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Exploring Exerciser Experience with Personalized Workout Plans in AI-Powered Fitness Apps

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Abstract. With the surge of AI applications in the fitness industry, AI-powered fitness apps that provide personalized features are emerging as popular tools for exercisers. One such feature is the personalized workout plan, which uses specially designed algorithms to automatically create workout plans that are pertinent to exercisers' demographics, fitness goals, fitness preferences, and skill levels. Despite its growing use in AI-powered fitness applications, there are still few studies examining exerciser experience with it. To fill this gap, this research conducted content analysis on exercisers' online reviews of AI-powered fitness apps that are relevant to the feature. The analyses reveal 4 themes: exerciser information and feedback collection, workout plan generation and adaptation, workout data tracking and analysis, and workout data presentation. Furthermore, this research extracted 8 sub-themes within the 4 themes and enumerated the key points of view for each of these themes and sub-themes. This research contributes to the literature on fitness apps by illuminating exerciser experience with the emergent feature. It also contributes to the literature on human-AI interaction by delving into the unique context of digital fitness and generating fresh insights on the interaction between exercisers and AI-powered fitness apps. The findings of this research provide valuable insights into the factors that drive and hinder exercisers from adopting and continuously using this novel feature.

Keywords: Personalized Workout Plans, AI-Powered Fitness Apps, Online Reviews, Content Analysis, Exerciser Experience

1 Introduction

With the growing desire for healthier lifestyles, consumers' prioritization of health-conscious behaviors and physical activity levels has improved significantly over the past decade. Amidst this evolving landscape, fitness apps gained global market penetration due to their high availability, ease of use, and low cost (Deng et al., 2024a; Deng et al., 2024b; James et al., 2019). Notably, fitness apps made it into the top 10 fitness trends for the first time in 2024, coming in at the 7th, a considerable leap from the 20th in 2023 (A'Naja et al., 2024). This trend underscores the transformative role of digital technologies in reshaping the fitness industry.

As the rapid growth of AI applications in the fitness industry, AI-powered fitness apps are emerging as popular personalized tools for exercisers to track progress, optimize workout plans, maintain exercise adherence, and obtain nutritional recommendations (Du et al., 2025; Feng et al., 2024; Wang et al., 2024). In other words, AI-powered fitness apps serve as personal trainers for exercisers, offering them the ability to efficiently and effectively manage their fitness journey (Huang and Yang, 2020). Compared with human personal trainers, AI-powered fitness apps are not only more cost-effective but also provide ubiquitous access, overcoming the temporal constraints and geographic limitations.

The personalized features offered in most AI-powered fitness apps, such as personalized workout plans, real-time virtual coaching, and intelligent nutritional recommendations, enhance exerciser experience and engagement by tailoring fitness services to exercisers' characteristics (Du et al., 2025; Kwok et al., 2021). In particular, the personalized workout plan feature automatically creates workout plans that are pertinent to exercisers' demographics, fitness goals, fitness preferences, and skill levels using specially designed algorithms (Asgari Mehrabad, et al., 2025). Personalized workout plans are both flexible and dynamically adaptable. Therefore, they may significantly enhance exercisers' motivations and commitments, allowing them to achieve long-term success in fitness.

Although the personalized work plan feature is becoming increasingly prevalent in AI-powered fitness apps, empirical research examining it remains scarce. To fill in this gap, this research explores exerciser experience with the personalized workout plan feature by conducting content analysis of the online reviews relevant to this feature. Specifically, this research collected 46,311 exercisers' online reviews of four AI-powered fitness apps from Google Play (i.e., Freeletics, Fitbod, Jefit, and Asana Yoga) and identified 414 online reviews relevant to the personalized workout plan feature (Kim and Lee, 2023; Haggag et al., 2022). To understand exercisers' experience with the feature, this research intends to answer the research questions: What are the major topics discussed in exercisers' online reviews relevant to the personalized workout plan feature?

To address these questions, we conduct a content analysis of the 414 online reviews relevant to the personalized workout plan feature. Our analysis reveals 4 themes from the online reviews: exerciser information collection, workout data tracking and analysis, workout plan generation and adaption, and workout data presentation. Furthermore, we identify 8 sub-themes within the 4 themes. This research contributes to the literature on fitness apps and human-AI interaction. For the literature on fitness apps, this research expands the extant literature by illuminating exerciser experience with the emergent feature. For the literature on human-AI interaction, this research delves into the unique context of digital fitness and generates fresh insights on the interaction between exercisers and AI-powered fitness apps.

The remainder of this research is structured as follows. First, we summarized the research on AI-powered fitness apps and personalized workout plans. Second, we elaborate on the method used in this research. Third, we present the results of the content analysis. Finally, we conclude this research with discussions and conclusions.

2 Literature review

2.1 AI-Powered Fitness Apps

AI-powered fitness apps use emerging AI technologies, such as machine learning, deep learning, computer vision, and natural language processing, to help exercisers track their progress, optimize their workouts, maintain exercise adherence, and obtain nutritional recommendations (Chew, 2022; Du et al., 2025; Lee et al., 2024; Lee and Lin, 2023; Tseng et al., 2023). By incorporating personalized features including personalized workout plans, real-time virtual coaching, and nutritional recommendations, AI-powered fitness apps are capable of enhancing exerciser experience and engagement throughout the entire fitness journey.

The personalized features aim to provide exercisers with enhanced experience throughout the entire fitness journey that encompasses pre-workout planning, workout execution, and post-workout assessment. Specifically, the personalized workout plan feature generate tailored workout plans regarding exercisers' demographics, fitness goals, fitness preferences, and skill levels, etc. (Asgari Mehrabadi et al., 2025; Saraç et al., 2025). The real-time virtual coaching feature provides immediate, personalized feedback and guidance to exercisers during a workout session, mimicking the experience with a human personal trainer (Flores et al., 2021; Feng et al., 2024; Kuru, 2024; Kwok et al., 2021; Mokmin and Jamiat, 2021). The intelligent nutritional recommendations feature generates personalized meal plans that are appropriate for the exercisers' energy intake and nutritional requirements (Zhang et al., 2022).

2.2 Personalized Workout Plans

A personalized workout plan consists of daily workout schedules tailored for a given exerciser within a specific period of time. A daily workout schedule contains detailed workout guidelines for one or multiple workout sessions within a single day. A workout session refers to a single, structured period of physical exercise designed to achieve specific fitness goals, such as improving strength, endurance, or flexibility. It typically includes a warm-up, a main exercise component, and a cool-down. A workout session usually lasts for 30-60 minutes. For instance, Freeletics generates a two-week personalized workout plan by default. Usually, AI-powered fitness apps will generate a new personalized workout plan when an exerciser finishes the current one.

3 Method

3.1 Data collection

Online reviews are valuable sources to extract user experience in a variety of setting, such as e-commerce and online education (Du et al., 2021; Liu et al., 2024; Wang et al., 2023). Therefore, we use exercisers' online review of AI-powered fitness apps as

the data for our analysis. In particular, we first identified four AI-powered fitness apps that offer the personalized workout plan feature in Google Play, including Freeletics, Fitbod, Jefit, and Asana Yoga. Using a self-developed scraper, we collected 46,311 exercisers' online reviews of the four AI-powered fitness apps from Google Play. To extract the online reviews for thematic and sentiment analysis, we follow three steps. First, we obtained 46,288 reviews written in English after removing 23 online reviews written in other languages. Then, to extract the online reviews relevant to the personalized workout plan feature, we kept 414 online reviews after removing the online reviews shorter than 300 characters.

3.2 Content Analysis

To identify the major themes relevant to the exerciser experience with the personalized workout plan feature in AI-powered fitness apps, we conducted a content analysis on the 414 selected online reviews with the inductive procedure. The inductive procedure is suitable for the situations where there is insufficient knowledge or the knowledge is fragmented. It consists of open coding, interpretive coding, and abstraction (Elo and Kynga's, 2008).

Specifically, two researchers first independently open-coded the data using the NVivo 14 software. Second, the coded units were carefully examined and compared for similarities and differences, which generated sub-categories of the codes. Third, a constant comparison process was applied for sub-categories to create categories of the codes with a higher level of abstraction. The two researchers discussed the results of the coding and re-examined the areas of disagreement until they reached a consensus. The above steps resulted in a coding book. According to the coding book, two researchers coded the 414 online reviews independently. Then, they discussed the coding results and identified 4 themes and 8 sub-themes.

4 Results

Table 1 presents the results of the content analysis. The four themes we identified in the online reviews that are pertinent to the personalized workout plan function include (1) exerciser information and feedback collection, (2) workout plan generation and adaptation, (3) workout data tracking and analysis, and (4) workout data presentation. We elaborate on each theme and the sub-themes within it in the following part of this section.

Table 1. The identified themes and sub-themes

Theme	Description	Sub-theme	Description and key design points
Exerciser information and feedback	Collect exercisers' personal information and feedback	Personal information collection	Collect exercisers' personal information, such as demographics, fitness goals, fitness preferences, and skill

collection			levels, etc.
		Exerciser feedback collection	Collect exercisers' feedback on the personalized workout plans after their completion of the plans
Workout plan generation and adaptation	Generate and adapt personalized workout plans	Workout plan generation	Generate personalized workout plans based on exercisers' demographics, fitness goals, fitness preferences, and skill levels, etc.
		Workout plan adaptation	Adapt workout plans according to exercisers' feedback after their completion of the plans
Workout data tracking and analysis	Track and analyze exercisers' workout data	Workout data tracking	Track exercisers' workout data precisely in real-time
		Workout data analysis	Analyze exercisers' workout data to produce fitness metrics
Workout data presentation	Present exercisers' workout data	Data presentation within workout sessions	Present workout data within workout sessions in real-time
		Data presentation after workout sessions	Present workout data after workout sessions

4.1 Theme 1: Exerciser Information and Feedback Collection

The first theme we identified in online reviews from exercisers is “exerciser information and feedback collection.” The first step in developing personalized workout plans is collecting personal information from exercisers. Most AI-powered fitness apps collect exercisers' general information, such as demographics, fitness objectives, fitness preferences, and skill level, etc. Some AI-powered fitness apps also collect more professional information from exercisers, such as targeted muscle groups, injury history, and limitations of training. It's noteworthy that the applicability of the personalized workout plans to exercisers depends largely on the richness and accuracy of exercisers' information. Therefore, it is crucial to make informed design decisions on the content and format of the information to be collected. Meanwhile, the interface for collecting the information not only needs to be clear, user-friendly, and easy to use but also should avoid raising exercisers' privacy concerns.

We identified two sub-themes in this theme: “personal information collection” and “exerciser feedback collection.” The former theme focuses on collecting exercisers' personal information, such as demographics, fitness goals, fitness preferences, and skill levels, etc., before the generation of initial personalized work plans. The latter theme concentrates on gathering feedback on the personalized workout plans from exercisers after they complete the current workout plans. Usually, AI-powered fitness apps will adjust subsequent workout plans based on the feedback,

making them more suitable for exercisers. The feedback often involves the perceived difficulty of the workout plan, the expected adjustment to targeted muscle groups, and the requirements to eliminate or substitute movements. Similar to the collection of the personal information before the generation of initial personalized work plans, the gathering of feedback after the completion of them also needs to be clear, user-friendly, and easy to use. In addition, it is expected to be logical, consistent, and free of excessive response submission requirements.

4.2 Theme 2: Workout Plan Generation and Adaptation

The second theme we identified in online reviews from exercisers is “workout plan generation and adaptation.” It involves generating personalized workout plans based on exercisers’ personal information and adapting the workout plans according to their feedback. To keep exercisers motivated, the personalized workout plans should be appropriate. On one hand, exercisers may become bored with easy workout plans. On the other hand, workout plans that are too challenging can be discouraging and increase the risk of injury. Furthermore, as repeating similar workouts over and over again might get boring, continuous adaptation of workout plans to exercisers’ changing fitness goals, fitness preferences, and skill levels is key to enhancing exercisers’ engagement, increasing their satisfaction, and fostering their sustained adherence.

We identified two sub-themes in this theme: workout plan generation and workout plan adaptation. The former theme focuses on the generation of initial personalized workout plans based on the personal information provided by exercisers. The latter theme concentrates on the adaptation of the personalized workout plans according to exercisers’ feedback after their completion of the work plans. Specifically, personalized workout plans need to be clear and easy to follow, with intuitive guidelines (e.g., graphical and video demos) on each step within workout sessions. For the workout plans that need to use fitness equipment, the guidelines need to include the pictures of the equipment and the detailed usage instructions of it. Accordingly, exercisers can understand the workout plans accurately and comprehensively, being capable of using them to facilitate their fitness effectively and efficiently.

4.3 Theme 3: Workout Data Tracking and Analysis

The second theme we identified in online reviews from exercisers is “workout data tracking and analysis.” It involves tracking the workout data of exercisers precisely in real-time during their workout process and analyzing these data to produce the fitness metrics based on the professional fitness knowledge, which enables exercisers’ self-quantification and self-reflection. Instant feedback on exercisers’ current workout status can keep exercisers informed and make them aware of the areas requiring immediate adjustment. Meanwhile, long-term workout data tracking and in-depth analysis on workout data can provide exercisers with valuable insights into their

overall fitness trajectory, health and fitness metrics changes, and the relationship between their efforts and outcomes.

We identified two sub-themes in this theme: “workout data tracking” and “workout data analysis.” The former theme focuses on the tracking of exercisers’ workout data precisely in real-time. The latter theme concentrates on analyzing exercisers’ workout data to produce fitness metrics. For workout data tracking, it’s important that workout data tracking be timely and accurate, providing appropriate and credible feedback to exercisers. Delayed or inaccurate feedback can lead to exercisers’ misinterpretation of their workout progress and negatively impact their fitness efficiency and effectiveness. For workout data analysis, it is critical that the method of data analysis must comply with professional fitness knowledge. Therefore, exercisers will consider the results of the data analysis as credible and reliable.

4.4 Theme 4: Workout Data Presentation

The fourth theme we identified in online reviews from exercisers is “workout data presentation.” It involves informing exercisers about their fitness progress by presenting and visualizing the workout data within and after workout sessions. Appropriate feedback in various scenarios is important for exercisers to understand their fitness capabilities and progress. For instance, instead of presenting a single countdown timer, the rest screen during breaks within a workout session needs to show more valuable information, such as the workout progress. Accordingly, well-designed workout data presentation is critical for boosting exercisers’ motivation and fostering their sustained adherence (Constantiou et al., 2023).

We identified two sub-themes in this theme: “data presentation within workout sessions” and “data presentation after workout sessions”. The former theme focuses on presenting workout data within workout sessions in real-time. The latter theme concentrates on presenting workout data after workout sessions. Except for the instant presentation of the statistical data about the current workout session, the graphical presentation of long-term fitness data that can reflect the trajectory of exercisers’ fitness progress over time is also crucial for informing exercisers about their accumulated efforts and enhancing their sense of accomplishment.

5 Discussions and Conclusions

This research explored exerciser experience with the personalized workout plan feature by analyzing the major themes covered in exercisers’ online reviews of AI-powered fitness apps. Using the content analysis method, this research identified 4 themes and 8 sub-themes. We summarized the key views for these themes and sub-themes. To the best of our knowledge, this research is among the first to empirically investigate exerciser experience with the personalized workout feature in AI-powered fitness apps.

Theoretically, this research contributes to the literature on fitness apps by uncovering exerciser experience with the emergent feature. It also contributes to the

literature on human-AI interaction by delving into the unique context of digital fitness and generating fresh insights on the interaction between exercisers and AI-powered fitness apps. Empirically, the findings of this research provide valuable insights into exercisers' experience with the personalized workout plan feature in AI-powered fitness apps. Thus, designers can have a deeper understanding of the factors that drive and hinder exercisers from adopting and continuously using this novel feature. Meanwhile, the findings of this research provide actionable directions for enhancing exercisers' experience and increasing their satisfaction by improving the feature.

While this research offers several intriguing findings for enhancing the personalized workout plan feature in AI-powered fitness apps, it has several limitations that warrant attention in future research. First, this research only examined the personalized workout plan feature in AI-powered fitness apps, ignoring other emerging personalized features. Future works can investigate exerciser experience with these features. Second, our analysis was based on exercisers' online reviews of four AI-powered fitness apps, which might limit the generalizability of the findings. Further studies can include exercisers' online reviews of more AI-powered fitness apps. Third, this research performs data analysis using content analysis, which makes it limited in understanding details and underlying mechanisms. Future works can adopt a mixed-method design to delve deeper.

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