

A Holistic Approach to Enhancing User Experience with AI-Driven UX in a Diet App

Case Study of the 'Endiet' application

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ABSTRACT

This study investigates the integration of User Experience (UX) and Artificial Intelligence (AI) in the development of 'Endiet', an innovative application aimed at enhancing obesity management. Current health applications often lack personalized care, leading to suboptimal user engagement and health outcomes. 'Endiet' addresses these challenges by leveraging AI to offer adaptive and intuitive UX design, thereby providing a holistic approach to obesity management. Through comprehensive user research, including surveys and in-depth interviews, the study identifies key user needs and preferences, informing the design and functionality of the app. The AI-driven features of 'Endiet' include personalized diet plans, real-time feedback, and predictive health insights, which collectively aim to improve user adherence and health results. The findings demonstrate the potential of combining AI with user-centered design to create effective health applications. This research contributes to the field by showcasing a practical implementation of AI in personalized healthcare, offering insights into future developments in health technology.

KEYWORD

User Experience (UX) Design, Artificial Intelligence in Healthcare, Obesity Management Technology, AI-driven User Interfaces (UI), Personalized Health Applications

Manuscript received May 19, 2024 / Revision received June 10, 2024 / Accepted June 17, 2024

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1. Introduction

Obesity has emerged as a pervasive global health issue, with millions grappling with its profound health and societal implications. The epidemic's prevalence strains public health systems, the economy, and the fabric of society. Since the advent of smartphones, diet applications have been continuously evolving, and recently, advanced diet applications like 'Diet Camera AI' that utilize AI deep learning and machine learning technologies to assist with diet management have been introduced to the market. However, current healthcare models in obesity management are frequently criticized for their lack of personalized care, prompting an urgent call for innovative approaches that address the heterogeneous needs of the affected population. In response, technology, particularly Artificial Intelligence (AI), holds significant promise in redefining healthcare. Sophisticated tools powered by AI, such as those for disease diagnosis, treatment recommendations, and patient engagement, are poised to substantially enhance the quality of life and care (Alowais et al., 2023). The potential for AI in healthcare to transform chronic condition management, including obesity, is significant and timely. According to research, the rising levels of obesity contribute to an increased incidence of significant health issues like diabetes, coronary heart disease, and osteoarthritis, highlighting the urgency of managing this public health challenge (Agha & Agha, 2017).

Building upon the insights provided by "Design Integrating AI and Medical Expertise for Personalized Obesity Management: A Holistic Approach to Diet Application Design", the endeavor is to forge a path to a more personalized healthcare paradigm. While existing obesity management applications exist, many fail to approach the problem from a holistic perspective, often focusing narrowly on specific aspects like diet tracking or exercise monitoring.

Many current obesity management applications fall short in personalization and user engagement. While providing general advice, they lack the tailored approach for effective long-term health management. Studies have shown that personalized interventions significantly improve health outcomes. For instance, AI-driven personalized healthcare enables faster, and more effective utilization of data collected from genetic testing, health records, and clinical trials, improving patient outcomes and reducing healthcare costs (StartUs Insights, 2023). However, existing solutions often fail to integrate comprehensive user feedback mechanisms,

resulting in disengagement and suboptimal results. A study by Implementation Science found that many implementation efforts fail because they do not adequately incorporate user feedback, resulting in less effective outcomes and lower user engagement (Damschroder et al., 2022).

‘Endiet’ addresses these limitations by offering a more sustainable and user-focused approach. Through meticulous UX design and AI integration, ‘Endiet’ aspires to create a comprehensive tool that manages obesity by understanding and adapting to individual user needs. It explores user experiences and expectations and harnesses AI to define essential features that provide personalized, actionable health guidance.

‘Endiet’ extends beyond being a tool; it collaborates with users, offering a personalized pathway to healthier lifestyles. Committed to profoundly understanding user needs, ‘Endiet’ ensures this understanding enhances its relevance and effectiveness. By integrating feedback loops and adaptive learning, ‘Endiet’ continuously refines the user experience, placing the user at the center of the design process.

This research explores the integral features and functionalities of ‘Endiet’, shaped by AI, to meet users’ health management needs. The discussion will detail user interaction and engagement strategies, describing how ‘Endiet’ guides users through their health journeys with intuitive and responsive AI-supported features framed through problem-solving UX design.

2. Literature Review

This section explores the conceptual underpinnings crucial for the effective integration of user experience (UX) and user interface (UI) design with artificial intelligence (AI) within healthcare applications.

2.1. Principles of UX/UI Design Relevant to Health Applications

UX/UI design principles are crucial for ensuring that health applications are accessible and practical, promoting long-term user retention and satisfaction. According to Rangeswan et al. (2023), creating a satisfying and engaging user experience is fundamental to the success

of health apps. Simplicity is essential in these designs; interfaces must be clear and minimalist to prevent user confusion and enhance usability. Jakob (2024) notes that this approach aligns with the usability heuristic for simplicity and user control, indicating that straightforward systems help users avoid feeling overwhelmed by unnecessary complexity. Consistency throughout the application also plays a critical role, as it fosters user comfort and familiarity—factors Nielsen identifies as vital for boosting user retention and satisfaction.

Moreover, personalization within health applications is indispensable, as it allows the software to meet individual health needs and preferences, significantly enhancing user engagement and the effectiveness of health interventions. Olaniyi et al. (2022) demonstrates that personalized interventions in mobile health applications significantly enhance user engagement and effectiveness by aligning the app's functionalities with the exact demands of healthcare workers and patients. Integrating simplicity, consistency, and personalization not only addresses the diverse needs of users but also creates a seamless and cohesive user experience that encourages continual engagement. By adhering to these established usability heuristics, health applications can offer more engaging and user-friendly experiences tailored to support the unique health journeys of each user.

2.2. Integration of AI with User-Centered Design

The integration of AI in health applications is crucial for several reasons. Integrating AI with user-centered design in health applications transforms the user experience by leveraging machine learning algorithms to predict and adapt to user behavior and needs. AI's role in leveraging large-scale data analytics not only delivers personalized medical advice and predicts health outcomes with precision but also enables the technology to sift through vast datasets to provide customized health recommendations and proactively identify potential health risks (Puaschunder & Feierabend, 2019). This feature is crucial in conditions like obesity because interventions in personalized nutrition have shown considerable effects on dietary behaviors and physical activities related to obesity control, highlighting their importance in customized health approaches (Shyam et al., 2022).

Therefore, integrating AI with UX design is essential. Firstly, it provides users with personalized information through real-time feedback and support. Secondly, it creates a dynamic

learning environment that adapts as the user's health changes. In alignment with the comprehensive UX principles discussed above, the project aims to develop the holistic obesity management application 'Endiet' by integrating AI technology.

2.3. Case Studies of AI in Healthcare Applications

The following case studies highlight the diverse applications of AI in healthcare, spanning app services, service design, and offline clinics.

- **Offline Clinic, Remote Monitoring: Mayo Clinic's Remote Diagnostics and Management Platform (RDMP)**

Mayo Clinic has developed the RDMP, which connects patient data with AI algorithms to provide advanced clinical decision support, diagnostic insights, and care recommendations. This platform significantly enhances clinicians' ability to make faster and more accurate diagnoses, particularly in remote care settings. For example, AI analysis of ECG signals can detect heart conditions, improving early disease detection and management (Anastasijevic, 2021).

- **App Service Design: Noom's Personalized Diet Plans**

Noom uses AI to offer personalized diet plans by analyzing user inputs such as dietary habits, exercise routines, and psychological factors. This integration enhances user engagement and weight loss outcomes by incorporating psychological therapy and cognitive behavioral therapy (CBT). Studies have shown that users experience significant weight loss and improved eating patterns with the support of virtual AI coaches and human coaches (Thau, 2021).

- **Offline Clinic + Online Health Management Tools: Kaiser Permanente's Integrated Health System**

Kaiser Permanente combines offline clinical services with online health management tools through an AI-driven app that allows patients to schedule appointments, access medical records, and receive personalized health advice. One notable example is the Advanced Alert Monitor (AAM) program, which uses AI to predict patient deterioration and has been deployed in multiple hospitals, reportedly saving hundreds of lives annually (Yang, 2024).

3. User Research & Analysis

3.1. Purpose

To deeply understand prospective customers' potential needs and preferences for 'Endiet', comprehensive user surveys and detailed interviews were conducted. These studies aimed to gather insights into customer expectations, existing pain points, and desired features that could inform the design and functionality of 'Endiet', ensuring it meets user needs effectively. The feedback collected from these surveys and interviews is crucial for guiding the development of a product that resonates with its target audience and delivers an exceptional user experience.

3.2. Survey Results

A survey was conducted among 61 people aged between 10 and 30 with diet application experience. The questionnaire included basic questions about exercise amounts and existing dietary habits, as well as more in-depth questions regarding knowledge about dieting, usage of diet apps, and desired features in diet apps.

Figure 1 displays the factors people consider important when choosing a diet application. A significant majority, 60%, prioritize the convenience of exercise and diet management. The app's features are important to 23.3% of the respondents. Other factors, such as user ratings and reviews, GUI design, and miscellaneous aspects, are less critical, collectively making up 16.7% of the responses.

Q. What factors did you consider important when choosing a diet app?

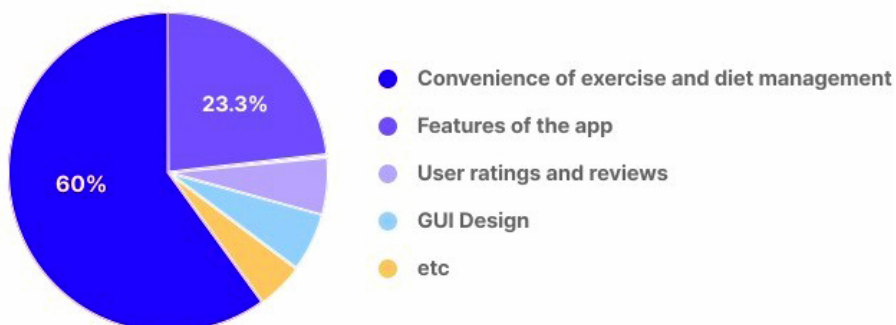


Figure 1 Survey Results on What Factors were Considered Important When Choosing a Diet Applications

Figure 2 illustrates the types of inconveniences users experienced while using a diet app based on the responses from the same survey. The majority of the issues, 30.4%, were related to the interface and usability of the app, indicating that many users found the design or navigation challenging. Both pricing and payment issues and lack of features were significant concerns for 21.1% of users. Community and support issues were cited by 17.4% of the participants, reflecting dissatisfaction with the level of interaction or assistance available. Accuracy and reliability of the app were less frequently reported as problems, accounting for 8.7%. Other minor issues were grouped into ‘etc.’, making up only 1.3% of the responses. This data clearly indicates where diet app design and functionality improvements are needed.

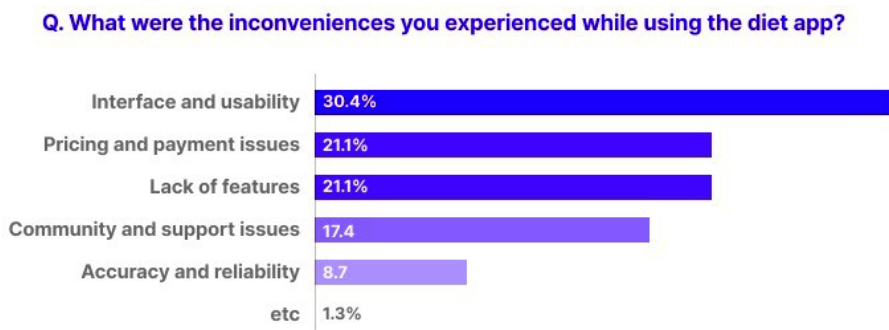


Figure 2 Survey Results on Inconveniences Experienced While Using the Diet Application

The bar chart in Figure 3 provides an overview of the positive aspects of utilizing a diet application, as rated by users. The most prominent benefit, cited by 60% of respondents, is the effectiveness in tracking diet, highlighting the app's primary utility in managing dietary intake. The second most appreciated feature, with 32%, is dieting awareness via notifications, which helps users stay mindful of their eating habits. Other features valued by users include the use of community and the option to opt-out (both at 8%), underscoring the app's role in fostering a support network and recognizing individual preferences for engagement. Less prevalent benefits, each selected by 4% of the respondents, include consulting features, the ability to visualize weight changes through graphs, and exercise logging, indicating these are useful but not as critical for most users. This distribution of responses showcases a clear prioritization of features that directly support dietary management and user engagement.

Q. What were the positive aspects of utilizing the diet application?

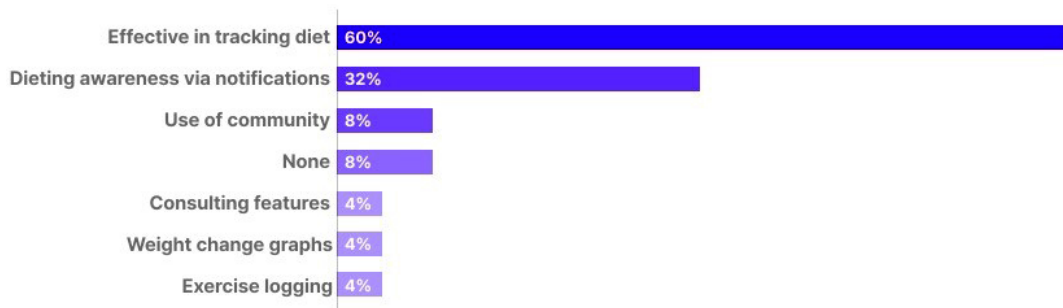


Figure 3 Survey Results on Positive Aspects of Utilizing the Diet Application

3.3. In-depth Interview Results

In addition to the survey, in-depth interviews were performed with six individuals in their twenties who have experience with dieting. The discussions primarily focused on the causes of dieting failures, considerations when dieting, opinions on a one-on-one coaching system, and the necessity of sleep management. The interview questions focused on the objectives of dieting, reasons for past failures, key considerations while dieting, opinions on one-on-one coaching systems in diet apps, and the necessity of comprehensive lifestyle management during dieting. Common reasons cited for dieting failures included frequent social commitments, loss of motivation during the diet, lack of will to control food intake, and the temptation of delivering food and late-night snacks. These are mostly linked to individual willpower. Participants desired sustainable management when considering elements during dieting, including consistency, exercise, diet, and appetite suppression. There were mixed opinions regarding the one-on-one coaching system: some found it necessary for efficiency and focus, while others felt that face-to-face interactions could be burdensome. Lastly, sleep management was emphasized as necessary for improving lifestyle patterns.

4. Conceptualization

4.1. Integration of AI into Key Features of 'Endiet'

To refine the concept and features of 'Endiet', a Design Thinking Process was conducted

based on comprehensive reviews, including market research, survey results, and interviews. This process led to extracting key features that were directly influenced by integrating advanced AI technologies. These features aim to provide a user-friendly UX/UI design that manages optimized obesity solutions tailored to each user's needs.

'Endiet' is designed to offer an easy-to-use UX/UI that effectively manages tailored obesity solutions for each individual. This requires continuous analysis and customization of user data. By employing artificial intelligence, the app can tailor UI interfaces uniquely for each user by analyzing their behavioral patterns and preferences. According to Krysiak-Adamczyk (2024), this realization of a personalized experience through AI helps customize user interfaces to suit individual behaviors and preferences.

The integration of sophisticated UX/UI design principles with AI technologies in 'Endiet' aims to enhance the app's effectiveness and user satisfaction by adapting to users' evolving health conditions and providing continuous support and engagement. This combination is intended to pave the way for sustainable health improvements and personalized user experiences, making 'Endiet' a comprehensive tool for managing obesity.

In Table 1, AI technologies that can be integrated into the critical features extracted through the Design Thinking process are compiled. This section reviews the current technological levels and application of AI technologies applicable to each key feature.

Table 1 Key Features of the 'Endiet' Application and Applicable AI Technologies

Key Features of 'Endiet'	AI Technologies	Application Examples
AI Visualization of Post-Weight Loss Appearance	Image Processing, Generative AI	Predicts changes in appearance post-weight loss, enhancing motivation through visual transformation previews.
Recommended Routine Service	Predictive Analytics, Machine Learning	Analyzes user data to create personalized lifestyle and meal plans, helping users adhere to health goals.
Accurate Diagnosis of Obesity Types	Classification Algorithms, Machine Learning	Categorizes user profiles into obesity types, akin to personality types, aiding in personalized health strategies.
AI Customized 1:1 Diagnosis and Prescription	Natural Language Processing, Expert Systems	Provides tailored health advice and connects users with medical professionals as needed, based on personalized health assessments.
Emotional Support through AI Emotion Analysis Model	Sentiment Analysis, Emotional AI	Assesses users' emotional states from their inputs, offering appropriate emotional support and interventions.

4.2. Application Examples of AI Technologies

Following the integration of advanced AI technologies, the ‘Endiet’ application leverages these innovations to enhance both user experience and effectiveness. Based on the AI technologies listed in Table 1, research was conducted to examine how these technologies are currently being implemented in the app market. Below are the practical applications of these technologies in real-world scenarios:

- AI Visualization of Post-Weight Loss Appearance:** This function lets users take a current body photo of themselves. Then, the application uses Image Processing and Generative AI technologies to create new data that predict users' appearance after dieting. Visualizing potential post-diet appearance can positively impact user motivation and adherence to health routines. Recent research on faces has shown that it is possible to create high-quality three-dimensional images using artificial intelligence models (Kang, 2022), so it is expected that this operation can realistically be shown to users. For example, ‘ModiFace’ offers advanced facial visualization tools for cosmetics and aesthetic procedures. The app allows users to upload their photos and apply different cosmetic products and hairstyles or even simulate medical aesthetic procedures virtually to see possible outcomes before any real-life application by using Image Processing and Generative AI (Figure 4).



Figure 4 Example of Applying Various Makeup using AI in the ModiFace app, via PR Newswire (<https://kr.prnasia.com/story/97248-9.shtml/>)

- Recommended Routine Service:** Daily missions based on users' routines are designed to provide users with a sense of accomplishment and maintain engagement. Apps like ‘Noom’ analyze daily user activity and dietary inputs to tailor personalized wellness plans, effectively supporting users in achieving their health goals through machine learning insights (Figure 5).

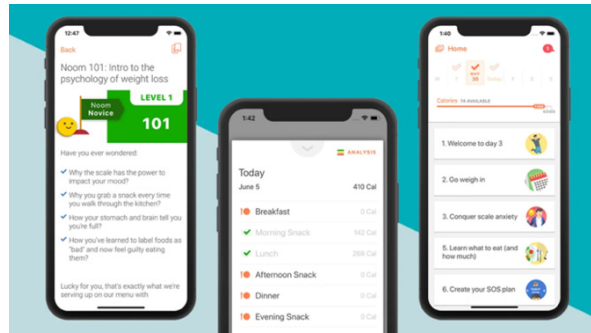


Figure 5 Example of the Noom Application Showcasing Personalized Wellness Plans, via Healthline (<https://www.healthline.com/nutrition/noom-diet-review#getting-started>)

- Accurate Diagnosis of Obesity Types:** This feature may help users understand their obesity condition precisely and assist them in planning accordingly. As an example of using user type classification, 'Spotify' uses AI technology to classify and recommend music to users. The platform employs machine learning algorithms to analyze users' listening habits, categorize songs based on various attributes (genre, mood, and tempo), and create personalized playlists. For example, Spotify's "Discover Weekly" feature uses collaborative filtering and natural language processing to classify songs and predict which new tracks a user might enjoy based on their past behavior and similar users' preferences. This classification and recommendation system can directly relate to the app's use of AI for personalized health guidance, where user data is analyzed to provide tailored recommendations and insights (Figure 6).

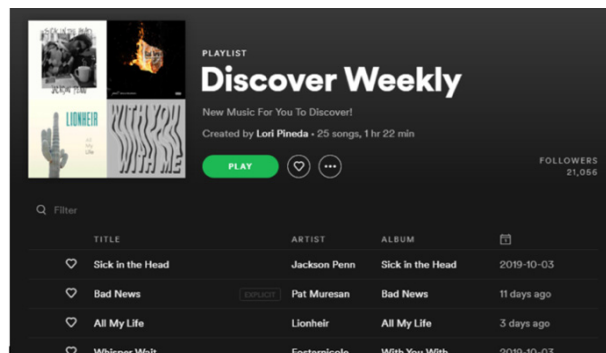


Figure 6 Spotify's Discover Weekly Feature, via GitHub (<https://djinit-ai.github.io/2020/04/16/Spotify%27s-algorithm.html>)

- AI Customized 1:1 Diagnosis and Prescription:** Utilizing AI with machine learning, this functionality offers personalized consulting at every stage of the dieting process. It aims to prevent users from encountering misleading information, assisting them with accurate

diagnoses. Platforms like Babylon Health use AI to offer virtual consultations and health assessment services. Their AI system asks users questions about their symptoms and provides medical advice or a consultation with a healthcare professional. Babylon’s AI system can also help manage chronic diseases by monitoring patients’ health data and sending alerts if a potential issue is detected (Figure 7).

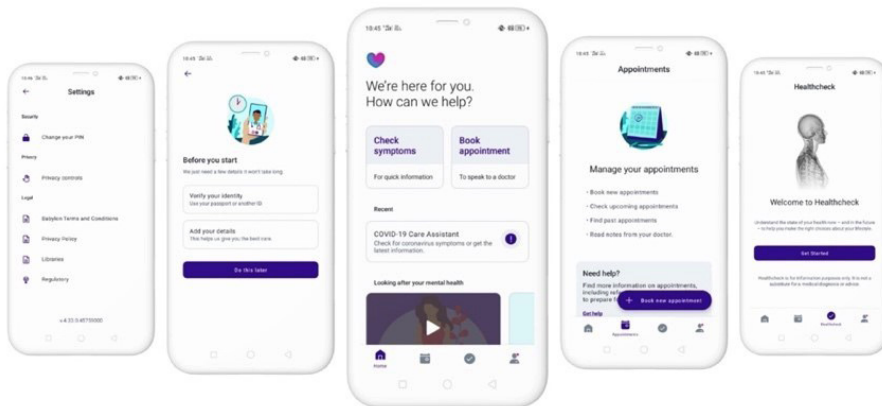


Figure 7 Image of Babylon Health Application, via Excellent Web World (<https://www.excellentwebworld.com/best-app-of-the-week/babylon-health-app/>)

- **Emotional Support through AI Emotion Analysis Model:** AI will be used to support emotional challenges that may arise during obesity management. It is designed to help users bypass frustration and continue their dieting efforts successfully. Mental health apps such as ‘Ginger’ use emotional AI to provide on-demand mental health support, combining AI with human therapists. The AI component analyzes user messages to detect mood and emotional state, enabling timely intervention by human therapists when necessary (Figure 8).

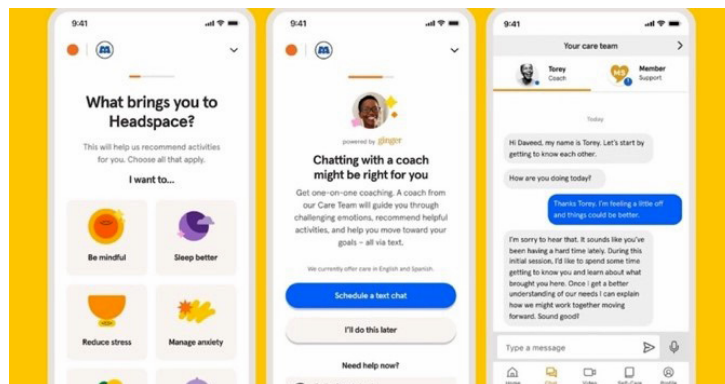


Figure 8 Image of Headspace Care (Ginger) Application, via MobiHealthNews (<https://www.mobihealthnews.com/news/headspace-health-expands-care-services-outside-us>)

5. Design and Development Overview

The structure (Figure 9) and flow chart (Figure 10) were established based on the re-search and ideation to visualize the concept. Using this as a foundation, I created prototypes and conducted usability tests to verify the usability and creativity of the critical features.

5.1. Structure and Flow Chart

This section outlines the underlying structure that facilitates personalized user engagement and a comprehensive visual representation of the user flow within the Endiet app.

Fundamentally, the operating principle of ‘Endiet’ involves users providing various usage data, either entered manually or tracked automatically. The AI utilizes multiple technologies such as Image Processing, Machine Learning, and Natural Language Processing (NLP) to analyze the data and recognize patterns. It then offers optimized recommendations to the user and interacts with them to receive feedback. Endiet’s integrated system leverages multiple AI technologies to provide personalized dietary recommendations based on user data.

The ‘Endiet’ app, designed for the user’s convenience, starts with a Splash Screen offering options to Log in or Sign up. New users undergo Identity Verification during signup, followed by a Question Screen where they can opt to share their account using a Share Code. After registration, users will answer ‘Diet Type Assessment’ to get their diet type results.

The Home screen offers quick access to key features such as Quick Challenge, Status Review, Today’s Routine, and AI Diagnosis. These features are organized into categories like Routine Management, Diet Management, Statistics, Community, and My Page. An Action Icon provides quick access to advanced features like AI Weight Changes and 3D Body Photos. The Community tab includes engagement options like Articles and Mental Health Services and a 1:1 Chat function for interacting with other users. ‘My Page’ is a personal dashboard for managing profiles, goals, friends, notifications, and settings.

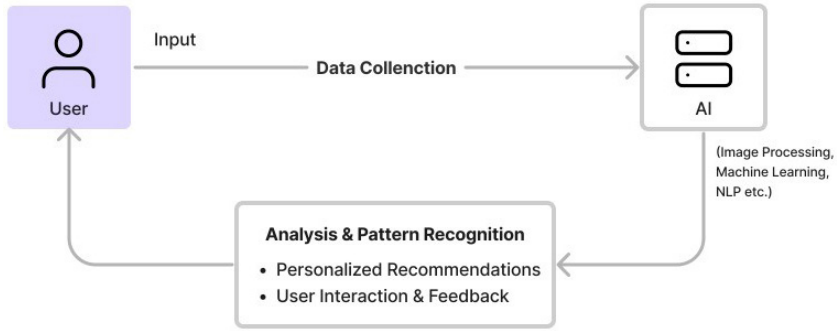


Figure 9 Image of How the ‘Endiet’ System Integrates Multiple AI Technologies to Provide Personalized Dietary Recommendations based on User-Provided Data

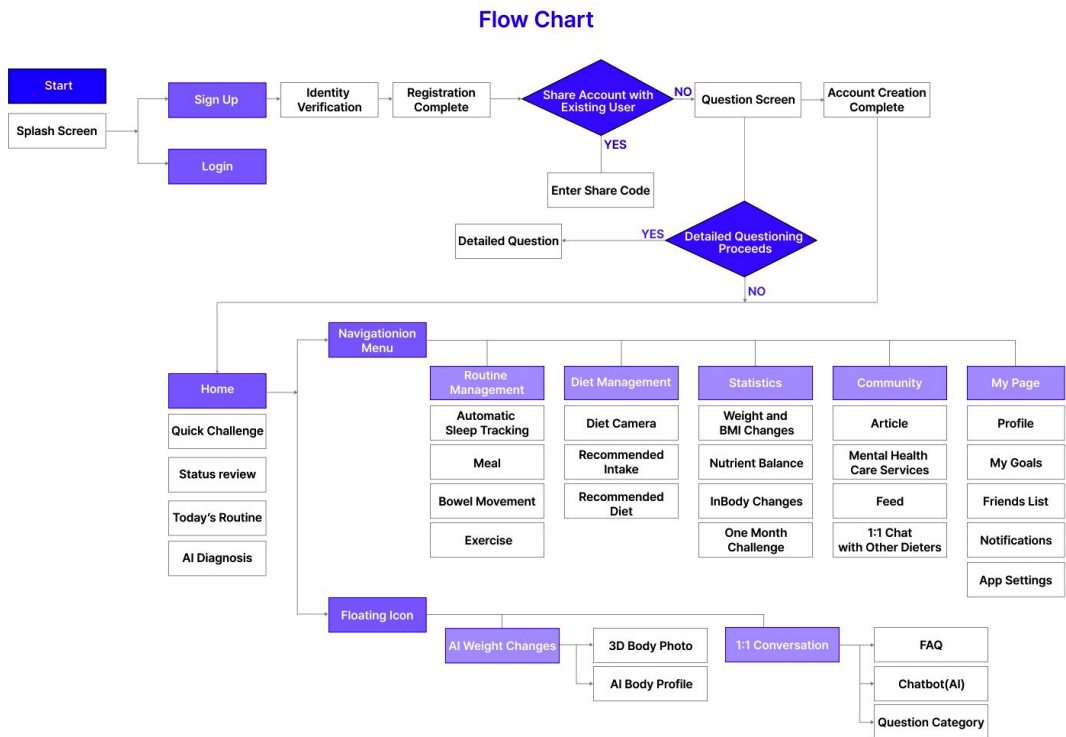


Figure 10 Flow Chart within the ‘Endiet’ Application

5.2. Prototype

The major feature screens for ‘Endiet’ have been created in Figma as Medium Fidelity and Low Fidelity prototypes.

Figure 11 is a prototype image of the screen where users undergo the Diet Type Assessment after completing the sign-up or login process for the ‘Endiet’ application. This feature is an idea derived from the ‘expert interviews’ conducted during the initial research

phase. According to Dr. Rosa J, who participated in in-depth interviews, obesity can be categorized into various groups like MBTI, based on personal information, daily life habits, eating habits, occupational characteristics, sleep habits, and usual physical condition. Based on this, users are classified into 10 diet types using 20 foundational questions derived for categorizing the types. Users answer these questions during the onboarding stage and receive their results based on their responses.

Since this is one of the fun features of the app, user-friendly language and illustrations were used. Additionally, efforts were made to design the layout as simply and straightforwardly as possible, avoiding complexity. After completing the Diet Type Assessment, users are directed to the Home screen, where they are encouraged to proceed with a more in-depth assessment for a more accurate diagnosis and prescription. Cards are placed to guide users to complete the assessment naturally. Furthermore, the home screen is personalized, displaying differently for each user.

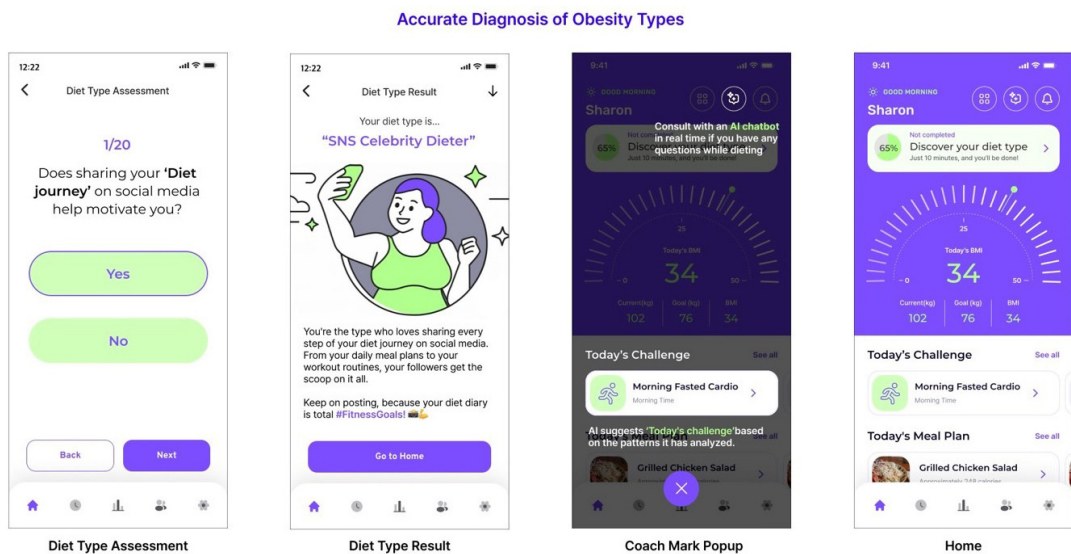


Figure 11 Prototype Image of Diet Type Diagnosis within 'Endiet'

Figure 12 is the screen where users can take a photo of their current body condition, and the AI predicts what their body will look like at their goal weight, generating a body profile. Upon entering this screen, users receive an explanation of the feature and are guided on taking photos. Based on this guidance, users take their pictures, and the AI then transforms these into a predicted body profile of their successful diet outcome.

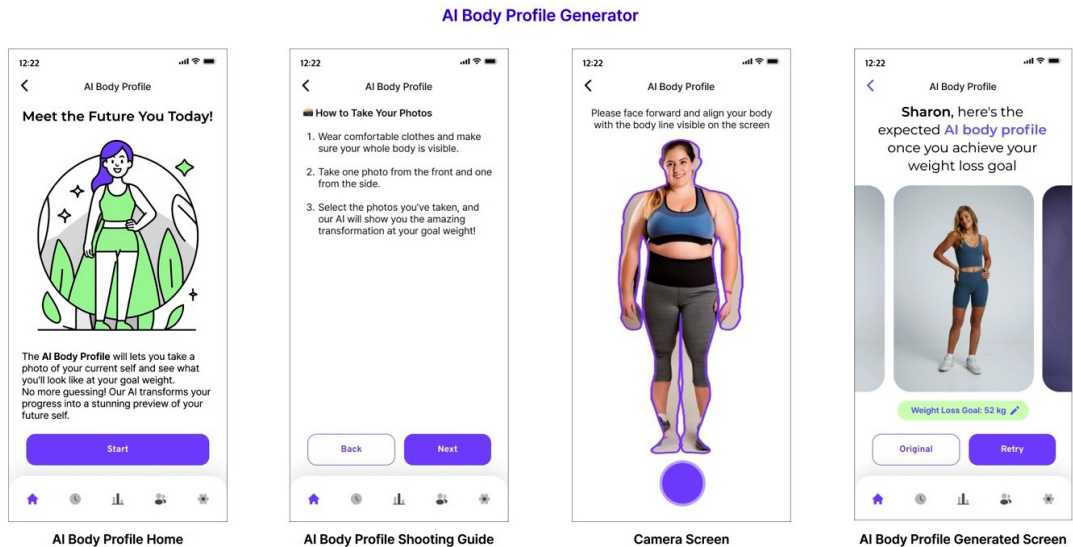


Figure 12 Prototype Image of AI Body Profile Generator within 'Endiet'

6. Usability Testing

The usability testing for the 'Endiet' application prototype designed in Figma involved five participants from the 20s and 30s demographics. This test was conducted as a remote prototyping test via Zoom, allowing the observation of how participants interacted with the prototype in real-time. Here's a detailed breakdown of the tasks, procedures, and observations from this session:

6.1. Objectives of Usability Testing and Test Items, Questions

The usability testing for the 'Endiet' application focused on four primary objectives: 'Ease

of Use’, assessing how intuitively new users could interact with the app; ‘Effectiveness of Features’, evaluating how the AI-driven features met health goals; ‘Engagement and Motivation’, measuring the app’s ability to motivate users towards their health objectives; and ‘Accuracy and Personalization’, checking the precision of AI functionalities and the personalization of health advice. These goals ensured the app was both practical and user-friendly.

Participants were asked to perform the following tasks while their interactions were observed via Zoom: Task 1 Initial Setup and Onboarding (Conducting questions to identify dieter types), Task 2 Interaction with AI 3D Visualization, Task 3 Use of Recommended Routine Service, Task 4 Interaction with AI Diagnosis and Prescription and Task 5 Use of Emotional Support Screen. Testers were instructed to complete each task and immediately answer follow-up questions, rating their difficulty on a 5-point scale (easy = 0, difficult = 5).

Table 2 Usability Testing Questions

Task	Usability Testing Questions
Task 1	Q1. Do you think the registration process went smoothly?
	Q2. Did you experience any difficulties while answering questions to diagnose your diet type?
Task 2	Q1. How do you feel about the visual representation of your post-weight loss appearance?
	Q2. Did this visualization help increase your motivation to reach your health goals?
Task 3	Q1. How easy was it to understand and follow the recommended meal and lifestyle plans?
	Q2. Did you find the recommendations personalized to your needs?
Task 4	Q1. Is it clear that this screen is for AI diagnosis and prescription through chat?
Task 5	Q1. Do you think the items provided on the emotional analysis and support screen are appropriate?

6.2. Usability Test Results

Below (Table 3) is the revised Results Table summarizing the usability testing conducted using a prototype of the ‘Endiet’ application, which lacked the full AI implementation. This limitation might have affected the depth and accuracy of feedback on AI-specific functionalities but provided valuable insights into user interface design and user interactions.

Table 3 Usability Test Results

Task	Ease of Use (Avg)	Effectiveness (Avg)	User Satisfaction (Avg)	Key Insights and Improvement Suggestions
Task 1	4.2	3.8	4.0	Smooth process but needs more data handling transparency.
Task 2	4.0	3.6	3.4	Positive motivation effects, but realism in visualization is needed.
Task 3	3.8	3.4	3.6	Clarity appreciated, more customization desired.
Task 4	3.6	3.2	3.2	Needs clearer AI functionality indication.
Task 5	3.4	3.8	3.6	Good emotional support but algorithm needs refinement.

The usability test highlighted the application's user-friendly design and the potential motivational impact of its features. Despite the prototype's limitations in fully showcasing AI capabilities, participants generally responded positively to the interface and concept. However, feedback pointed towards the need for:

- **Enhanced Realism and Accuracy:** Especially in AI-driven features like the 3D visualization and emotional support.
- **Increased Customization:** Users expressed a desire for more personalized recommendations and options within the routine service and diet diagnosis.
- **Clarity in AI Functionalities:** Particularly for the diagnosis and prescription chat interface, indicating a need for clearer communication of AI roles.

This session underscores the importance of further testing with a fully functional AI to validate and refine the AI-specific features based on real-world user interactions and feedback. Adjustments and enhancements based on this preliminary feedback will help develop a more user-centric and effective final product.

7. Conclusion

The 'Endiet' app showcases how integrating AI with UX/UI design can substantially enhance the effectiveness of health applications, particularly in managing obesity. This integration enables accurate health recommendations and significantly boosts user engagement

by providing personalized, intuitive interfaces. The success of 'Endiet' suggests a model for future developments in health technology, where AI can dynamically adapt to user inputs and conditions, promoting sustained interaction and adherence to health guidelines, which could set new standards in health application design, emphasizing the need for deeply user-centric technologies.

However, while focusing on UI/UX design with AI shows promise, the outcomes achieved so far could be more robust. This limitation highlights the need for further improvement and is important to mention. Future research could explore broader applications of AI in diverse health contexts and with varied populations to validate and extend these findings.

Future efforts for the 'Endiet' app will prioritize further integration of AI to enhance and personalize user interactions. This includes developing a robust design system to enhance consistency and accessibility throughout the app, which will adapt based on user feedback and evolving design and health trends. Additionally, plans to advance AI algorithms aim to improve the prediction of user behaviors and health outcomes and further integrate UX principles into AI processes to ensure the app is more intelligent and intuitive. Also, Emotional AI will be explored to adjust app interactions based on detected user moods and stress levels. Finally, establishing partnerships with health professionals and tech platforms is targeted to enhance the app's capabilities and data integration, positioning 'Endiet' as a central hub for personalized health management.

Future investigations should examine the long-term effects of such integrations on user health outcomes and system usability, explore the ethical implications of AI in handling personal health data, and develop more sophisticated AI algorithms that can cater to a broader spectrum of individual differences. These research directions promise to refine the effectiveness of health apps like 'Endiet' and contribute to the wider discourse on integrating technology with personal health management, potentially leading to significant advancements in the field.

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AI를 활용하여 향상된 UX를 제공하는 총체적인 접근법의 다이어트 어플리케이션

‘엔다이어트’ 어플리케이션 사례 연구

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초록

본 연구는 사용자 경험(UX)과 인공지능(AI)을 통합하여 비만 관리를 향상시키기 위한 어플리케이션 ‘엔다이어트(Endiet)’의 컨셉을 논의한다. 현재 시장의 건강 어플리케이션은 종종 개인 맞춤형 관리가 부족하여 사용자 참여 및 결과가 미흡한 경향이 있다. 본 논문에서 제안하는 ‘엔다이어트’는 AI를 활용하여 개인화와 직관적인 UX 디자인을 제공함으로써 비만 관리에 대한 총체적인 접근 방식을 제공한다. 설문 조사와 심층 인터뷰를 포함한 포괄적인 사용자 연구를 통해, 연구는 주요 사용자의 필요와 선호도를 파악하여 앱의 디자인과 기능을 정보화했다. ‘엔다이어트’의 AI 융합 기능에는 개인 맞춤형 식단 계획, 실시간 피드백, 건강 예측이 포함되어 사용자에게 실시간 다이어트 정보를 제공해주고 지속 가능한 솔루션을 제안하고자 한다. 연구 결과는 AI와 사용자 중심 디자인을 결합하여 효과적인 건강 어플리케이션을 만들 수 있는 잠재력을 보여준다. 이 연구는 개인 맞춤형 의료에서 AI의 실용적 구현을 보여주며, 건강 기술의 미래 개발에 대한 통찰력을 제공하고자 한다.

키워드

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