

Decision Support System Software for Normal Pregnancy, in Maritime Medicine, Setting for Costal Situation, Recommended for Making A Decision Support System for Diving Fishermen

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ABSTRACT

Background: The coastal situation in Indonesia with thousands of islands and its area, the use of Ultra Sono Graph (USG) as a tool for general practitioners will be useful to facilitate examinations, consult with experts, and make referrals easily and quickly.

Objective: For ultrasound readings that require decisions, using the Decision Support System makes it easier and there are friends to discuss, indirectly with experts, even machines.

Theoretical Basis: DSS is very important to clarify and speed up decision-making with the help of software and computers.

Use Process: The ultrasound software will guide and direct the appropriate diagnosis so that decisions can be made or referred and handled quickly and precisely. DSS will be very useful in preventing accidents among diving fishermen, by using the P02 benchmark which is easy to use.

Conclusion: The use of the Decision Support System for normal and abnormal pregnancy ultrasound is beneficial for coastal area support for early diagnosis and implementation of a referral system. By looking at examples of use like this, it is recommended to create a Decision Support System for Diving Fishermen.

Keywords: DSS, Normal Ultrasound, Pregnancy, Coastal Areas, Early Diagnosis, Referral System, Diving Fishermen

Introduction

Due to the coastal situation in Indonesia with thousands of islands and vast areas, so many coastal there, so the use of ultrasonography (USG) as a tool for general practitioners will be useful for facilitating examinations, consulting with experts, and making referrals easily and quickly [1]. The use of ultrasound in coastal areas will be useful because it will provide speed, time, accuracy, and transfer of knowledge between general practitioners and obstetricians. If you use the Decision Support System, obstetrics experts can help general practitioners in coastal areas carry out studies and make appropriate and fast referrals.



Figure 1: Coastal In Indonesia

Review of Literature

The clinical decision support system is designed to help health workers in primary care in order or produce clinical decisions related to the examination of pregnant women who perform routine ANC (Ante Natal Care) examination or pregnant women

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who come into service with the primary complaint with either symptoms or signs [2]. The result or outcome of the clinical decision support system is a form of advice on the management of treatment or examination and also suggestions to do references of treatment or examination. Analysis and Design Systems, and verification from obstetricians and seminars to finalize its shape. Routine examination involves: (1) input data, in general, which includes patient data such as symptoms and signs, (2) physiological and pathological description, (3) differential diagnosis or problem, (4) up to the problem itself as well as further suggestions. The research design is the quasi-experimental post-test only without control; in stage I: Analysis and Design System, in stage II: Prototype, and in stage III: Application. The verification is needed by a specialist in Obstetrics for the Analysis and System Design is an effort to describe and design a system according to the needs which constitute a way to perform conformity assessment with specific benchmarks as a diversification process [3]. The use of DSS will benefit from three sectors:

1. Range far and wide will be very helpful because being close to us;
2. An unlimited time, day and night, 24 hours, 7 days a week, throughout the year; make it easier for ready for use anytime;
3. Difficult and rare expertise that can be met, but remain in the capacity of thought or competence, so that appropriate action can be immediately implemented. The following is an overview of the Development of software one type of development used is thematic analysis, from theory to software creation, and the benefits obtained [4,5].

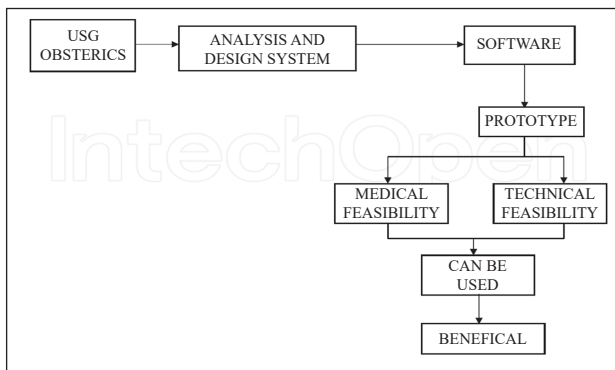


Figure 2: Development of Software

Materials and Methods

Usage Process-1 – Guided function

Software on ultrasound will guide function which is a function that tries to be a director toward goals, in this case, related to directing the appropriate diagnosis, so that decisions can be made or referred to and can be handled quickly and accurately [6]. The method used as a DSS is to provide a choice of what should be chosen according to the existing conditions and the specified thickness required, the picture is as follows [7].

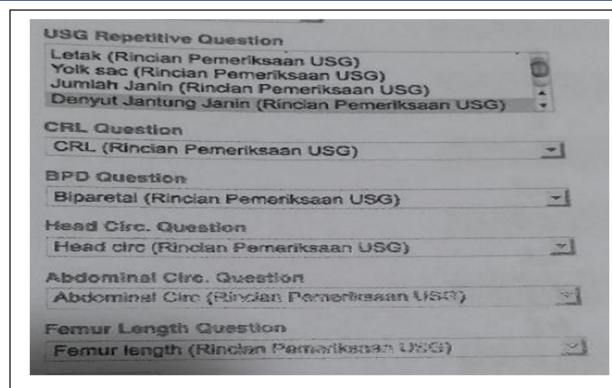


Figure 3: Guided Function

Usage Process-2 – Normal and Abnormal Pregnancy

The software will guide normal and abnormal conditions of pregnancy to determine whether a condition is normal or whether it is a disease, so it can be decided to be handled by General Practice or referred to a specialist doctor so that early diagnosis can be made easily [8]. In this image, options are shown that can be made according to the ultrasound image that appears, in this case, you just have to make the necessary choices to determine what you should get [9].

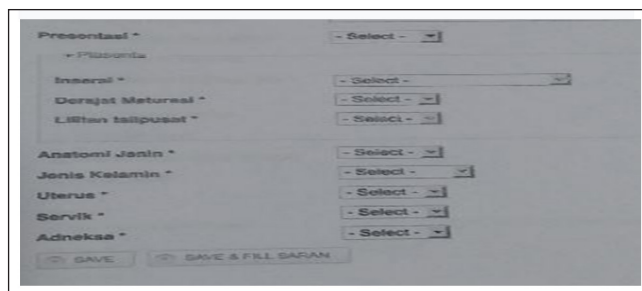


Figure 4: Normal and Abnormal Pregnancy

Usage Process-3 – Referral Form

In cases where there is sufficient time for consideration, problems can be noted in advance and prepared for consultation in a planned manner. In this way, better results will be obtained, because they have been prepared. It can also be done within a certain period if the case is not an emergency, then it is better if you send the material first so that the discussion will be faster and smoother. Below is an example of a referral form, which can be used to carry out referrals in a standardized way, thereby preventing important things from being forgotten or left behind [10,11].

Refferal Date:-----
 Dear Sp.OG Colleagues: -----
 Following Patients:
 Name: ----
 Age: -----
 Diagnosis: -----
 Therapy: -----
 Additional Therapy: -----
 Please provide further Therapy: -----

Figure 5: Referral Form

Discussion

The routine examination involves (1) input data, in general, which includes patient data such as symptoms and signs, (2)

physiological and pathological description, (3) differential diagnosis or problems, (4) up to the problem itself as well as further suggestions [12]. In this case During pregnancy checks, the use of DSS (Decision Support System) plays a role as a tool in providing appropriate recommendations or suggestions based on the data and information entered into the system [13]. DSS can help doctors make more accurate decisions regarding the health condition of pregnant women and the fetus they are carrying. The decision support system is made to be used by physicians, and it contains the pattern of input-process-outcome and its display, so it can be used for the manufacturing of the software. This will be helpful for primary care physicians to avoid late referrals. Regarding the referral system, the use of DSS is useful in determining needs and selecting what is needed. Another opinion Referral systems in using a Decision Support System (DSS) are important because they can help users find information or resources that are relevant and useful in the decision-making process [13]. With a referral system, users can be directed to the best options or solutions based on the data and information collected in the DSS. This allows users to make more accurate and effective decisions based on the recommendations provided by the system. The DSS software that will be created for diving fishermen is an effort to ensure that DSS can be used and is useful for preventing and ensuring that accidents do not occur [14]. It must be tested in the real field so that it can be further assessed to what extent it achieves the objectives. Apart from that, the manufacture and use of this DSS device requires thought and is recommended by experts related to hyperbaric for the use of DSS for diving fishermen, because there are situations that need to be considered professionally to prevent further injury, related to detecting oxygen deficiency. Furthermore, it can be developed in the direction of using a robotic system [15].

Conclusion

Use of the Decision Support System in normal and abnormal pregnancy ultrasound, useful for coastal regions, as support for early diagnosis and implementation of a referral system. By looking at examples of use like this, it is recommended to create a Decision Support System for Diving Fishermen, to prevent injuries due to diving, by creating a Decision Support System that can detect oxygen deficiency early.

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