AI-Powered Nutrition Analyzer for Fitness Enthusiasts

Literature Survey on the Selected Project & Information Gathering

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Abstract:

The recent years have seen a rapid change in lifestyles as people have increasingly become sedentary over the last few decades and the Coronavirus pandemic has aggravated the issue. Holistic well-being is a major concern for people due to rising cases of obesity and other lifestyle disorders. Smartphones are seen playing a key role in monitoring health and fitness behaviour in recent times. Mobile applications and especially fitness applications are emerging as a keen area of interest and the pandemic has further accelerated their usage with a comprehensive background of publications in leading journals. Present study analyses and identifies the most cited papers in this area in the period of 2010 to 2022. In this study a database of 645 documents were retrieved from Scopus database. This analysis provides information on trends taking into perspectives both past and present studies. The analysis also reflects important information in areas such as most prominent authors locally and globally most cited countries, most cited documents, growth in sources of production over a period of years which would help in future development of research in this area.

Introduction:

The term "artificial intelligence" was first proposed in 1955 by the American computer scientist John McCarthy. Artificial intelligence (AI) as a branch of computer science, the purpose of which is to imitate thought processes, learning abilities and knowledge management, finds more and more applications in experimental and clinical medicine. In a research individuals can have different health orientation for some it may be positive for some negative and others may have a neutral outlook towards health orientation.

Information Gathering:

Growth of Fast Food Restaurants :

Fast food products make it easier to reduce hunger problems in the community.There are more healthy choices at fast food restaurants but also it has some bad food habits .

Numerous studies have concluded that the poor nutritional value, the excessive salt content and the degree of saturated fats and trans fatty acid associated with fast food products likely perpetuate the prevalence of hypercholesterolemia, hypertension, type II diabetes mellitus, obesity and cardiovascular disease
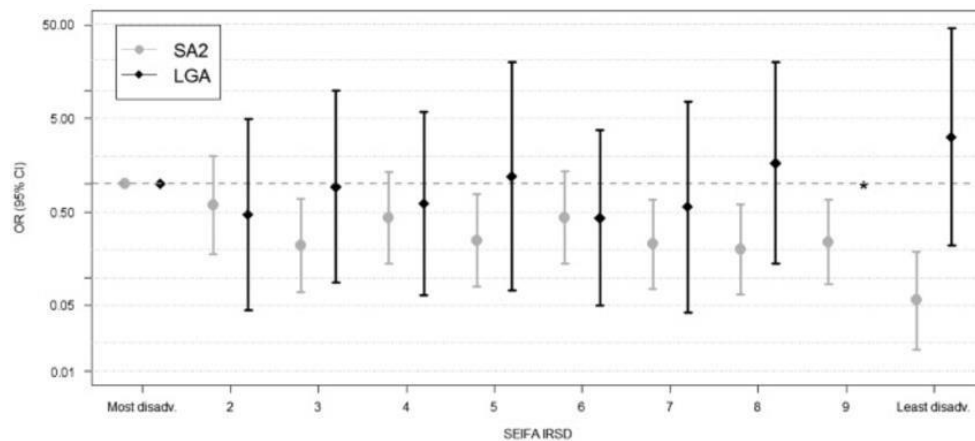
Work Pressure

Poor diet on the job is costing countries around the world up to 20 per cent in lost productivity, either due to malnutrition that plagues some one billion people in developing countries or the excess weight and obesity afflicting an equal number

The fitness apps can be segregated according to type:

- Lifestyle Monitoring Applications

- Workout Applications

- Diet and Nutrition Regulation applications

Advantages of using health tracker application:

o **Accountability** o A fitness tracker helps you exercise every day whether just walking, jogging or working out. You are more committed to get your steps in or complete your workout sessions.

o **Motivation**

  o A fitness tracker gives a visual of your progress and accomplishments each day. Seeing your progress is good motivation to improve more and more each day.

o **Healthy eating**

  o It is important to eat a healthy diet while you exercise. By keeping track of your food and water intake helps you maintain a healthy lifestyle.

o **Stay Connected**

  o There are some fitness trackers that include Wi-Fi and Bluetooth. This allows you to receive incoming calls, text messages, or emails without looking at your phone. It is a great way to stay connected without always being close to your phone.

o **Monitors Heart Rate**

  o Most fitness trackers have the ability to monitor your heart rate by measuring your pulse. This allows you to reach your target heart rate with each workout. The maximum heart rate is about 220 minus your age. During moderate physical activities, you're target heart rate is about 5070% of the maximum heart rate and with vigorous workouts it should be about 70-85% of the maximum heart rate. The fitness tracker can detect changes that may occur to your heart rate.

Disadvantages:

o **Expensive**

  o Fitness trackers can be expensive to buy. If you don't use it, you could have spent your money on something more useful.

o **Battery**

  o Most trackers have limited battery life. When charging your device, you will not be able to keep track of your steps or workouts.

o **Accuracy**

  o Some trackers do not provide 100% accurate metrics/information that may be shown on the device. Some of that information is just an estimate. Try not to fully rely on these devices.