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Computerized Website-Based Health Recording of Pregnant Women

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Abstract— Posyandu is a forum for community empowerment to obtain basic health services, one of which is controlling the health of pregnant women by recording health in a register book. These records are used as a guide for pregnant women and as a reference for midwives to control the health of pregnant women during pregnancy until delivery. Currently, it is still found that recording is carried out manually, namely written in the register book of pregnant women. This results in the data not being able to be read properly, as well as data processing being difficult and the resulting reports being inaccurate. This research aims to design and build a website-based computerized system for recording and processing pregnant women's health data which is expected to speed up and make it easier for cadres and midwives in the process of recording, data processing and reporting. This type of research is descriptive research using observation and interview data collection methods and using a cross sectional approach. The subjects in this research were cadres and midwives, while the object of this research was recording and processing data on pregnant women. Using the System Development Life Cycle (SDLC) system development method, namely the system design and creation process as well as the methodology used to develop the system.Computerized website-based health records for pregnant women were built using the PHP programming language and a MySQL database with input data for pregnant women, staff data (cadres and midwives), and examination data. The resulting output is a pregnant woman's report, an officer's data report, a monthly examination data report and a chart of the development of pregnant women. This system can be accessed by cadres, midwives and pregnant women. Cadres can enter and edit data on pregnant women, officer data, examination data and reports. Midwives can edit and add examination data and view all reports. Meanwhile, pregnant women can see their own history of examination data.
Keywords— Posyandu, Pregnant Women's Health Registration, Website

I. BACKGROUND

Posyandu is a community empowerment forum in the form of a Village/Kelurahan Community Institution which is initiated by the village/kelurahan government together with the community and managed by the community to make it easier for the community to obtain basic health services (Ministry of Health, 2017). One of the basic health service activities carried out at posyandu is controlling the health of pregnant women which can be done by recording in the Maternal and Child Health (KIA) book. The purpose of these records is as a guide for pregnant women and as a reference for midwives to carry out controls to maintain the health of pregnant women during pregnancy until delivery, as well as to monitor the progress of pregnancy each month.

The service activities of the Kemuning 4 Sondakan Laweyan Surakarta posyandu, especially for pregnant women, have been seen to be going well. However, there are still several obstacles, namely in terms of recording, processing data and reporting data on pregnant women. Recording is still done manually using handwriting, so data on the development of pregnant women cannot be read properly unless the officer records the data. Because the data cannot be read properly, officers sometimes make mistakes in calculating data such as calculating the Expected Birth Day (HPL) and making reports on posyandu activities, especially for pregnant women, which results in the resulting reports being inaccurate and inaccurate. Apart from that, reporting activities are still carried out manually, namely cadres write on paper and submit it to the midwife and then report it to the community health center. Based on the background explained above, the problem formulation in this final assignment is how to build computerized website-based health records for pregnant women at Posyandu Kemuning 4 Sondakan Laweyan. Benefits Helps facilitate posyandu cadres in recording and processing data, especially health data for pregnant women at Posyandu Kemuning 4 Sondakan Laweyan Surakarta.

System development is a tool to guide and direct information system developers in terms of analysis, design, implementation and evaluation and maintenance of information systems designed by these developers. Information systems development is an organized standard process consisting of:

1. Analysis
2. Design
3. Implementation, and
4. Treatment

II. METHOD

Furthermore, system development, especially information systems, generally uses the System Development Life Cycle (SDLC) methodology. System Development Life Cycle (SDLC) is a general methodology in system development that marks the progress of analysis and design efforts. SDLC includes the following phases:

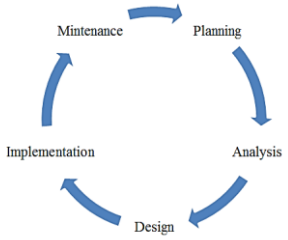

Fig. 1 SDLC Model

The system development method used is the System Development Life Cycle (SDLC). System development in this way focuses on the methods and techniques used. This SDLC method is often referred to as the problem solving process, the steps are as follows:

1. Project Identification and Selection

   At this stage several things are done, namely identifying potential projects, classifying and ranking projects, and selecting projects to develop. At this stage the researcher conducts a preliminary survey to identify problems, obstacles that occur and expected needs so that improvements to the existing system can be proposed.

2. Planning (Project Initiation and Planning)

   In this stage the potential information system is explained and a thorough work plan is prepared to carry out the other stages. After conducting a preliminary survey by identifying problems with the flow and procedures for recording data on pregnant women, then looking for a solution to solve the existing problems by building a website-based Pregnant Women's Health Recording System at Posyandu Kemuning 4 Sondakan Laweyan Surakarta using the PHP programming language and MySQL database.

3. Analysis (Analysis Stage)

   The analysis stage is the stage where the current system is studied and a replacement system is proposed. In this stage, researchers study the old system by collecting information by means of observation and interviews. Based on a preliminary survey, Posyandu Kemuning 4 Sondakan Laweyan Surakarta requires a posyandu information system to replace the manual system with an electronic one and can be accessed efficiently by cadres, midwives and pregnant women.

4. Design

   The design stage is the stage of changing requirements that are still in the form of a concept into a real system. The system design stage can be divided into two, namely: logical design and physical design.

5. Implementation (Implementation)

   At this stage, program design is implemented by coding the program, testing the program and improving the program. After passing the trial, the system can be implemented at Posyandu Kemuning 4 Sondakan Laweyan Surakarta.

6. Maintenance

   At this stage the system will be systematically repaired or upgraded. The result of this stage is a Website-Based Pregnant Women's Health Recording System at Posyandu Kemuning 4 Sondakan Laweyan Surakarta which can be operated so it is hoped that the system can be used according to needs.

III. RESULTS AND DISCUSSION

System Design

System design is the design of the entire system design consisting of Data Flow Diagrams (DFD), database design, input design, output design, operations and screens.

1. Data Flow Diagram (DFD)

Data Flow Diagrams (DFD) consist of context diagrams, tiered diagrams, DFD Level 0 and DFD Level 1.

a. Context Diagram

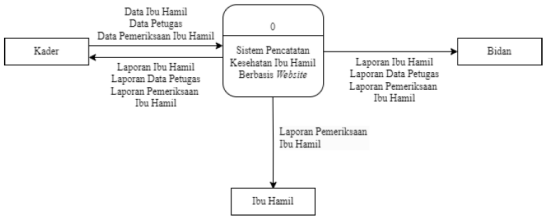

Fig. 2 Website-Based Context Diagram for Pregnant Women's Health Recording System 70

The Description of Figure 2:

Based on Figure 4.3 Context Diagram of the Website-Based Pregnant Women's Health Recording System at Posyandu Kemuning 4 Sondakan Laweyan Surakarta, the cadres input data on pregnant women, officer data and data on examinations of pregnant women into the website-based health recording database for pregnant women. After all the data has been entered, a data report appears, namely a data report for pregnant women, an officer data report and an examination data report for cadres, midwives and pregnant women.

2. Data Base Design

a. Table Relations

A table relationship is a relationship that describes the relationship between storage in a database. The relationship between tables in this research can be seen as in the image below:

Fig. 3 Database System

3. Interface Design

The interface design is a design that will be displayed in the menus of the computerized program for recording the health of pregnant women at Posyandu Kemuning 4 Sondakan Laweyan Surakarta. The following is a display of the main menu design and input form design for the health recording system for pregnant women at Posyandu Kemuning 4 Sondakan Laweyan Surakarta.

a. Login Form Design

The following is the design of the login form for the website-based pregnant women's health recording system:

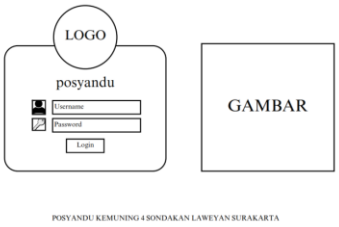

Fig. 4 Login Form Design

b. Data Input Design

The following is the master data design for pregnant women for a website-based pregnant women's health recording system:

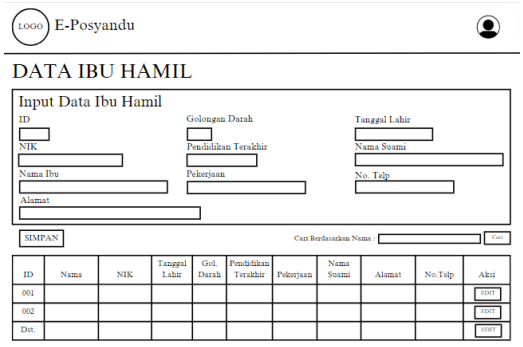

Fig. 5 Data Input Design

Result

System implementation is the stage of implementing the system that will be carried out if the system is approved and included for operation. Implementation of the Computerized Health Recording System for Pregnant Women at Posyandu Kemuning 4 Sondakan Laweyan Surakarta is as follows:

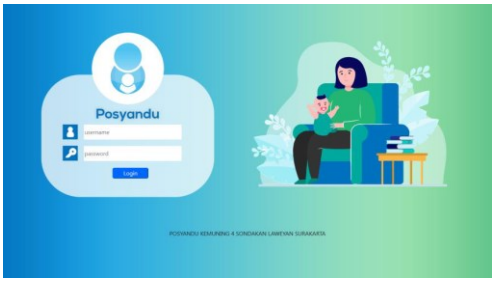

Fig. 6 Login

In the examination data there is a history and examination chart for each pregnant woman. There are 4 graphs, namely graphs measuring body weight, height, uterine fundus, and upper arm circumference (LILA). Select the name of the pregnant woman whose examination history will be displayed then click show data.

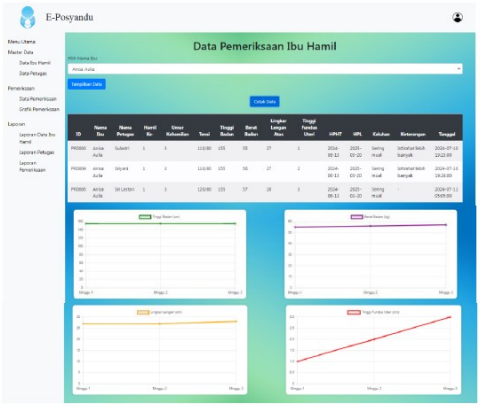

Fig. 7 History and Examination Chart of Pregnant Women

IV. CONCLUSIONS AND SUGGESTIONS

Computerized website-based health records for pregnant women at Posyandu Kemuning 4 Sondakan Laweyan Surkarta were built using the PHP programming language and MySQL database, where this system is expected to speed up the process of recording, processing and reporting data. The data entered is data on pregnant women, data on officers (cadres and midwives), and data on examinations. The output produced is in the form of reports, namely pregnant women's data reports, officer data reports, monthly examination data reports and pregnant women's progress charts. This system can be accessed by cadres, midwives and pregnant women. Cadres can enter and edit data on pregnant women, officer data, examination data and reports. Midwives can edit and add examination data and view all reports. Meanwhile, pregnant women can see their own history of examination data.

REFERENCES

[1] Fadhillah, R. N., Parulian, D., & Surajiyo. (2023). Design and development of a data processing system at Posyandu Garuda Cibinong. Journal of Informatics Student Research and Application, 418-425.
[2] Fajarwati, R. N. (2023). Web-based examination application for pregnant women at the Suwarti, STr., Keb Midwifery Practice, Ngawi. Universitas Duta Bangsa Surakarta.
[3] Fitri, R. (2020). Database programming using MySQL. Poliban Press.
[4] Hurhayati, A., Arif, Y. T., & Setyawati, A. (2021). Optimization of Posyandu services through electronic medical records. Proceedings of the National Seminar on the Dies Natalis of UTP Surakarta, 93-100.
[5] Irianto, A. B., & Primasari, C. H. (2021). Learning database. Griya Pustaka Utama.
[6] Mulyati, S., & Ridwan. (2023). Design and development of a web-based Posyandu service information system at Posyandu Matahari 17 in Bumi Asri Tangerang. Journal of Engineering, 163-169.
[7] Ministry of Health of the Republic of Indonesia. (2017). Technical guidelines for community-based basic health services at Posyandu. Ministry of Health of the Republic of Indonesia.
[8] Ministry of Health of the Republic of Indonesia. (2022). Regulation of the Minister of Health Number 24 of 2022 concerning medical records. Ministry of Health of the Republic of Indonesia.
[9] Ministry of Health of the Republic of Indonesia. (2022, July 22). Balanced nutrition for pregnant women. Yankes Kemkes. Retrieved January 9, 2024, from https://yankes.kemkes.go.id/view_artikel/405/gizi-seimbang-ibu-hamil
[10] Ministry of Health of the Republic of Indonesia. (2023). Health profile of Indonesia 2022. Ministry of Health of the Republic of Indonesia.
[11] Ministry of Health of the Republic of Indonesia. (2023). Mother and child health book. Ministry of Health of the Republic of Indonesia.
[12] Notoadmojo, S. (2018). Health research methodology. Rineka Cipta.
[13] Nugroho, A. S. (2017). Analysis and design of information systems. Trans Tekno.
[14] Oktapiani, R., & Kusnadi, I. T. (2021). Design of database systems and their application in information systems. Teknosain.
[15] Putra, C. A. (2018). Designing websites using Dreamweaver. Teknosain.
[16] Rerung, R. R. (2018). Basic web programming. Deepublish Publisher (CV Budi Utama).
[17] Sugiarsi, S. (2019). Instruments and data analysis of medical record research and health information management. APTIRMIKI.
[18] Sugiyono. (2019). Quantitative, qualitative, and R&D research methods. Alfabeta.
[19] Trisyanto. (2017). Analysis & design of database systems. Garuda Mas Sejahtera.
[20] Untari, I., Prananingrum, R., & Kusudaryati, D. D. (2017). Posyandu toddler cadre handbook. Yuma Pustaka.
[21] Yani, D. P., & Zakiah. (2018). Midwifery care during pregnancy. Pustaka Panesa.