Decision Support System for Choosing the Best Nurse Using the Multi Factor Evaluation Process (MFEP) Method at Djoelham Hospital, Binjai City

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ARTICLE INFO	ABSTRACT
Keywords: Nurse Decision Support System, Multi Factor Evaluation Process	Health workers are any person who is devoted to health and has knowledge and/or skills through education in the health field which for certain types requires the authority to carry out health efforts. A strategy is needed to increase the interest of health workers working in hospitals. The selection of exemplary health workers in hospitals is expected to be a motivation to increase the interest of health workers working in hospitals so that they can be a driver for the creation of health workers who have a nationalist, ethical and professional attitude, have a high spirit of service, are disciplined, creative, knowledgeable, skilled, virtuous and can uphold professional ethics. The purpose of this study is to evaluate the performance of nurses and reward the best nurses at Djoelham Hospital Binjai City. The use of the Multi Factor Evaluation Process (MFEP) method is relevant because it can help in integrating and evaluating various factors and criteria holistically. MFEP is a method that allows to evaluate various factors that affect decisions, as well as provide weight or value relative to each of these factors. The criteria used in this study are discipline, cooperation, loyalty, education, understanding of drug prescriptions, understanding of technology. The conclusion of this study is that the construction of this support system can help Djoelham Hospital in determining the best nurse and the use of the MFEP method in the decision support system to determine the best nurse increases accuracy in determining the best suitable nurse. This method is able to process various criteria that have been set, so that the results of decisions are more objective and fair compared to manual assessments.
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INTRODUCTION

Health workers are any person who is devoted to health and has knowledge and/or skills through education in the health field which for certain types requires the authority to carry out health efforts. A strategy is needed to increase the interest of health workers working in hospitals. The selection of exemplary health workers in hospitals is expected to be a motivation to increase the interest of health workers working in hospitals so that it can be a driver for the creation of health workers who have a nationalist, ethical and professional attitude, have a high spirit of service, are disciplined, creative, knowledgeable, skilled, virtuous and can uphold professional ethics (Ramadiani and Rahmah 2019).

General Hospitals (RSUs) are health institutions that need high-quality nurses to provide optimal services to patients. The selection of the best nurse is very important because the role of nurses is vital in providing quality health services. However, the process of selecting the best nurse is not always easy to do because it involves various factors and criteria that must be considered, such as academic qualifications, work experience, clinical expertise, interpersonal skills, and so on.

The use of *the Multi Factor Evaluation Process* (MFEP) method is relevant because it can help in integrating and evaluating various factors and criteria holistically. MFEP is a method that allows to evaluate various factors that affect decisions, as well as provide weight or value relative to each of these factors.

With the existence of a decision support system using the MFEP method in selecting the best nurses at the hospital, it is hoped that the management of the hospital can optimize the decision-making process by comprehensively considering various relevant factors. This is expected to increase efficiency and effectiveness in choosing the best nurses, so as to be able to improve the quality of health services provided to patients. In addition, the use of decision support systems is also expected to provide transparency and

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accountability in the nurse selection process, as well as help in reducing the potential for subjective bias that may arise in decision-making.

Several studies have been conducted on the decision support system for nurse selection. One of them is the research "Decision Support System for Employee Performance Assessment of Dr. Hadrianus Sinaga Hospital Using the Multi Factor Evaluation Process Method". The conclusion of this study is that by using this decision support system, the selection of outstanding employees at Dr. Hadrianus Sinaga Hospital becomes more effective and efficient and closes the possibility of fraud. From the results of the system test and data analysis, A8 (Sumihar Tamba) received the highest score with an evaluation weight of 81 and the lowest A4 (Lenni Simbolon) with an evaluation weight of 70.75 (Situmorang and Manurung 2021).

METHOD

The research method is an overview of the steps so that research can be carried out in a structured manner, so a framework is prepared from the beginning to the achievement of the final result. The stages of the research methodology are explained in general terms as follows:

1. Literature Survey. This stage is to collect literature materials and information related to the research title.
2. Literature Study. Studying the literature that will be used as a theoretical study in this study.
3. Hypothesis. The initial question was how to select the best nurse at the DJOELHAM Hospital in Binjai City.
4. Field Observation and Licensing. Conducting a search for data sources and permits to competent parties.
5. Data Processing. The form of processing data to make the data useful according to the desired results so that it can be used. Data Analysis, analyzing the results of data processing based on the results of existing research and theory.
6. Draw conclusions. Conclusions are drawn based on data analysis and checked whether they are in accordance with the purpose and objectives of the research.

RESULTS AND DISCUSSION

The implementation of the decision support system (SPK) for the acceptance of the selection of the best nurse using *the Multi-Factor Evaluation Process* (MFEP) method involves several key steps.
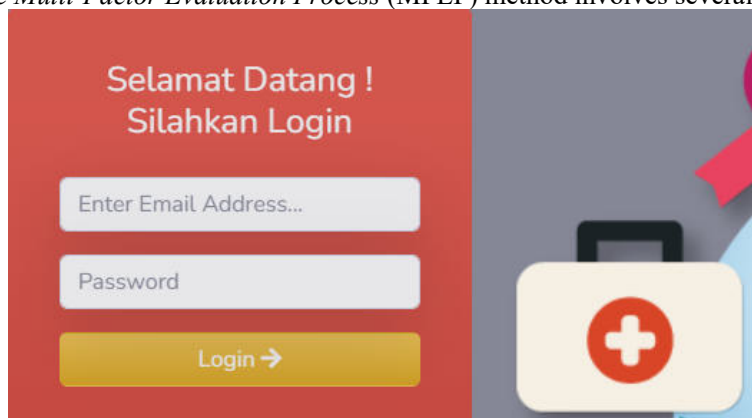

Figure 1. Form Login

This form is a login form to open the program application where there is a username and password input done by an admin.

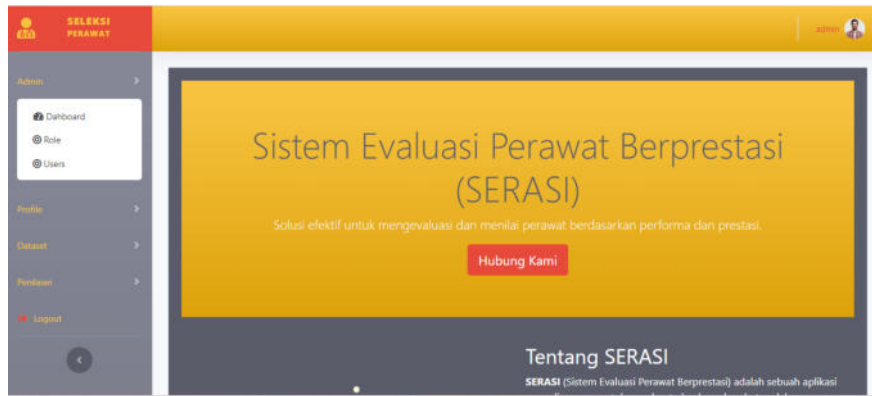*Decision Support System for Choosing the Best Nurse Using the Multi Factor Evaluation Process (MFEP) Method at Djoelham Hospital, Binjai City – Yulia Ningsih, et.al*

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Figure 2. Main Menu Form

In this form are some of the criteria needed to determine the best nurse.

Figure 3. Best Nurse Criteria Form

Refined criteria are standards or benchmarks that are used as a basis for making decisions or judgments. Here is a breakdown of the criteria for determining the best nurse

Figure 4. Form Filtered Criteria

In this alternative form, it is the input of data to determine the best nurse as shown in the picture below.

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Figure 5. Alternative Forms

In this analysis form, it is the result of inputting the best nurse data and the weight that has been converted to the number of values from each alternative in each criterion. As seen in the image below:

Figure 6. Analysis Form

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Figure 7. Data Normalization Form

After carrying out the process, it will automatically generate a ranking form to determine the best nurse who is the most qualified nurse recipient among the best nurse recipients available so that the decision to select the best nurse meets the criteria.

Figure 8. Form Ranking

Discussion

The following are the results of the implementation of the decision to determine the best nurse application.

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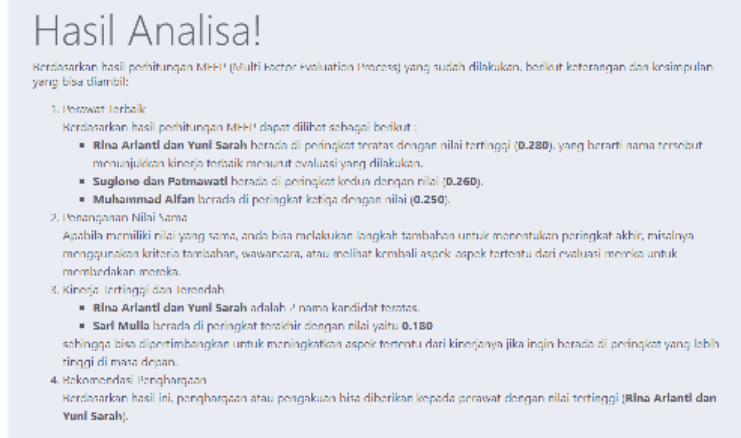
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Figure 9. Results

From the results of the MFEP calculation that can be seen in figure IV.9 above, it can be concluded that from the 10 nurse data that has been processed in the MFEP method calculation, the best nurses 1, 2, 3, 4 and 5 are obtained as an alternative with the highest value of 1, meaning that the best nurses 1, 2, 3, 4 and 5 are the main choices in determining the best nurses. The inference mechanism with *the Multi Factor Evaluation Process* (MFEP) method for the decision support system for determining the best nurse has simple stages because it uses logical expressions and rules using the following steps:

1. Step 1, alternative input or nurse data
2. Step 2, select the calculation button
3. Step 3, the analysis results appear and see the calculation results
4. Step 4, the system can select the data of the employee with the existing data

The commands in the program that the author created are also quite easy to understand because users only need to click on the buttons that are already available according to their needs.

CONCLUSION

With the construction of this support system, it can help Djoelham Hospital in determining the best nurses. The use of the MFEP method in the decision support system to determine the best nurse improves the accuracy in determining the best qualified nurse. This method is able to process various criteria that have been set, so that the results of decisions are more objective and fair compared to manual assessments. The system designed with the MFEP method allows for systematic management of nurse data. This makes it easier for Djoelham Hospital to monitor and evaluate nurses and nurse standards at the hospital, as well as provide convenience in the decision-making process.

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