Chapter 15
Nutrify:
Promoting Nutrition Literacy Using Gamification

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ABSTRACT

Generally, exercise and nutrition are the two ways to maintain a healthy weight. Most of the time exercise is given more importance over nutrition. However, nutrition is equally important or else it leads to malnutrition which is of major concern in many of the African and Asian countries. Through this chapter, the authors attempt to understand the reasons for lack of knowledge about nutrition and help in designing solutions using gamification to alter nutritional behavior. The chapter discusses malnutrition causes and provides an overview of recent gamified developments to promote nutrition and reduce malnutrition. Few online and offline interventions is proposed by categorizing people into adults, children, and teachers. Finally, octalysis is performed on the presented solutions to get an idea of used and unutilized coredrives/motivators and modify for better gamification experience to improve nutrition.

INTRODUCTION

The awareness to maintain healthy weight and lead a good lifestyle has been gradually increasing in recent years. Exercise and nutrition helps to keep the weight under control. Exercise increases the amount of calories burned whereas nutrition optimizes the amount of calories consumed by an individual. Improper nutrition results in malnutrition. Malnutrition is defined as lack of proper nutrition, which results

in overweight, undernutrition, underweight, or any diet-related non communicable disease. It further results in inadequate development and many health related problems. The World Health Organisation (WHO) in its 2020 health report stated that 1.9 billion people suffer from obesity which is greater than a quarter of world population, and nearly 45% of total deaths among children below the age of 5 years in the world is due to undernutrition(WHO website, 2020). It is mostly observed in low- and middle-income countries, especially Asian and African countries. One of the major concerns of malnutrition is that the rates of childhood obesity and overweight are rising at alarming rates resulting in early type 2 diabetes. The impact of malnutrition if left unaddressed will have a huge impact on life expectancy, mortality rate and other health indices. Hence Malnutrition is one of the important issues to be addressed to reduce its impact for better development. It also improves lifestyle, increases life expectancy, health care etc for the citizens.

The causes for malnutrition can be broadly classified into biological and social factors(News Medical website, 2019). The primary reason for malnutrition in social factors is lack of food, which is highly observed among people below poverty and low income groups. People with limited knowledge and awareness about nutrition follow an unhealthy diet plan with imbalanced nutrients resulting in ailments. The main reason for malnutrition among children is due to lack of education about nutrition among parents. Sometimes even the children will not eat properly due to dislike for a food or social influence especially in school age. People who live alone like elderly, students have difficulty in eating balanced meals due to lack of cooking skills, energy or time. The biological cause for malnutrition is loss of appetite. It occurs due to existing medical illnesses like digestive problems, liver and kidney diseases, stress and other mental illnesses etc. Sometimes medications for any existing disease or ailments may interfere with the body's digestive and metabolic systems. When the amount of food taken is less than the energy demand then also it leads to malnutrition which can be observed in pregnant women.

Though the biological causes require medical treatment, the impact of social causes can be minimized. Even governments of all countries, prominent health and welfare organizations have recognized the seriousness of this issue and fighting malnutrition has been one of the primary goals of the health departments of all governments. Developing countries have progressed a lot in this front and have achieved better results but developing countries still lack behind in both resources and creating awareness. The malnutrition problem can be dealt more efficiently by the use of technological resources like Apps, introducing new initiatives and schemes etc. The effectiveness of these methods can be increased by use of concepts like Gamification for maximum reach and output. From various studies and trials which used game elements like narration, badges, vouchers etc it is evident that employing gamification in this process has provided better results and can be used as a tool to promote and encourage nutritional awareness among individuals. Octalysis is a gamification framework that helps to analyze the core drives/ motivators covered and work on core drives that are partially covered (Yu-kai Chou, 2020). The chief focus was on the use of gamification to encourage healthy eating behavior and its analysis

Background Study

Before we enter into recent developments in promoting nutrition, it is essential to understand the method of approach to tackle Malnutrition. Hence a brief understanding of Gamification and game elements, Octalysis as a framework in development of gamification is provided in this section.

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