

A Learning Approach of Pregnancy Hurdles Using Clustering

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ABSTRACT

Data mining describes the discovery of buried facts, and new rules from huge databases. Habitual data analysis methods often involve manual work and understanding of data which is time consuming and costly. Data mining software consists of a number of analytical tools for analyzing data, which popularly called as knowledge invention in large data. It uses variety of tools like questioning and reporting tools, analytical processing tools and Decision Support System. [3]

This article explores data mining techniques in pregnancy. Women are facing several Problems during the pregnancy. The following sections deal with the several concepts. Section1 deals with the Introduction, which deals with theme of the problem. Section2 deals with the Data Collections. Section3 deals with, how the various algorithms implemented on pregnancy health issues. Section4 deals with the weka tools. Section5 consists of the conclusion.

Keywords:- Data mining, pregnancy affected people, clustering algorithms.

I. INTRODUCTION

1.1 HOW DOES PREGNANCY AFFECT A WOMAN?

Nowadays, a lot of women consult doctors during pregnancy to make the delivery to be normal with healthy child. During pregnancy, they are facing several problems such as high stress level, less time for the couples to spend with each other due to their busy schedules and tire some routine work [2]. Some other common signs are:

- Changes in appetite: eating too much or having little interest in food,
- Changes in sleep, such as trouble sleeping or sleeping too much,
- Lack of energy,
- Feeling sad, hopeless or worthless,
- Crying for no reason and
- Loss of interest or pleasure in activities they normally enjoy
- Abnormal pain
- Rising in Sugar and BP levels
- Thyroid problems

1.2. SIGNS OF PREGNANCY AFTER AN IUI

Women who have had an IUI or intrauterine insemination would have several fears in their mind. IUI may not always be successful in women and the distress, going through the procedure and the endless wait to find out whether the women are pregnant or not can be very daunting for a woman who has been trying to conceive for long. While it needs to keep an optimistic mind after an IUI, there are also factors that it can check out to find if they are indeed pregnant and what to expect in the days after an IUI.

Some of the signs of pregnancy after an IUI could be contradictory to a normal pregnancy and hence very scary and misleading.

1.2.1 Bleeding

The misleading sign of pregnancy after an intra uterine insemination is bleeding that resembles menstruation. While heavy bleeding is definitely a cause for concern, light bleeding is normal after an IUI and would mean that the egg has successfully implanted and could be pregnant. They must wait for a couple of days to check the progress and what happens in the coming days. [2]

1.2.2 Cramping

Light abdominal cramping after an IUI would be the implantation pain most women miss as they do not know that they are pregnant at that time. Implantation pain happens when the embryo implants itself inside the uterine wall, making your pregnant. [2]

1.2.4 Breast Tenderness and Changes

Tenderness of the breasts is one of the most noticeable symptoms of pregnancy. Breast tenderness is caused due to the hormone changes that happen in the body and most women immediately notice this change which is associated with pregnancy. The areola of the breast becomes darker due to the hormonal action in the body. [2]

1.2.4 Tiredness

Many women experience extreme tiredness and low energy that comes in the way of their daily activities. Any kind of hormone instability in the body can lead to tiredness

and low energy. This is why pregnancy can lead to tiredness and extreme low energy in many women. [2]

1.2.4 Aches and Pains

As the child gets grows day by day, the women faces back pain, which is one of the common symptom. Also she feels frequent headaches as a result of hormonal changes in the body. [2]

1.2.6 Morning Sickness

Morning sickness is a common symptom for pregnancies. The symptoms and feeling of nausea and vomiting become worse while having food or strong smell too can produce them. [2]

1.2.6 Increased Urination

Pregnancy will lead to some pressure on the walls of the bladder, leading to increased urination in pregnant women. This can be due to urinary tract infections as well. If you are visiting the bathroom way too often, it could mean that you are pregnant. [2]

The above problems affect both the mother and the baby during the delivery. It affects the normal delivery.

II. DATA COLLECTION

In the regard, the questionnaires were prepared after consulting the specialized Gynecologists. It was prepared in Tamil to avoid the hindrances with the illiterate people. Data are collected from various age groups from 15 to 45 and about 650 data were collected from Krishnagiri & Dharmapuri District, in which various problems are analyzed for pregnancy.

Age	Collected data
15 to 25	150
25 to 35	350
35 to 45	150
TOTAL	650

III. CLUSTERING AS THE DATA MINING TECHNIQUE

Clustering is the popular concepts in Knowledge Invention, it is also a very notorious issue and the very meaning of the concept “clustering” may vary a great deal between different scientific disciplines. However, a common goal in all cases is that the objective is to find a structural representation of data by assembling (in some sense) related data items together. A cluster has highly related data in comparison to one another, but is much unrelated to objects in other clusters. [1]

IV. WEKA AS A DATA ANALYZING TOOL

In this article, we have used WEKA, a Data analyzing instrument for clustering techniques. This instrument cans scalable maximum number of rows and columns. The selected software is able to provide the required data mining functions and methodologies. The fitting data format for WEKA data mining software are MS Excel and ARFF formats respectively. However, in the selected data set, the number of columns and the number of records were reduced. [1]

WEKA is developed at the University of Waikato in New Zealand. “WEKA” stands for the Waikato Environment of Knowledge Analysis. The system is written in Java, an object-oriented programming language that is widely available for all major computer platforms and WEKA has been tested under Linux, Windows and Macintosh operating systems. Java allows us to provide a uniform interface to many different learning algorithms. [1]

WEKA has two styles: *experimental and exploration styles*. The exploration method allows easy way to all of WEKA’s data preprocessing, learning, data processing, attribute selection and data visualization section in an environment that encourages initial exploration of data. The experimental style allows larger experiments to be run with results stored in a database for retrieval and analysis. [1]

4.1 Clustering using WEKA

The basic classification is based on supervised algorithms. Algorithms are applicable for the input data. The process of assembling a set of physical or abstract objects into classes of similar objects is called clustering. The Cluster function is also supported which shows the list of machine learning tools. These instruments in general work on a clustering algorithm and run it several times to manipulate algorithm parameters or input data weight to increase the accuracy of the classifier. Two learning performance evaluators are included with WEKA. [1]

The first simply splits a dataset into training and test data, while the second performs cross-validation using folds. Evaluation is usually described by the accuracy. The run information is also displayed, for quick inspection of how well a cluster works. [1]

V. CONCLUSION

Data mining applied in health care domain, by which the people get beneficial for their lives. This research would be the meaningful unknown pattern that from the real data set collected from the pregnancy women at Krishnagiri and Dharmapuri District. By which we can easily know that the people do not get awareness among themselves about the maternal health.

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