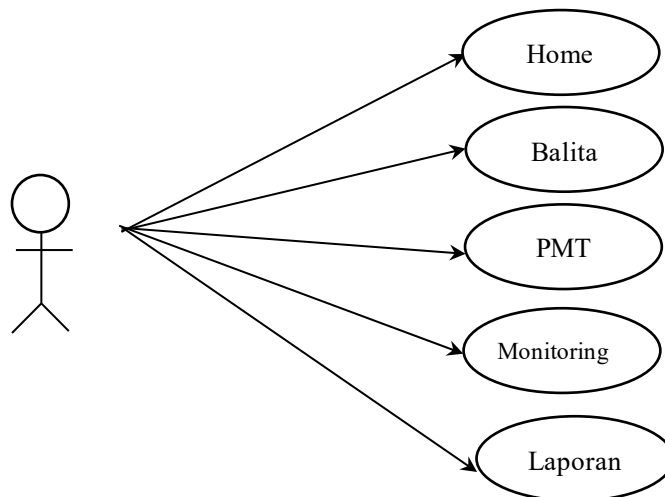


Figure 1. Use Case Diagram

This diagram illustrates the interaction between the user (administrator or health officer) and the main features of the web-based PMT monitoring system, including Home, Toddler Data (Balita), PMT Data, Monitoring, and Reporting modules. The diagram shows how users can access and manage each function to support the monitoring and reporting of the PMT program for toddlers.

1. The home page interface can be seen as shown in the following figure:



Figure 2 Halaman Home

At the system testing stage, the home page interface is implemented as part of the Web-Based Monitoring and Reporting System for Supplementary Feeding (PMT) for Toddlers in Karang Rejo Village. This page serves as the main interface that provides access to toddler data management, PMT monitoring, and report generation features for authorized users.

2. The balita page interface can be seen as shown in the following figure:

No	Nama Balita	Nama Orang Tua	Aksi
1	Ahmad Fauzan	Siti Aminah	Edit Hapus
2	Aisyah Putri	Nurhayati	Edit Hapus
3	Muhammad Rizki	Rahmawati	Edit Hapus
4	Zahra Aulia	Dewi Sartika	Edit Hapus

Figure 3 Halaman Balita

This page presents the toddler data interface in the Web-Based PMT Monitoring System, which functions to manage toddler information used in PMT monitoring and reporting activities.

3. The bukti data PMT entry page display can be seen as shown in the following figure:

No	Nama Balita	Jenis PMT	Tanggal
1	Ahmad Fauzan	Bubur Kacang Hijau	2026-01-04

Figure 4 Halaman Data PMT

This page shows the PMT distribution data in the Web-Based PMT Monitoring System, which is used for recording and monitoring supplementary feeding activities for toddlers.

4. The data Monitoring page interface can be seen as shown in the following figure:

No	Nama Balita	Berat (Kg)	Tinggi (Cm)	Status Gizi	Tanggal
1	Ahmad Fauzan	11.2	86.5	Normal	2026-01-04

Figure 5 Halaman Data Monitoring

This page is used to monitor the implementation of the PMT program and the nutritional development of toddlers through an integrated web-based system.

5. The dashboard admin page interface can be seen as shown in the following figure:

No	Nama Balita	Total PMT	Monitoring Terakhir
1	Ahmad Fauzan	1	2026-01-04
2	Aisyah Putri	0	
3	Muhammad Rizki	0	
4	Zahra Aulia	0	

Figure 6 Halaman Laporan

CONCLUSION

Based on the results of the system design and implementation, the web-based Monitoring System for the Supplementary Feeding Program (PMT) for toddlers in Karang Rejo Village has proven to be an effective solution in addressing the problems of manual data recording and monitoring previously encountered in the PMT implementation process. The developed system is capable of managing PMT beneficiary data, monitoring toddlers' weight and height development, and organizing feeding schedules in an accurate, structured, and integrated manner.

The implementation of the system demonstrates significant improvements in data accuracy, efficiency of monitoring activities, and timeliness of reporting. Real-time access to updated nutritional data enables health cadres, village midwives, and village authorities to monitor toddlers' nutritional status more effectively and to identify those at risk of stunting more promptly. Overall, the web-based PMT monitoring system supports better decision-making, enhances the effectiveness and efficiency of PMT services, and contributes to government efforts in reducing stunting rates and improving the health status of toddlers in Karang Rejo Village.



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