AI in Corporate Bowl of Diet and Wellness

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ABSTRACT

Artificial intelligence (AI) has been transforming the way medical professionals treat patients. This paper will discuss how AI is significantly altering the health care system, particularly in terms of diet. In order to help physicians, dietitians, and other health professionals make better decisions and lead healthier lives, a variety of machine learning and deep learning algorithms have been created to extract useful information from healthcare data. An overview of the state of art of AI applications in healthcare is given in this study, with an emphasis on the use of AI-driven systems in nutrition. The difficulties in creating AI recommender systems for the healthcare industry are discussed in this study, which offers a comprehensive analysis of the insights of balanced plating. The current initiatives to use AI in nutrition set the stage for a time when tailored advice will be essential in helping people lead healthier lives.

Keywords: Keto, detox, balanced plating, dietetics department, slimming-fitness-wellness. Clinical nutrition, dietician-nutritionists

Brief Overview of the Organization

At VLCC all over India, more than 18000 clients visit for weight management every month. While going through the profiles of the clients, I was amazed to see more than 500 adolescents a part of it. A book keeping daily records was prepared about dietary habits, lifestyle diseases etc. to help them. Thus, a research paper was initiated and the findings of the project helped in generating meaningful insights through this diet journaling. VLCC is a pioneer in skincare, beauty, and wellness services. Few diet books were readed regarding keto diet and gym diet and healthy patterns of dieting were realized.

At an urban hospital setting PARAS Hospital, Ranchi the dietary prescription is prepared by the junior dietitian and feeded in HMIS for further review by counsellor and senior dietitian.

The selected articles reveal that early systems, relied on handcrafted machine learning algorithms to manage traditional sequential processes, such as segmentation, food identification, portion estimation, and nutrient calculations. Later, these handcrafted algorithms have been largely replaced by deep learning algorithms for handling the same tasks. More recently, the traditional sequential process has been superseded by advanced algorithms, including multitask convolutional neural networks and generative adversarial networks. Most of the systems were validated for macronutrient and energy estimation, while only a few were capable of estimating micronutrients. Notably, with efforts focused on replicating humanlike performance even chefs could be replaced by metahumans.

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Figure:1

Figure:2

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Figure:3

INTRODUCTION AND LITERATURE REVIEW:

Hospital dietary services are essential components of patient care, focusing on providing nutritious meals tailored to medical needs, recovery goals and specific conditions. These services cater beyond basic needs of simple food, they involve coordinated efforts by dietitian's, nurses, kitchen staff to ensure patients receive balanced nutrition that supports healing, prevents complications like malnutrition, and aligns with treatments such as surgeries or chronic disease management. In India, where hospitals provide services to diverse populations, these diets incorporate cultural preferences, religious consideration and regional cuisines to promote adherence and satisfaction. Hospital diets are customized using patient prescriptions from physicians and reviewed by registered dietitians. Balanced meal planning for stable patients, employees, staffs selecting variants from food groups like energy boosters, proteins, carbohydrates, vitamins, minerals and hydration. Therapeutic diet restricts to specific conditions such as low sodium for hypertension, diabetic friendly for blood sugar control, renal for kidney issues,

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soft luke warm easy digestible post-surgery. Supplements and extras like high calories drinks, protein bars, or fortified foods for undernourished patients, often monitored via tools like electronic ordering systems to track intake accurately.

Figure 4: Doctor Information Page

Figure 5: Doctors List

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Figure 6: Dashboard

AI in hospital dietary services optimizes patient care through personalized nutrition planning, automated malnutrition risk screening, and real-time intake monitoring. AI analyses medical data and food images (IADA) to create tailored, high-precision dietary plans, reducing hospital malnutrition and supporting specialized diets for oncology, diabetes, and ICU patients. Accurate assessment of nutritional status is critical-methods including body mass index checks, biochemical tests, and intake logs-to identify risks early and adjust plans. Proactive monitoring vital for outcomes like reduced infection rates, malnutrition and shorter discharge wait times for hospitalized patients.

A thorough search across multiple databases is necessary to ensure the evaluation's quality and thoroughness. Because they provide top-notch, peer-reviewed research relevant to specific fields like information technology, engineering, and health sciences, major journal databases are crucial. The following significant databases were searched in order to locate relevant information for developing a real-time patient tracking system in healthcare facilities. The Directory of Open Access Journals (DOAJ), Science Direct, Springer Link, PubMed, Google Scholar, and Research Gate. These databases ensure a broad spectrum of theoretical and practical research and offer valuable information needed to develop a practical solution.

These databases were selected because they offer unique insights that are essential for creating real-time patient location tracking and monitoring systems, as well as thorough coverage of a wide range of subjects pertinent to this project. This diverse book record guarantees a comprehensive assessment that incorporates technical, clinical, and management perspectives, which is necessary to build an effective real-time dashboard. This search also helped us identify potential study gaps, so the review offers a solid foundation as well as innovative directions for future research in this field. By employing this systematic approach to search terms and literature selection, the study prevented information overload and ensured that only the most important and relevant articles were included in the review. In addition to sharpening focus, this process allowed for a comprehensive investigation of the crucial elements that make real-time patient location tracking and monitoring systems crucial in healthcare institutions.

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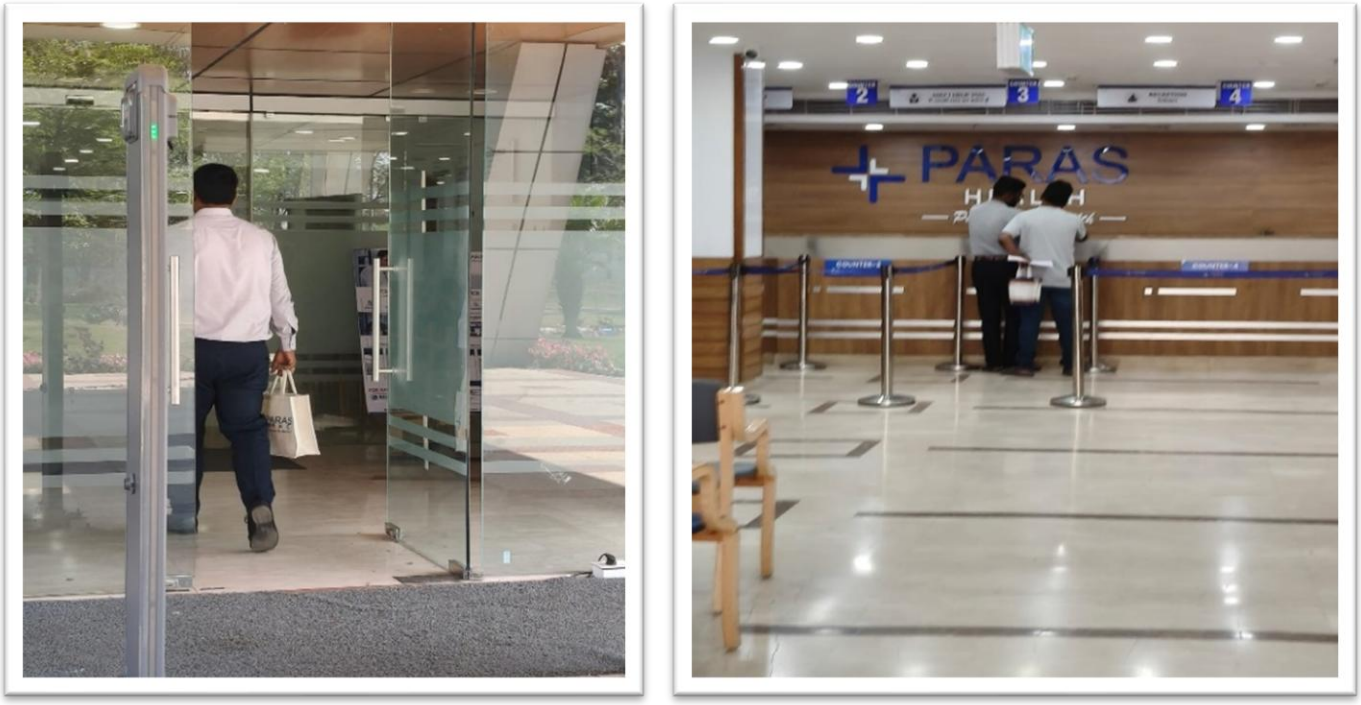

Figure:7

Research Objectives

Artificial intelligence (AI) has the ability to optimize hospital resource usage, improve patient outcomes, and increase early detection. The purpose of this systematic review is to assess how well AI-based treatments work for the early detection and treatment of hospital malnutrition and further designing the balanced plate of diet for consumers.
We are suggesting a suggestion system for their daily lives in order to do this with the present technologies. This research paper's objective is to examine AI applications in nutrition and discuss the difficulties in providing dietary advice to the general public.

Food recommendations, prices, and availability can all be impacted by seasonal changes and can be replaced by substitutes. Improving health status with dietary guidelines by meal planner guide. app.

METHODOLOGY

We developed a nutritional AI application that helps our daily day-to-day lifestyle. It is like a virtual assistant that helps you achieve your health goals by suggesting nutritional meal plans, exercises, and supplements that uses AI to provide personalized recommendations. To achieve the goal, we use a structured approach of data collection, model development, and validation. The workflow of the system can be framed as AI nutrition application The system starts with collecting the user information like their height, weight, and health history. A trained model will then use the information to recommend healthy meals, exercise, and nutritional supplements. The following subsections will deep-dive into the specific features of this nutritional application that could benefit the users.

Nutritional Diet Chatbot The methodological approach of integrating an NLP driven model into a nutritional chatbot focuses on user interactions, intent extraction, and dynamic data retrieval for personalized dietary recommendations. The main features of the nutrition chatbot application Nutritional Diet Chatbot be:

With a single click, our nutrition AI and meal plan creator will create a tailored food plan for you. In order to help you meet the daily macronutrient targets it sets for you, the nutrition AI also lets you keep a meal journal. The AI is adaptable enough to suit your tastes and way of life while yet being intelligent enough to keep your diet optimal and on track.

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Just complete your profile and click "Generate" to start creating your plan. After that, the meal plan generator AI will automatically create a diet plan for you based on your tastes and nutrition objectives. Once you have your plan, you can further customize it by switching and randomizing meals, all the while the AI makes sure, you're still eating just what you need to achieve your health, nutrition, and fitness objectives. Nutritional AI can help you lose weight, gain muscle, enhance your overall health, and feel and look better. Simply modify your profile to reflect your unique objectives and interests, then select "Generate Plan".


meal plan : week 1

	BREAKFAST	LUNCH	DINNER
Day 1	Low-Carb Breakfast Sandwich	Bacon Egg Salad Lettuce Wraps	Roasted Chicken, Asparagus & Hollandaise Sauce
Day 2	Crustless Bacon Broccoli Quiche (2 slices) & Guacamole	Chicken Bone Broth with Chicken, Avocado Caprese Salad	Paleo Taco Salad w/ Ranch Dressing
Day 3	Egg Drop Soup & an Avocado	Leftover Taco Salad w/ Ranch Dressing	Easy Pan-Fried Chicken Tenders, Ranch Dip, Mixed Greens Salad, Cheddar Garlic Biscuits
Day 4	Crustless Bacon Broccoli Quiche (2 slices) & Guacamole	House Salad with Chicken & Ranch Dressing	Stuffed Peppers, Ranch Dressing
Day 5	Low-Carb Breakfast Sandwich	Leftover Stuffed Peppers w/ Ranch Dressing	Cheesy Chicken Broccoli Casserole
Day 6	Chicken Bone Broth with Chicken & an Avocado	Leftover Cheesy Chicken Broccoli Casserole	Cheeseburger Sloppy Joes, Cheddar Garlic Biscuits, Crispy Bacon Broccoli
Day 7	Chicken Bone Broth with Chicken, Leftover Broccoli, & an Avocado	Leftover Cheeseburger Sloppy Joes & Biscuits	Chicken-Veggie Bake w/ Ranch Dressing

Figure:8

Research Design And Approach

The meal planning software for fitness professionals if you want to utilize this product with your customers

1) User Engagement and Indent Determination Through natural language interaction, the user shares details about their food choices, constraints, and health objectives. The data is gathered in order to offer tailored suggestions.
   Dynamic retrieval of data The accessible data services are cross-referenced with the purposes. Nutritional data, recipe databases, and user-specific profile information are among the several datasets that make up the data services. Additionally, it will guarantee that the pertinent information is retrieved for the recommendation.
   Dietary recommendation response Based on the user's input and dietary type, the program generates customized dietary recommendations. By providing a variety of meal options that adhere to the user's set diet, these suggestions are meant to be in line with their tastes. The model is improved by processing the user input.
2) Exercise Advisor The exercise recommender system is a hybrid system that suggests workout programs using either a collaborative approach or a content-based approach. Their fitness objectives and user profile are taken into consideration while creating the exercise regimens. dietary choices, medical issues, and previous contacts with nutritionists. Next, the model recommends dietitians whose specialties closely match the demands of the consumer.
3) Customized Nutritionist Suggestions: Based on the user profile, the recommender recommends a list of nutritionists. These experts are selected based on their proficiency in treating particular health issues, dietary preferences, and favourable reviews from other users with comparable wellness objectives. Numerous user-input data, such as food preferences, health objectives, limitations, clinical data history, family history, etc.

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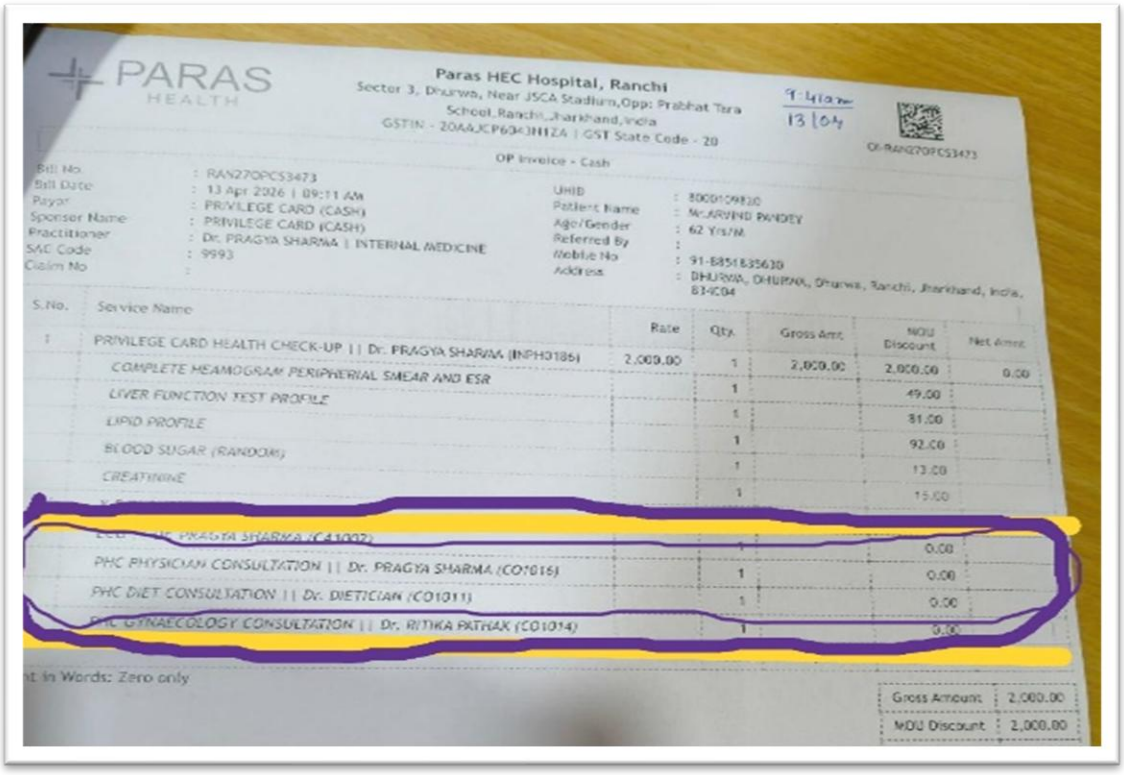
Progress Tracking: The goal of this module is to showcase the user's accomplishments. It ensures that every workout is demanding for its capabilities by continually evaluating performance to improve routines.

Supplemental Nutrition in order to ensure that technology and wellbeing are integrated, the nutritional supplement recommender seeks to direct people toward the appropriate nutritional supplements that are offered in local businesses. Vitamin, mineral, or dietary supplement recommendations are carefully tailored to each user's unique health goals.



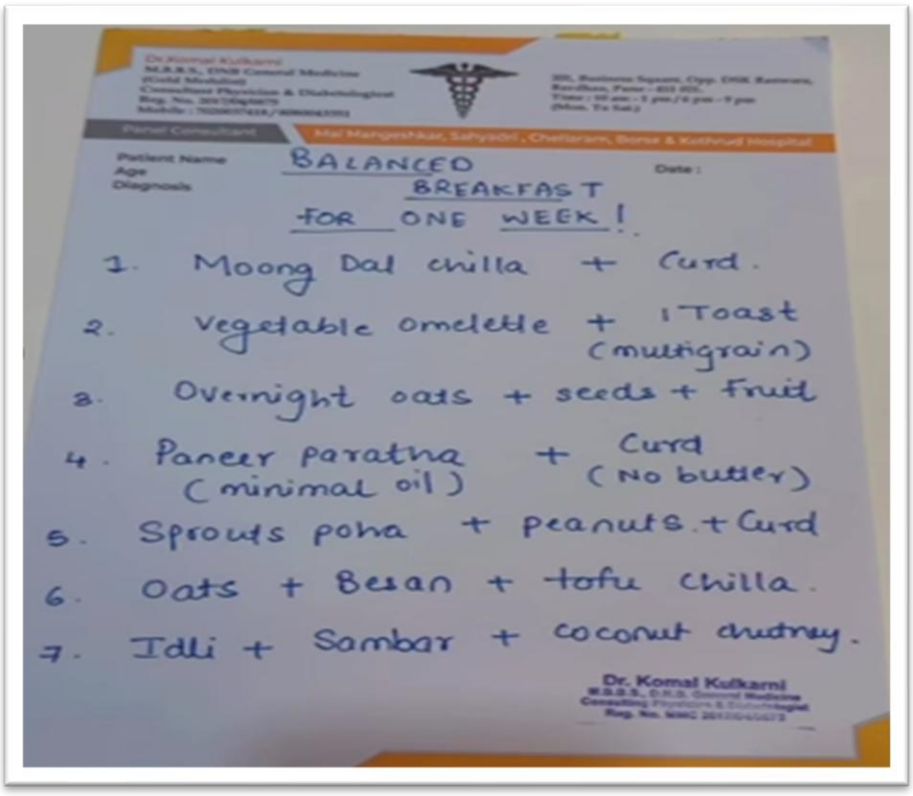


Figure:9

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Data Collection A pilot survey of about 15 days:

Health and habit analysis

1. I am overweight since…
2. I am overweight because of…
3. I want to lose weight in proportions… Y/N
4. I find it difficult to lose flab from my…. Part of body
5. I am a veg/non-veg
6. My heartiest meal is breakfast/mid-morning/lunch/evening/tea-dinner
7. I skip my meals… Y/N
8. I dine out … weekly/monthly/3-4 times a week/twice a week/once a week/ occasionally
9. I am fond of … ingredients in meal
10. Strongly dislike…
11. Medication (if any)
12. Analytical remarks

Check out for:

A Nutritive value of commonly cooked preparations, calories intake/day

B Energy expenditure for half an hour activity

C Health and habit analysis

D Usual dietary pattern

E 24-hour recall

F Daily activity schedule

G Dieticians' recommendations

H Sample menu

I Dietary recall

J Allergic food choices

DATA ANALYSIS AND RESULTS

Dietary checklist, deliver short cycle evidence-based counselling on keto/detox diet meal plans

Dietary project can adopt health content and food court studio, incubation and food labs hub, fintech and health insurance covers, digital health and telemedicine centres, food a tap away or klick-care-cure therapeutic hubs.

Hub spoke meals on wheels' model screening and snapshot of programs

Documentation reporting 24h 90%

Patient reported confidence score 8/10

Patient adherence 80% at 3 months, client retention, potential clients to premium clients

Improved soulful diet regime, self-care motivation and self esteem

Holistic care and balanced work-life, strong knowledge of slimming, dietetics and wellness therapies. Analysing body mass index, fat percentage, idealistic report of clients (personalized nutrition)

From tasting flavours to understanding science behind nutrition, functional food charting and wellness in modern nutrition. Parenteral and enteral nutrition system a supporting tool for hospital's most fragile patients. Tracking

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behavioural addiction and trends/patterns of clinical nutrition. Plating and dribbling meal plans in alignment with food pyramids and decision tree model for males and female consumers.

Eat Drink And Merry!!

Know yourself better- DIET JOURNAL BOOK

Balanced meal plating – Calculate your daily CALORIES INTAKE

Adolescent males: 2640 calories a day

Adolescent females: 2060 calories a day

Water intake:5-7 Litres

If you need to lose/gain weight – GO for healthy swap list of foods

Dos and Don'ts of daily MEAL PLAN

Dietician's recommendations is a must!!

Nutritive value of commonly cooked preparations.

BENTO tiffin meals and balanced diet plated meals

Sleep activity, productivity tracker, Mood board, workout regime (Yoga, gym)

Track logs of activities and usuals diet pattern

Forest decision tree analysis and mind map (healthy choices)

Dietary recall/guidance

Carbs intake: 70-75%

Proteins: 12.5-15%

Fat: 8-10%

Dietary sugar: Not exceeding 2 tbsps. a day

BMI standard computations (BMI > 30 indicates a weight issue), simply fill in the required details in AI e-diet plan

Figure: 10

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CONCLUSION

Incorporating automation into personalized diet plans and wellness strategies, such as tailored blend of urban fusion and cultural richness offers transformative potential for health optimization. AI driven tools leverage machine learning algorithms to analyse individual factors like genetics, activity levels, dietary preferences and even environmental influences (organic hubs, seasonal food availability, hybrid agriculture). This enables hyper-personalized levels of nutrition, generic advice, promoting sustainable weight management, improved energy levels and reduced risk of chronic conditions. Apps integrating AI can track meals via smartphone cameras, adjust calorie intake dynamically and suggest aligned options or choices while monitoring progress through wearable devices synced to architectural food platforms.

AI in corporate bowl of diet refers to AI-powered apps and systems that provide personalized nutrition planning, food tracking, and meal generation to achieve weight loss or health goals, often using image recognition to log food. These apps analyse user data (age, weight, lifestyle) to generate customized meal plans, track nutrients, and provide grocery lists per week. They generally act as virtual assistants to help us in analysing portions of ingredients and number of portions to be added in the plate. It also helps us in designing plates highlighting on dining etiquettes. Also, in tech companies the lunch catering is often outsourced and the buffet is managed well on daily needs.

Ultimately AI positions keto wellness ecosystem at the forefront of global innovation, blending cutting-edge tech with holistic approaches like mindfulness meditation or food regime adapted by virtual AI assistant. Looking ahead, advancements in generative AI enables fully adaptive meal prep suggestions for holistic care.

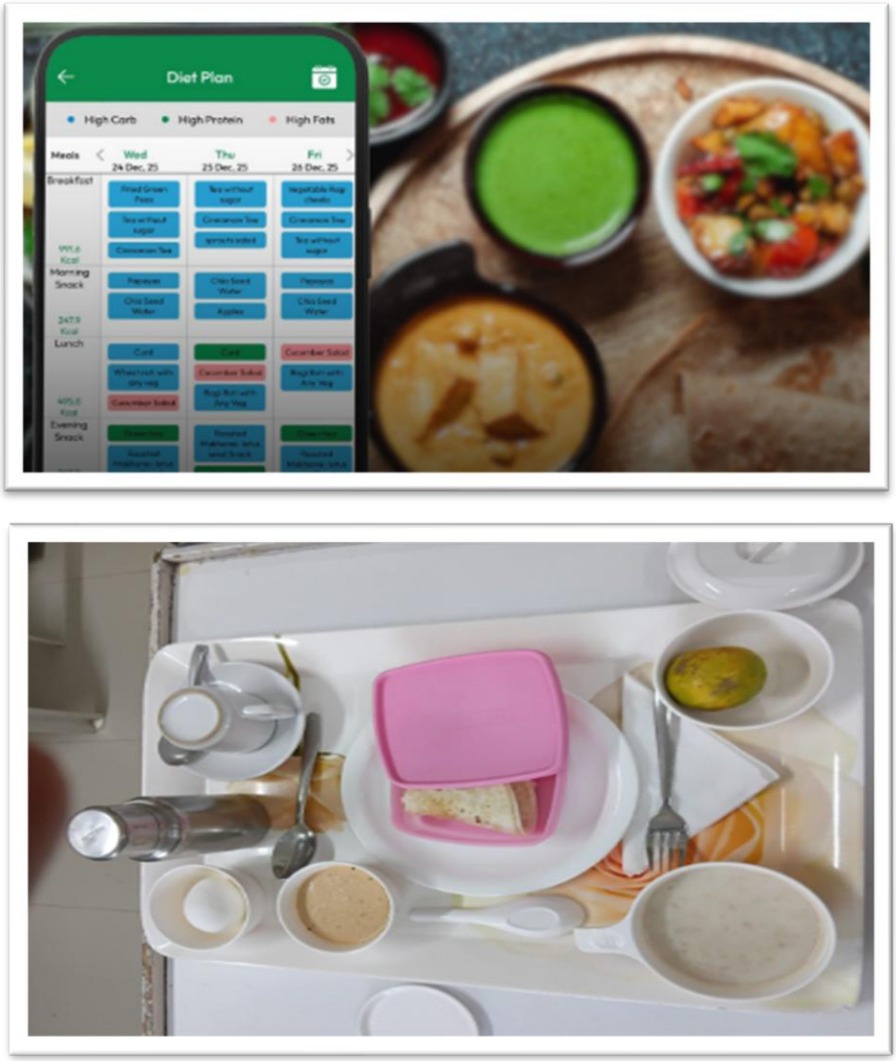

Figure: 11

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E Books

Top AI Diet E-Books

"AI-Powered Nutrition: Transforming Your Diet with Artificial Intelligence": Focuses on personalized meal plans based on personal data rather than generic diet plans.

"EAT SMART, LOSE SMART: How AI is Transforming Diet and Fitness" (Dr. Jordan Newman): A guide to using AI for individualized nutrition, fitness tracking, and data-informed habits.

"101 AI Prompts for Personalized Diet & Nutrition Planning": Provides specific prompts to help users set up AI tools for, meal planning, and nutritional tracking.

"The AI-Powered Plate" (Beginner's Guide): Focuses on using artificial intelligence for personalized nutrition and smart meal prep

Books

AI Innovations for Improving the Food Industry

Pethuru Raj (Reliance Jio Platforms Ltd., Bangalore, India), Kai Sheng (Xidian University, China), Kavita Saini (Galgotias University, India), and S. Koteeswaran (S.A. Engineering College, India)

AI-Driven Personalized Nutrition Apps and Platforms for Enhanced Diet and Wellness

Gajendra Prasad (Assam University, India), Mrutyunjay Padhiary (Assam University, India), Azmirul Hoque (Assam University, India), and Kundan Kumar (Assam University, India) Source Title: Food in the Metaverse and Web 3.0 Era: Intersecting Food, Technology, and Culture

DOI: 10.4018/979-8-3693-9025-2.ch006

Future Directions Of Research

24/7 digital dietitians

Personalized clinical nutrition

Customized diet kits with biomarkers

Smart kitchens in automations food ecosystem

Integration with genomics and microbiome diet pills

Immunity booster forest essentials model