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A Survey: “Focus on Women Suffers From Malnutrition”

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ABSTRACT: The term malnutrition generally refers both to under nutrition and over nutrition. Many factors can cause malnutrition, most of which relate to poor diet or severe and repeated infections, particularly in underprivileged populations. Inadequate diet and diseases, in turn, are closely linked to the general standard of living, the environmental conditions, and whether a population is able to meet its basic needs such as food, housing and health care. Women are more likely to suffer from malnutrition than men are, for some potential reasons, which involve women's reproductive biology, low social status, poverty and lack of knowledge. Moreover, socio-cultural tradition and disparities of household work pattern can also make the women more susceptible to malnutrition.

KEYWORDS: Malnutrition, data mining, decision tree, KDD.

I. INTRODUCTION

Data mining is an emerging technology that has made its way into science, engineering, commerce and industry as many existing inference methods are obsolete for dealing with massive datasets that get accumulated in data warehouses. Data mining can be a cause for concern when only selected information, which is not representative of the overall sample group, is used to prove a certain hypothesis. The Knowledge Discovery in Databases (KDD) process is commonly defined with the stages: (1) Selection (2) Pre-processing (3) Transformation (4) Data Mining (5) Interpretation/Evaluation. It also simplified process such as (1) pre-processing, (2) data mining, and (3) results validation.

According to an estimate, more than one billion people in the world are living in poverty despite enormous economic development during the past decades [1]. The burden of poverty is spread unevenly creating inequalities in all basic needs like, food, education, access to health care, and so on.

Women are more likely to suffer from malnutrition than men are, for some potential reasons, which involve women's reproductive biology, low social status, poverty and lack of knowledge. Moreover, socio-cultural tradition and disparities of household work pattern can also make the women more susceptible to malnutrition [2]. Additionally menstruation, pregnancy and lactation can lead to nutritional deficiency, which is the most widespread and disabling health related problem among women [3]. Lipton and Ravalli on [4] show that women work longer hours to attain the same level of welfare as men do, and that poverty is more likely to be chronic in women, thus they are more prone to poor health, malnutrition, and lack of education.

Malnutrition poses a variety of threats to women. It weakens women's ability to survive childbirth, makes them more susceptible to infections, and leaves them with fewer reserves to recover from illness. Poor women are likely to be poorly nourished and this has serious implications for the nutrition status of their yet-to-be-born children [5]. Every year, more than 500,000 women worldwide die from complications arising from pregnancy and childbirth [6]. Maternal under nutrition is directly associated with ill health through the malnutrition infection complex, and places both the mother and her fetus at risk [7]. The relationship between low birth weight and intrauterine growth retardation to maternal under nutrition is documented [8].



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II. RELATED WORK

Johan Aberg [9], discussed about malnutrition is a serious problem among people of old age. To overcome malnutrition, a change of food consumption behavior is necessary, which needs to be based on specialist advice from health-care professionals. Changing food-related behavior, however, is known to be difficult. This system provides recommendations of suitable food recipes, taking into account the advice of the care givers (e.g. in terms of dietary restrictions, suitable energy and fat levels, etc).

P.Sudha [10], proposed globalization and modernization changing people dietary patterns and life styles, in particular the nutrition transition away from fruits and vegetables and greater consumption of more energy dense, nutrient- poor diets dependence on television, computers and mobile phones for leisure time along with reduced level of physical activity . This leads nutrition deficiency of protein, carbohydrates, fats, minerals and vitamins. This nutrition deficiency is major factor for many global burdens of diseases. Health care professionals and decision makers from government using data mining to analyze deficiencies from several healthcare surveys and medical records to improve public health.

MadhuriArya, Pooja Chavhan and UjjwalaChaudhry [11] presented the work is currently used in large range of area like E-business world. Rule based classification is one of the sub areas of data mining. In population prospective India is a second largest country in the world, so there are lots of issues faced in current date related to health sector out of that Malnutrition is the big challenge and India spend nearly 20% to 30% of government fund . By considering above scenario author labeled an efficient system using concept of Data Mining for detecting malnutrition, Maintaining Data, Generating Reports and providing the effective treatment to malnourish people, also on the basics of collection of data. It displaying the graphical status of malnourish people and from this the E-government can forecast how to protect the next generation from malnutrition.

ChrystalleniLazarou [12], illustrated the rules emerged via data mining approach revealed the detrimental influence of the increased consumption of soft drinks, delicatessen meat, sweets, fried and junk food. For example, frequent (3-5times/week) consumption of all these foods increases the risk for being obese by 75%, whereas in children who have a similar dietary pattern, but eat >2times/week fish and seafood the risk for obesity is reduced by 33%.

Pamela Ali Akrimi, Abdul Rahim Ahmad [13], discussed the machine learning procedure offers a major platform in cases where a model lacks and the amount of data is enormous in explaining the relation and the generation of the data that is set. A research on trends and application of machine learning such as algorithms, techniques, and methods present practical functions for problem solving and application of techniques in settling and automatic data extraction. Anemia is one of the common diseases affecting individuals worldwide. It shows the accuracy and effectiveness of SVM, ANN and statistical models in the diagnosis of iron deficiency, the optimum conditions for a stable hemoglobin level has to be maintained in the range of between 11 to 12 g/dl as being the recommended level, and the concentration of the hemoglobin set above 12 g/dl.

Prof.L.T.JayaPrakash [14], author proposed labeled with the implementation of the Integrated Child Development Services (ICDS) software model. It identifies and explains important architectural elements. Also, it shows the serve needs of stakeholders to understand system concepts and give a brief summary of the use of the ICDS system. It is identified that the existing ICDS scheme is having issues with data management and implementation. Major part of India suffers from malnutrition. The architecture recognizes multi-dimensional nature of malnutrition and health issues related to kids and reflects the software solution for the same in the implementation.

M.de Onis, J.Akre [15], discussed about the Growth assessment is the single measurement that best defines the health and nutritional status of children, because disturbances in health and nutrition, regardless of their etiology, invariably affect child growth. Health and nutrition problems during childhood are the result of a wide range of factors, most of which — particularly in underprivileged populations — relate to unsatisfactory food intake or severe and repeated infections, or a combination of the two. These conditions, in turn, are closely linked to the general standard of living and whether a population is able to meet its basic needs such as food, housing, and health care.

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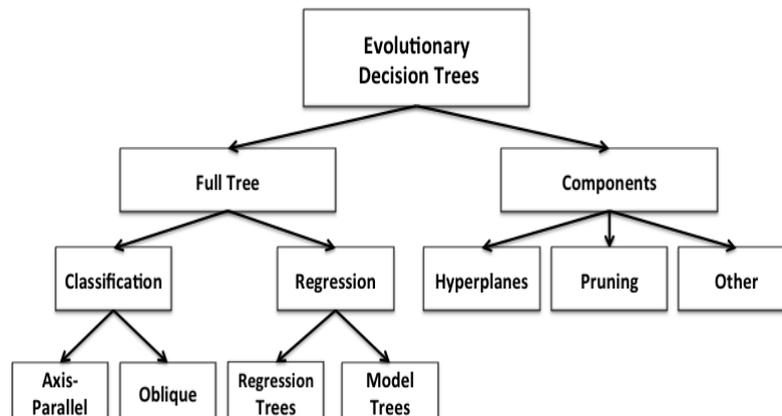
John Saunders [16], says about Malnutrition is a common, under-recognized and undertreated problem facing patients and clinicians. It is both a cause and consequence of disease and exists in institutional care and the community. Approximately 5% of the UK population are underweight with a body mass index (BMI) below 20 kg/m², although obese individuals who unintentionally lose weight and subsequently have a BMI within the normal range are also at risk of malnutrition. Other patients become at risk as a result of an acute event (e.g. small bowel infarction), leaving them unable to meet their metabolic requirements both in the short and longer term.

III. PROPOSED ALGORITHM

A. Decision Tree

Decision trees provide a geometrical framework for organizing the decisions. However, trees

- Give us a powerful intuitive basis for viewing the problems,
- Provide a language for discussing the material,
- Allow us to view the collection of all decisions in an organized manner



B. Description of the proposed algorithm:

The decision tree induction presented in Algorithm.

Consider a data set with features $\{X'_i\}_{i=1}^j$ and an imbalanced binary target class Y . To keep the notation simple, to transform the features $\{X'_i\}_{i=1}^j$ into binary features $\{X_i\}_{i=1}^n$, i.e., $\{X_i\}_{i=1}^n = \text{Binarize}(\{X'_i\}_{i=1}^j)$. The inputs to the Decision Tree (DT) algorithm are the binarized features $\{X_i\}_{i=1}^n$, the corresponding class labels Y , and a pre-specified α .

C. Selection Criteria:

First-Order Logical Decision Trees The first-order logical decision tree l is a keel database; a test in a node corresponds to checking whether a query $\leftarrow C$ succeeds in $l \wedge \text{LEAT}$ (with Lift-Boosting Ensemble of α -Trees (LEAT) the background knowledge). Note that it is not sufficient to use for C the conjunction conj in the node itself. Since conj may share variables with nodes higher in the tree, C consists of several conjunctions that occur in the path from the root to the current node. Therefore, when an example is sorted to the left, C is updated by adding conj to it. When sorting an example to the right, C need not be updated: a failed test never introduces new variables. A first-order logical decision tree (FOLDT) is a binary decision tree in which the nodes of the tree contain a conjunction of literals, and different nodes may share variables, under the following restriction: a variable that is introduced in a node (which means that it does not occur in higher nodes) must not occur in the right branch of that node.



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IV. PSEUDO CODE

Algorithm 1: Grow a modified FOLD Tree..

Input: training_data (features X_1, X_2, \dots, X_n and label Y), α, L

Output: α -Tree rule set

for for $i = 1$ to K **do**

Select the best feature X^* , which gives the maximum α -divergence criterion

if (number_of_data_points < cut_off_size) or

(best_feature == None) or (lift L is achieved) **then**

Stop growing.

if lift L is achieved **then**

The node is positive.

else

The node is negative.

end if

else

partition the training data into two subsets, based on the value of X^*

left child \leftarrow Grow a single α -Tree (data with ($X^* = 1$), α)

right child \leftarrow Grow a single α -Tree (data with ($X^* = 0$), α)

end if

V. CONCLUSION

In this survey paper, the identification the focus on women suffers from malnutrition terminology of data mining have been addressed. Many women's have meager eating habits, which can lead to various long-term health complications, such as obesity, spirit disease, diabetes and osteoporosis. Ensuring that people's women's learns the importance of eating a balanced diet, means ensuring he or she is free of these diseases and grows up to be a healthy adult. This research is already proven but not yet for practical implementation done without this research. The data mining Classification or decision tree of membership level is one of the most important sections of a malnutrition detection system. This study of review may open the Childs, women's to search efficient data mining algorithms to decrease computational time, cost and the behavior characteristics and to increase accuracy rate.

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