

TO PROVIDE THE BEST CARE FOR THE PREGNANT WOMAN AND THE UNBORN CHILD THROUGHOUT HER DELIVERY

Dr.M.Rajeswari,
Assistant Professor,
Department of B.Com(Business Analytics),
PSGR Krishnammal College for Women, Coimbatore, India.
rajeshwarim@psgrkcw.ac.in

M. Farziya Tasneem²,
UG Scholar,
Department of B.Com(Business Analytics),
PSGR Krishnammal College for Women, Coimbatore, India.
farziyatsn4466@gmail.com

ABSTRACT

Maternal health refers to the health of women during pregnancy, childbirth and the period after pregnancy. Maternal health care is facing the emergence of a new range of systems, services, and applications using electronic communication. This objective is to develop an application to provide the best care for the pregnant women and the unborn child throughout her delivery. The important aspect of an application for pregnant women should consider in meeting user needs and being reliable. Using the application as a tool, data related to the users are collected. With that data, Health status of the fetal is analyzed. This application gives various suggestions and tips to take care of themselves and their infant. The important aspect of an application for pregnant women should consider in meeting user needs and being reliable.

Key words- Maternal Health, Fetal Health, Web Application, Complications, Suggestions.

I.INTRODUCTION

Pregnancy is the best period in life in when women get used to a new state and begin to know about new uncertainties and anxieties. Factors like age and overall health status can increase your probabilities of experiencing complications during pregnancy. A good prenatal care and support can help you minimize the complications. The stage of gestation period during pregnancy may carry complications for both the mother and the fetus. Fetal health may be affected by the maternal adaptive changes during this period such as existing health conditions, malnutrition, lifestyle factors etc., Thus, regular observation of fetal and preventive health provided for pregnant woman during this phase is crucially important for maternal and fetal health. Health conditions that can cause risks to the mother or baby include High blood pressure, lung , kidney or heart diseases, Diabetes, etc., This objective is to provide the suggestions that is food control, travel tips and exercises to do during the period of pregnancy.

Objective:

1. To provide the best care for the pregnant woman and the unborn child throughout her delivery

II.RELATED WORK

Akhan Akbulut, Egemen Ertugrul, Varol Topcu has developed a mobile application as a tool for patients to enter clinical history and data, to communicate with a supervisor and to use the prediction via a UI provided in the application. They offered the pregnant user a suitable exercise schedule considering the clinical data of the patient as well as some other factors.^[1]

Nizar Zarka and Mohammad Moayad Mansour, has designed a health care application containing three parts (i.e.) a mobile application, a web application and the web service. The mobile Application was evaluated using Android Studio. The web application is implemented using Code generator framework 3.0, an open-source framework, which was modeled on the Model View Controller.^[2]

Alaa Saleh used a mobile application by synchronizing with web application using the web service where data can be transferred through GPS, 3G or WIFI. This system enables data communication between patients and doctors and saves lot of time and efforts in mobility. They have used SQL to create the database of the web application. The database tables are encapsulated with model, the views are made using HTML, CSS3 and JavaScript. The Bootstrap library, an open source, is used to create user interfaces that can save the data for future use.^[3]

Naughton, Michelle made research on pregnant women with medical risk factors, preterm deliveries, or older age may be at increased risk of cesarean delivery and death during pregnancy, they explored the association between the factors and both method of delivery and case status. The adjusted OR for pregnancy-related death linked with cesarean delivery versus vaginal delivery was 3.9%.^[4]

Yeonkyu Lee, Mikyung Moon, as an important in dictator of fetal health, low birth weight (LBW) and the other risk in pregnancies was predicted via machine learning methods. By using Bayes minimum error rate classifier on Indian health care data, they predicted the fetal status as LBW or NOTLBW with the accuracy of 96.77%.^[5]

Jayashree Piri, Mohapatra made a classification based on association (CBA), a rule-based approach to the cardiocographic analysis of fetal evaluation is suggested, The test findings showed that the classifier model made was 83% and 84% accurate, before and after feature selection respectively for classifying fetal health status.^[6]

Al-Ghraiiri, Assad & Mohammed, Ali & Saeed, Harith created a website designed to provide accessibility with easy manner of perinatal information to the management organizations for instance the Medication and Medicare. This website reduces the mistake in pregnant healthcare, and reduces the cost of delivery of healthcare. The website prepared for the utilization of nurses, physician, pharmacists and another healthcare professionals, and by patients and monitor patients using application.^[7]

Jun Lu, Song Zhang made a work that presents the whole process of development of the self-care management web-app framework that provides instructive supports for future other E-health field application. The report of the web application consists of analysis, design and implementation, and evaluation^[8]

III.METHODOLOGY

WORK FLOW

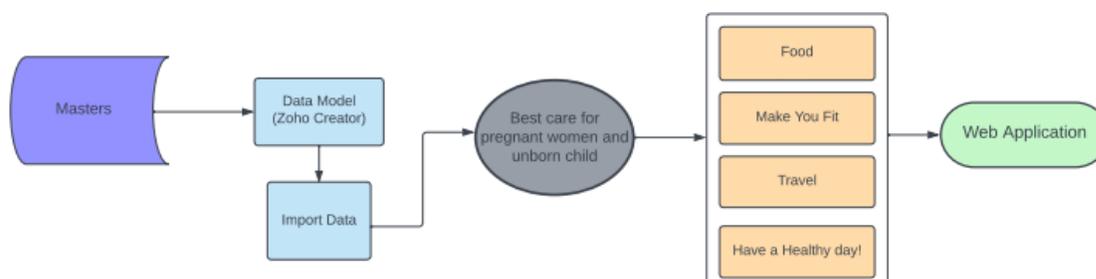


Fig:3.1

A.APPLICATION

This objective is to provide the list of suggestions to mother-to-be for taking care of the unborn child and themselves during the period of pregnancy. The Foods to intake, Exercises to do, Tips for safe travel and a concept of Have a healthy day is done. The Masters dataset with attributes like food intake, sleeping position, travel, etc., are collected. Then the data is linked to a data model which is created using Zoho creator. The application acts as a user interface and receives the input from the user to show the result of Travel, Food, Exercise, and Have a healthy day.

B. HAVE A HEALTHY DAY

This section is to give complete care to the fetal and the mother by providing suggestions regarding foods to intake, sleeping position, fitness and work allowed to do. A healthy mother will be able to have a healthy baby. This application is developed on this motto, which is mother should be healthy to have a healthy baby.

C.FOOD

As a result, this section shows the list of foods to take during pregnancy. Lack of awareness in food and nutrients are the major reasons for fetal and maternal death or these risks leads to high-risk pregnancy complications. Thus, there is an important situation to learn about the risks that may arise before, during or after pregnancy. This part allows the user to know the level of nutrients like iron, calcium, etc., by clicking on the label. Then the attributes like

- nutrients
- reason to take such nutrient and
- the best sources of the nutrients

will be displayed as a result.

D.MAKE YOU FIT

In this section, various exercises that can be done by a mother-to-be is listed. Exercises like swimming, walking, etc. which may be done is listed. In this label, the user (i.e. the pregnant woman) will come to know about the exercises and the time limit that particular exercise can be done which is displayed from the masters' dataset.

E.TRAVEL

In this part, the user, who is the mother-to-be will come to learn about travel. During pregnancy travel is an activity which should be done very safe. Most of the risks of miscarriage, etc., occur due to travel without safe care and precautions. This label gives the details of mode of transport and the reason for the mode of transport.

IV.RESULTS

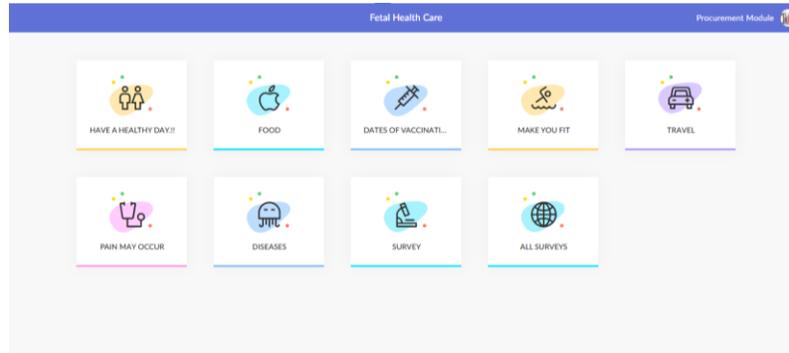


Fig.4.1

In Fig.4.1, The Home Page, where the tabs of Have a Healthy day, Food, Make you fit and Travel is displayed. Each of the tab can be used to know how to take care of the unborn child and have a healthy baby. When the user clicks on the Done button, the screen is returned to the Home Page.

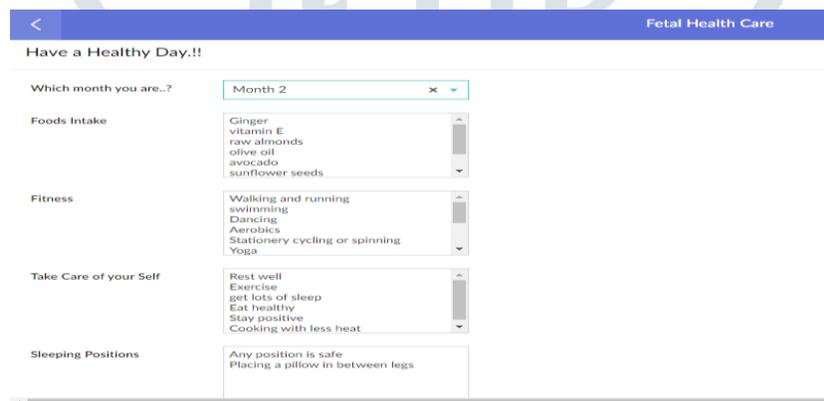


Fig.4.2

In Fig.4.2, Have a healthy day tab is displayed. In this tab, when the user selects “which month you are..?” option using the drop down menu, the type of food intake, fitness, Work to do and sleeping position is displayed by collecting the data from masters’ dataset.

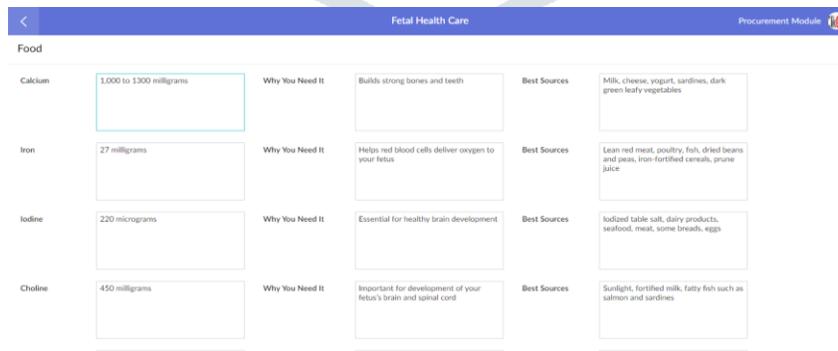


Fig.4.3

In Fig.4.3, Food tab is displayed. In which a list of nutrients is provided through which the user will come to know their level of nutrients intake during pregnancy. When this label is selected, the name of the nutrients, reason for the nutrient intake and the best sources of the nutrients is given.

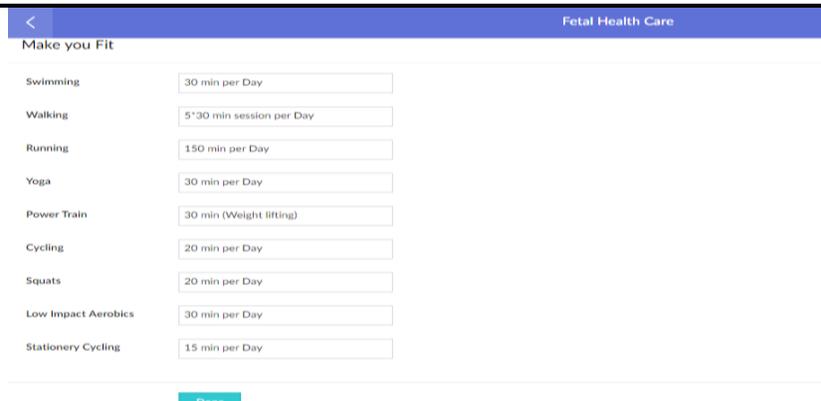


Fig.4.4

In Fig.4.4, Make you fit tab is displayed. In this tab, the exercises that pregnant women can do is available. That is, when the user selects the make you fit label, exercises to be done and time limit to do an exercise is displayed.

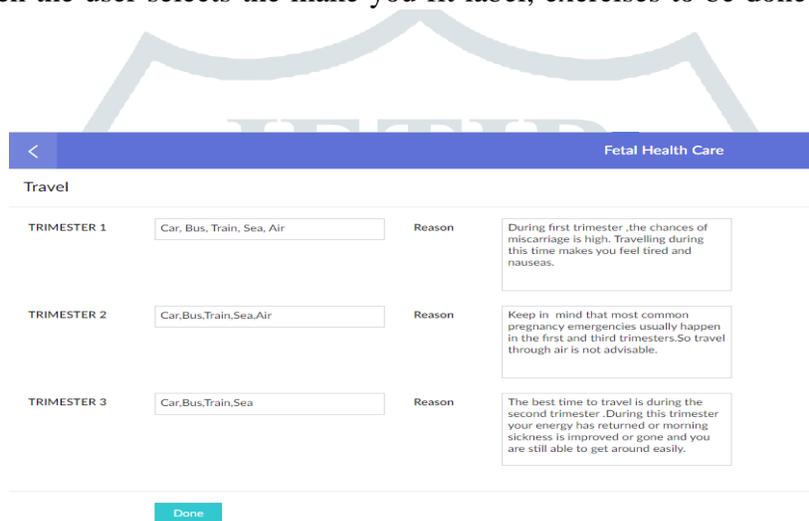


Fig.4.5

In Fig.4.5, the page of travel where is the data that is related to travel is displayed. Then the reason why a pregnant woman should travel in certain mode of transport is given. The travel list is given on the trimester basis.

V.CONCLUSION AND FURTHER WORKS

In this paper, the list of data related to travel, food, and healthcare is collected and is used in the application. The have a healthy day label is used to give best care to the pregnant woman. The nutrients to intake during the pregnancy period are listed in food label. The exercises to do during the pregnancy period are shown in the make you fit label. The travel data is displayed in the travel page by taking the data from masters’ dataset. This application is developed to give best care to the mother-to-be and the unborn child to have a healthy life.

REFERENCES:

- [1] Akhan Akbulut, Egemen Ertugrul, Varol Topcu. 2018. "Fetal health status prediction based on maternal clinical history using machine learning techniques". *Computer Methods and Programs in Biomedicine*, Volume 163, Pages 87-100, ISSN 0169-2607, <https://doi.org/10.1016/j.cmpb.2018.06.010>.
- [2] Al-Ghraiiri, Assad & Mohammed, Ali & Saeed, Harith, (2021). "An Application of Web-based E-Healthcare Management System Using ASP Net. Webology" 18. 285-298. 10.14704/WEB/V18I1/WEB18089.
- [3] Lee, Yeonkyu & Moon, Mikyung, (2016). "Utilization and Content Evaluation of Mobile Applications for Pregnancy, Birth, and Child Care". *Healthcare Informatics Research*. 22. 73. 10.4258/hir.2016.22.2.73.
- [4] Naughton, Michelle. 2003. "Pregnancy-Related Death and Health Care Services." *Obstetrics & Gynecology*.
- [5] Piri, Jayashree & Mohapatra, Puspanjali (2019). "Exploring Fetal Health Status Using an Association Based Classification Approach" 166-171. 10.1109/ICIT48102.2019.00036.
- [6] Saleh, Alaa. "An Australian survey of women's use of pregnancy and parenting apps" *Women Birth* (2016), <http://dx.doi.org/10.1016/j.wombi.2016.01.008>.
- [7] Xiong, Naixue & Zhu, J. & Lu, J. & Liu, C. & Chunxue, Wu & Cheng, H., (2018), "E-health web application frameworks based on cloud technology" *Journal of Internet Technology*. 19. 325-340. 10.3966/160792642018031902002.
- [8] Zarka, Nizar, Mohammad Moayad Mansour, and Alaa Saleh.2016. "Mobile healthcare system." In *CEUR Workshop Proc*, vol. 1712, pp. 13-18.

