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Impact of Fitness App Experiences on Users' Overall Well-Being through Joy, Usefulness and Social Connectivity

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Abstract. Fitness applications have become essential tools for individuals seeking to improve their physical and mental health, yet their impact on overall well-being remains underexplored. This study examines how fitness apps' perceived joy, usefulness, and social connectivity features influence users' overall well-being. Employing a quantitative approach with data from 385 fitness app users in Nepal, the study used descriptive and causal research designs. Multiple regression analysis revealed that all three factors significantly predicted overall well-being, with social connectivity demonstrating the most substantial effect ($\beta = 0.515$), followed by perceived joy ($\beta = 0.236$) and perceived usefulness ($\beta = 0.170$). Together, these factors explained 71.8% of the variance in users' well-being. The findings suggest that fitness app developers should prioritize features that enhance social interaction while maintaining enjoyable and useful experiences. This study contributes to the digital health literature with evidence of how specific app attributes affect an individual's well-being with physical health. In practice, creating more effective fitness applications that support users' physical and psychological health is relevant.

Keywords: Digital health, mobile technology, user experience, mental health, social engagement

1. Introduction

Technological innovations in everyday life have continuously supported the world, transforming the health and wellness industry (Aceto et al., 2020). Fitness applications (fitness apps) have become increasingly popular tools for individuals seeking to improve their physical health (Higgins, 2016), offering a convenient and accessible way to engage in regular exercise (Mitchell et al., 2024), monitor health metrics, and track fitness progress (Gulati et al., 2024). These apps have moved beyond their initial function as exercise trackers and have evolved to include features that promote holistic health (Asimakopoulos et al., 2017), such as personalized workout plans, nutritional guidance, mindfulness practices, and social interaction capabilities (Dahal, 2018; Lieffers et al., 2021). As the use of fitness apps continues to grow, it is essential to examine their impact on physical health and their broader influence on users' overall well-being, including psychological and emotional health. Fitness apps have emerged as an indispensable tool for millions worldwide who seek to maintain or improve their health and fitness. According to recent trends, the global market for fitness apps continues to expand as more people turn to these digital platforms for assistance in achieving their health and wellness goals (A'Naja et al., 2024; Joshi et al., 2024; Kao & Liebovitz, 2017; Shi et al., 2024). The growing accessibility and affordability of smartphones, combined with the increasing interest in health-conscious living (Rameshkkumar et al., 2024), have made fitness apps a viable solution for individuals from diverse backgrounds and demographics (Nogueira-Rio et al., 2024). Apps have workout routines, exercise tracking, and progress monitoring (Kuru, 2024). There is growing recognition of these apps' broader role in shaping users' overall well-being (Hosseini et al., 2024).

Overall well-being includes physical health, psychological well-being, and social aspects of one's life (Costanza et al., 2007; Keyes & Waterman, 2003; Riediker & Koren, 2004). Fitness apps can impact emotional and social well-being (Direito et al., 2015; García-Fernández et al., 2020) and improve physical health. The impact of these apps on users' overall well-being is determined by factors such as enjoyment, perceived usefulness, and social connectivity (Szinay et al., 2020; Tu et al., 2019; Yuan et al., 2015). These factors influence how users interact with the app, their satisfaction with the experience, and their likelihood of returning over time. Perceived joy refers to users' enjoyment, pleasure, and satisfaction from using fitness apps (Dhiman et al., 2020; Yin et al., 2022). This includes the emotional benefits of finishing workouts, interacting with the app's interface, and engaging in enjoyable activities that reduce stress, improve mood, and boost motivation (Cornet et al., 2022).

On the other hand, perceived usefulness measures how much users believe the app helps them achieve their fitness goals and improve their physical health (Vinnikova et al., 2020). Users who see the app as helpful for providing actionable insights and supporting their fitness journey are likelier to stay engaged and feel accomplished (Cheng et al., 2019; Szinay et al., 2020). The third key factor is social connectivity, which refers to the sense of interaction, support, and engagement that users get from features such as virtual communities, social sharing, and interactions with other users or virtual assistants (Anderson et al., 2016; Dahal et al., 2025; Dennison et al., 2013; Hamari & Koivisto, 2015; Huang & Ren, 2020). These social elements can help to reduce feelings of isolation, increase motivation, and promote consistency in fitness routines (Asimakopoulos et al., 2017; Tate et al., 2015). The purpose of this study is to understand better how fitness apps affect users' physical health as well as their psychological and social well-being. Integrating enjoyable experiences, useful goal-setting tools, and robust social interaction features can boost user satisfaction and retention. Fitness apps can improve their effectiveness and appeal by addressing users' emotional and social needs, ultimately contributing to overall well-being.

Now, digital health technologies are changing how people manage their health. AI apps have emerged as essential tools for anyone looking to improve or maintain their physical Fitness. These apps include

personalized workout regimens, progress tracking, and health monitoring, making it easier for users to exercise regularly and meet their fitness objectives (Luo, 2024; Yeojin, 2023). While their physical benefits, such as increased exercise behavior and fitness levels, are well documented (Tong et al., 2022; Stevens et al., 2020), the broader implications of fitness apps on users' overall well-being, including psychological emotional, and social aspects, remain unexplored. Exercise apps have the potential to improve overall well-being. For example, Luo (2024) noticed that using fitness apps improves exercise behavior, with social support increasing the impact of self-efficacy on these results. Similarly, Yeojin (2023) found that features such as usefulness, enjoyment, and personalization substantially impact user flow and psychological well-being, increasing users' intentions to continue using the app. Furthermore, Hu et al. (2023) found that personal and social-oriented app features improve exercise adherence and social engagement, increasing subjective well-being. However, these studies focus primarily on physical health and exercise adherence, leaving questions about how emotional and social aspects, such as reported joy, usefulness, and connectivity, influence users' overall well-being.

Social connectedness, mediated via virtual communities and peer or assistant interactions inside fitness applications, has been proven to promote feelings of belonging and support (Ghimire et al., 2024; Hollander et al., 2021; Whelan & Clohessy, 2021). While social support has been shown to promote health behavior change (Williams & Lee, 2018), it is unclear how it influences users' emotional and social pleasure with fitness applications. This is especially noteworthy because empirical research suggests that social and emotional involvement are critical in maintaining long-term app use (Busch et al., 2020; Cai & Li, 2023). Cai and Li (2023) found that upward social comparison mediates app usage and well-being, with self-control reducing the effects. However, some studies, such as Busch et al. (2020), reported that fitness apps had no significant impact on psychological well-being or body awareness, emphasizing additional studies to uncover conditions that lead to beneficial outcomes.

Incorporating advanced features such as AI-driven coaching, virtual communities, and social sharing capabilities has increased the usability of fitness apps. Still, the amount these elements contribute to users' psychological and social happiness remains unknown. Although perceived joy, utility, and social connectivity are essential for user engagement, their impact on overall well-being has received scant attention. Users' enjoyment of the app, belief in its efficacy for reaching health goals, and experience with social interaction inside the app environment may all influence their well-being, although these aspects deserve further exploration (Aboelmaged et al., 2021; Yeojin, 2023). While fitness applications seek to boost overall health, many users struggle to maintain long-term interest. Excessive mobile phone use has been demonstrated in studies to cause negative consequences such as anxiety and bullying (Yilmaz & Bohara, 2023), implying that while physical health may improve, other aspects of well-being may be neglected. The potential hazards and advantages of mHealth interventions, as noted in studies on mental health and mobile app use (Berube et al., 2023; Shrestha et al., 2023), showed the significance of assessing fitness apps' psychological and social components. Thus, while fitness apps have effectively supported physical health, how users perceive and experience their apps' worth in terms of well-being is unknown. The raised question is: how do perceived joy, usefulness, and social connectivity features in fitness apps affect users' well-being?

This study presents recommendations for improving the design and functionality of fitness apps, making them more user-friendly, engaging, and effective. The findings assist developers in creating features that support physical fitness while promoting emotional and mental health. The study indicates that combining enjoyable experiences, practical goal-setting tools, and strong social interaction elements can improve user satisfaction and retention. Theoretically, the study incorporates digital health research and self-determination theory. When thoughtfully designed, it shows how fitness apps can meet users' psychological needs for autonomy, competence, and relatedness. By linking these principles to user

perceptions of joy and social connection, the study broadens SDT's application to digital contexts. Furthermore, incorporating the Technology Acceptance Model (TAM) elements demonstrates how perceived usefulness promotes long-term engagement with health technologies. The findings provide actionable advice for app developers, healthcare providers, and public health advocates. Developers can create more personalized, socially interactive, and motivational app features. Healthcare professionals can recommend apps that follow these principles to improve health program adherence. This study assists in developing integrated and long-term digital fitness solutions by linking app design to user well-being outcomes.

The study has some methodological limitations. Non-probability convenience sampling may limit the capacity to generalize the findings. The study's cross-sectional technique collects data simultaneously, limiting knowledge of long-term effects on well-being and potentially overlooking changes in user attitudes over time. The study is structured into six main sections. The introduction introduces the research topic, objectives, and significance, laying the foundation for the study. The literature review explores existing studies on perceived joy, usefulness, social connectivity, and well-being within the context of fitness applications. The methodology outlines the research design, sampling approach, data collection methods, and analytical techniques. The presentation and analysis section systematically presents and analyzes the findings, assessing the relationships among the key variables. The conclusion highlights the main findings and their implications, while the future scope discusses potential areas for further research to deepen the understanding of fitness apps' impact on well-being. The references section lists all sources cited throughout the paper.

2. Literature Review

Theoretically, Self-Determination Theory (SDT) (Ryan, 2009) states that meeting three core psychological needs, autonomy, competence, and relatedness, has a significant impact on an individual's well-being (Deci & Ryan, 2012; Ryan & Patrick, 2009). Fitness applications meet these demands with personalized goal-setting, progress tracking, and community interaction choices (Villalobos-Zúñiga & Cherubini, 2020). Thus, SDT provides a strong framework to examine how psychological demands might increase users' overall well-being by making them feel more in control, capable, and socially connected (Peters et al., 2018). Positive Psychology supports the research by focusing on the importance of positive emotions, personal strengths, and life satisfaction in developing well-being (Bandura, 2011; Kuppens et al., 2008; Shrestha & Dahal, 2023). Fitness app activities' fun and rewarding nature can significantly enhance emotional and mental health, leading to a stronger sense of accomplishment and satisfaction (Lyubomirsky & Layous, 2013; Ryff, 1989).

The Technology Acceptance Model (TAM) is also used to describe the perceived usefulness and ease of use influence on users' acceptance and long-term engagement with fitness applications (Cai et al., 2022; Huang & Ren, 2020). When users find the app helpful in achieving health and fitness goals and simple to use, they are more likely to adopt and stick with it, improving their health outcomes (Anderson et al., 2016; Dahal et al., 2020; Guner & Acarturk, 2020; Johnson et al., 2016; Sabre Chtourou & Souiden, 2010). Social Cognitive Theory (SCT) supports this study by stressing the role of social factors in behaviour change and mental health (Beauchamp et al., 2019; Joseph et al., 2017; Middleton et al., 2019). Social aspects in fitness apps, such as online fitness groups, peer interactions, and community challenges, foster a culture of mutual encouragement and support, increasing users' sense of belonging and motivation (Rovai, 2002). It can lead to users' social well-being in the virtual world. Thus, the foundation of SDT, Positive Psychology, TAM, and SCT guides the study framework.

Perceived Joy

Perceived joy, consisting of happiness, pleasure, and satisfaction, significantly influences users' interactions with fitness apps, increasing motivation and engagement. Gabbiadini and Greitemeyer (2018) show that fitness tracking apps promote positive attitudes, improve behavioural control, and increase physical activity, resulting in healthier lifestyles. However, analysis does not identify joy as a distinct emotional driver. Similarly, Jin et al. (2022) emphasized the benefits of self-tracking, such as increased motivation, behavior change, and health awareness, but insufficiently differentiated joy from overall satisfaction, limiting knowledge of its unique contribution to user experience. These results show the importance of conducting specific studies into joy's emotional mechanisms in fitness app contexts.

Perceived joy is essential for maintaining user engagement with fitness apps because emotional experiences directly impact usage patterns. Wang et al. (2021) discovered that exciting, performance-based features, such as real-time progress tracking, increase happiness, whereas basic features may cause dissatisfaction, influencing how frequently users interact with apps. However, their research does not look into joy's long-term impact on engagement. Yan et al. (2021) link perceived value, ease of use, and flow experience to continued app use, with satisfaction mediating these relationships. However, they ignore joy's role in fostering flow or sustained interaction. Esmaeilzadeh (2021) demonstrates that gamification strengthens users' IT identities by encouraging data sharing and app use, but the study's focus on gamified contexts limits its applicability to non-gamified settings. While the literature emphasizes joy's influence on engagement, it is unclear about its specific mechanisms, particularly in non-gamified contexts.

Beyond engagement, perceived joy from fitness apps impacts psychological well-being and social connectivity, with different effects depending on the user group. Sun et al. (2023) show that app use increases body satisfaction through social comparison, with results varying by gender and social network size. However, emphasis on comparison mechanisms obscures joy's direct emotional impact. Zhang and Mao (2022) identify satisfaction as a key driver of wearable fitness device use, influenced by ease of use and social factors. Falck et al. (2023) show that tailored motivational coaching increases exercise adherence, with self-motivation amplifying joy's effects; overall well-being is still unlinked. Li et al. (2022) observe that social influence improves app value and fun, but joy's direct impact on continued usage is limited, implying that indirect pathways warrant additional study. The research results suggest that joy has the potential to improve psychological and social outcomes, but they do not fully clarify the direct or indirect pathways to well-being.

Technological advancements such as artificial intelligence and gamification significantly improve perceived joy, making fitness apps more engaging and effective. Rahaman et al. (2023) identify price, performance, health awareness, and emotional motivation as key drivers of app adoption, explaining a significant variation in usage intent. Nigam and Chanda (2024) emphasize that AI-driven features and gamified elements improve engagement and retention, and its need to quantify joy's contribution compared to other factors. The literature connects technological innovations to joy, but it remains to examine how fitness apps promote joy-driven outcomes. This study contributes by assessing the effects of AI-driven features on perceived joy and their subsequent impacts on well-being. Synthesizing the literature's findings, technology and joy are seen as significant, but their role is underexplored in the fitness users:

H1: Perceived joy from fitness apps significantly influences individuals' overall well-being.

Perceived Usefulness

People who use fitness apps think they help them reach their health and fitness goals and make their efforts more effective and significant. According to Far et al. (2015), adding social and motivational features to a virtual gym app made older people more interested in and committed to a home-based fitness program. This was done by making virtual social presence and co-participation in training classes more common. Lucas et al. (2018) noticed that people felt more connected and worked harder when virtual personal trainers used positive tones for their messages. On the other hand, negative tones made people work harder physically. Real human trainers built more trust than virtual agents or images. According to McKay et al. (2019), many health and wellness apps have tools for encouraging behavior change, but most don't have complete behavior change methods. This shows that app designers must improve at making apps that help people change their lifestyles and overall health. Zhou (2020) found that using a VR-based virtual fitness center where people controlled characters that looked like themselves increased their desire to exercise and actions. However, changing the character's appearance was linked to a lower reported sense of presence in the virtual world. Liu et al. (2022) discovered that during COVID-19 lockdowns, fitness apps and virtual workout platforms were essential for staying active. They helped people get used to working out at home and made people feel good about using digital fitness solutions. According to Garbett et al. (2021), people who used AI computer vision fitness instructor apps had problems with how accurate the AI was. Still, they liked getting personalized feedback and being motivated. This shows that AI needs to be better at adapting to user needs and interacting with humans to improve well-being.

Szinay et al. (2021) discovered that app literacy, self-monitoring features, personalization, positive feedback, and social networking features significantly affect how many people use and stick with health and well-being apps. This shows that app designers need to think about how to make these features better. As noted by Damberg (2022), users in the UK are more likely to use exercise apps in the future if they are health-conscious, if they find them fun, if they think they work well, and if they think the price is fair. In the opinion of Mokmin and Jamiat (2021), the virtual fitness trainer app TRAINIME effectively motivated and engaged students in fitness activities by adding motor learning methods that made the exercises fun and easy to do, which led to better fitness levels. In line with Parashar et al. (2023), AI-powered fitness monitoring greatly enhances data-driven fitness insights. On the other hand, AI-powered coaching and training programs help with fitness results but need more research to understand how they affect well-being as a whole. As per the previous research, the importance of users' belief in the effectiveness and utility of fitness apps in achieving their health and fitness goals enhances healthier lifestyles and contributes to improved psychological and physical outcomes; the following hypothesis is proposed:

H2: The perceived usefulness of fitness apps significantly influences individuals' overall well-being.

Social Connectivity

Social connectivity in fitness apps, which includes virtual communities and peer interactions, significantly boosts user motivation and engagement in meeting health and fitness goals. Far et al. (2015) showed that incorporating social features, such as virtual social presence and co-participation in training classes, increased older adults' commitment to home-based fitness programs. However, the study's narrow demographic focus limits its generalisability. Lucas et al. (2018) found that virtual trainers using positive tones fostered stronger user connection and effort. In contrast, negative tones increased physical exertion but decreased trust compared to human trainers, emphasizing the tone's nuanced role. Zhou (2020) demonstrated that VR-based fitness centers with self-resembling avatars increased exercise motivation, but changing the avatar's appearance reduced virtual presence, highlighting design

challenges. Reiner et al. (2023) linked social presence awareness and perceived autonomy on virtual platforms to increased motivation and exercise adherence, but the long-term effects remain unknown. These studies suggest that social connectivity has motivational potential, but the mechanisms by which it works vary across populations.

Technological advancements, such as artificial intelligence and social networking, have increased social connectivity in fitness apps, but challenges remain in optimizing their effectiveness. Garbett et al. (2021) found that AI computer vision fitness instructor apps provided valuable personalized feedback and motivation, but had accuracy issues that required improved human-AI interaction. Szinay et al. (2021) identified app literacy, self-monitoring, personalization, and social networking as key drivers of adherence. However, their study does not provide guidance on how to optimize these for different users. Mokmin and Jamiat (2021) discovered that the virtual trainer app, which uses motor learning methods, engaged students by making exercises enjoyable, but its applicability outside of academic settings has yet to be tested. According to Parashar et al. (2023), AI-powered fitness monitoring provides data-driven insights, but its impact on well-being needs additional research. Damberg (2022) observed that health consciousness, enjoyment, effectiveness, and pricing influence UK users' intent to use apps, stressing the importance of aligned social features. Liu et al. (2020, 2022) discovered that fitness apps were essential for maintaining activity and fostering positive attitudes during COVID-19 lockdowns, but the issue of digital fatigue was not addressed. While technological innovations improve social connectivity, AI accuracy and generalizability limit their impact.

Social connectivity in fitness apps promotes social bonds and psychological well-being, but its efficacy varies according to platform and context. Gui et al. (2017) demonstrated that incorporating fitness tracking into social networks such as WeRun on WeChat encouraged long-term use and strengthened ties, but privacy and image management posed challenges. Vermeulen and Grobbelaar (2022) observed that fitness app networks facilitate rapid information sharing via high-degree nodes, but their emphasis on structure ignores user experience. Rai and Dahal (2024) and Seo et al. (2020) showed that social connectivity in wearable trackers increased activity and friendships, but mental health outcomes remained unexplored. Hollander et al. (2021) found that while the Runkeeper app promoted virtual connections through data sharing, it did not significantly improve walking behaviour or social bonds. Sato-Klemm et al. (2021) revealed that live virtual fitness classes fostered stronger connections among college students than pre-recorded sessions and recommended interactive challenges. According to McKay et al. (2019), many health apps lack comprehensive behaviour change strategies, limiting their overall impact on well-being. Brown and Kuss (2020) and Karki et al. (2023) with Nguyen (2021) suggested that managing digital exposure, whether through disconnection or nuanced connectivity, improves well-being, that emphasizes the importance of balanced connectivity in fitness applications. The empirical studies show that social connectivity improves social and psychological outcomes, but further research is needed into fitness app users. The present study proposes:

H3: Social connectivity in fitness apps significantly influences individuals' overall well-being.

This framework highlights the interconnected relationships studied by showing how different factors work together to improve people's general health through exercise apps.

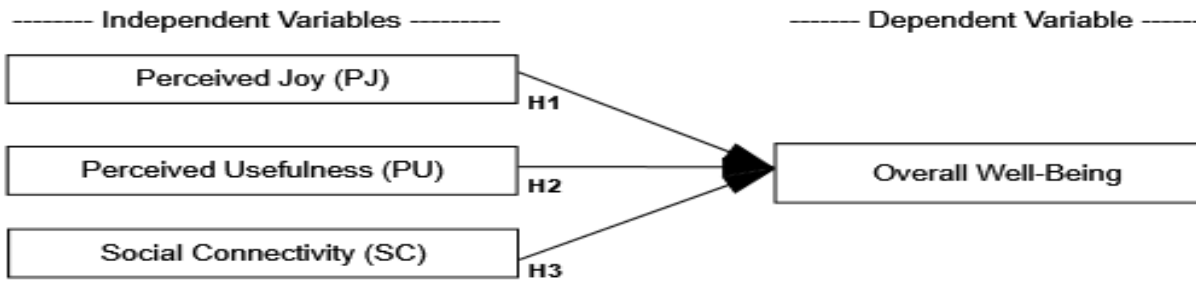

Fig. 1: Research Framework

3. Materials and Methods

This study used a positivist research paradigm with descriptive and causal research design, showing how joy, perceived usefulness, and social connectivity influence the well-being of fitness app users. Descriptive analysis summarizes and characterizes the data's properties, offering an overview of users' perspectives and experiences. Causal analysis determines how each independent variable affects the participants' total well-being. This technique supports a comprehensive analysis of the elements influencing the well-being of people who use fitness apps.

The target group for this study is young people who are members of fitness facilities and actively use fitness apps to improve their health and fitness routines. The study uses a non-probability, convenience sampling approach to collect data efficiently. This method ensures the feasibility of reaching participants, particularly those from fitness centers and internet platforms. To determine the sample of this study used Cochran's formula was commonly applied in non-probability sampling for large populations. The formula is:

$$n_0 = \frac{z^2.p.(1-p)}{e^2}$$

Where:

n_0 = required sample size

Z = Z-score (which corresponds to the desired confidence level)

p = estimated proportion of the population (unknown, p=0.5)

e = margin of error

In this study

A 95% confidence level (Z=1.96)

A margin of error of 5% (e=0.05)

A proportion estimate of p=0.5 (for maximum variability)

$$n_0 = \frac{1.96^2.0.5.(1-0.5)}{0.05^2}$$

$$n_0 = \frac{0.9604)}{0.0025} = 384.16$$

To ensure the reliability and validity of the results, a sample size of 385 respondents was chosen. Primary data for this study was gathered using a standardized questionnaire divided into two parts. The first portion collected demographic information from participants, including age, gender, educational background, exercise regimens, and the fitness applications they utilized. This information helps us

contextualize the responses and detect probable demographic trends. The questionnaire's second section included statements to assess participants' impressions of numerous elements and their overall well-being. A 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), was used to determine the level of agreement with each statement. The data was gathered through surveys administered in fitness facilities or through internet platforms for the same demographic. This strategy ensured broad accessibility and relevance, giving a complete picture of fitness app users' experiences.

The data was analyzed using both descriptive and inferential statistical approaches. Descriptive analysis summarized the respondents' demographic characteristics and distributed questionnaire replies. Key statistical metrics such as frequency, percentage, mean, and standard deviation were used to describe fitness app users' opinions of their well-being and the factors influencing them. Regression analysis was used to determine the causal links between the various components and overall well-being. This analysis evaluated the individual and combined effects of the parameters on users' overall well-being, allowing for a more in-depth knowledge of how these elements influenced their fitness app experiences and health.

This study used statistical approaches to analyze the data. A descriptive analysis was performed to summarize the participants' demographic features, providing information about their background and usage patterns. Correlation analysis was used to investigate the associations between key parameters and overall well-being, allowing the study to look into the strength and direction of these links. Regression analysis was utilized to assess the causal impact of numerous parameters on overall well-being, hence identifying major predictors of well-being among fitness app users. The acquired data was analyzed using IBM SPSS V26 software, which allowed for in-depth statistical analysis for the study to draw valid conclusions about the correlations between the elements. To ensure the study's validity and reliability, it was tested. The data's dependability was tested using internal consistency tests, such as Cronbach's alpha, which measured how consistently the items within each construct were connected. This ensured that the metrics employed to assess the various aspects and overall well-being were valid and could deliver consistent results. The study maintained participants' rights and privacy using ethical requirements. All participants gave informed consent, confirming the study's goal and their voluntary participation.

This study examines the user experience in fitness mobile applications by assessing perceived joy, usefulness, social connectivity, and overall well-being. Joy is measured using pleasure and engagement metrics derived from fitness app interactions. Usefulness is assessed based on the apps' contributions to well-being, unique features, and support for daily routines and health needs. Social connectivity analyses the sense of engagement and human-like interaction generated by AI virtual assistants within apps. Overall well-being refers to the apps' impact on users' health, motivation, and social connections (Hsiao et al., 2023; Fan, 2024, cited in Tseng et al., 2023; Lidynia et al., 2018; Zhang et al., 2021; Linton et al., 2016).

Table 1. Details of Statements

Variables	Statements	Mean	SD.	Source
Perceived Joy	Using fitness mobile apps is pleasurable.	4.36	.715	(Hsiao et al., 2023; modified from Fan, 2024, as cited in Tseng et al., 2023)
	I have fun using fitness mobile apps.	4.33	.636	
	I find using fitness mobile apps to be interesting.	4.34	.680	
	I thoroughly enjoy the process of instruction by a fitness app.	4.35	.652	
	Using fitness app tools makes my workout easier and	4.38	.667	

	pleasure.			
Perceived Usefulness	Using fitness mobile apps improves or maintains my well-being/fitness.	4.25	.798	(Lidynia et al., 2018)
	Fitness apps offer advantages that other alternatives do not have.	4.28	.706	
	Fitness apps make my daily routines or hobbies more enjoyable.	4.30	.723	
	Fitness apps are helpful for my needs.	4.32	.725	
	Fitness apps help prevent or treat illnesses.	4.36	.656	
Social Connectivity	A fitness app helps find new connections with friends.	4.25	.713	(Zhang et al., 2021)
	I think the app assistant can understand me.	4.29	.652	
	When interacting with a fitness app's assistant, there is a sense of interacting with a human being.	4.34	.618	
	There is a sense of social interaction with the fitness app.	4.36	.658	
	There is a sense of humanity in interacting with the fitness app.	4.28	.773	
Overall Well-being	My fitness app keeps me healthy and stimulated.	4.33	.659	(Linton et al., 2016; Tinker, 2015).
	I feel better and more positive after using my workout app.	4.37	.661	
	The exercises in my app are entertaining and motivate me.	4.36	.671	
	My fitness app helps me deal with everyday problems.	4.38	.656	
	Using chatbots has helped both my emotional and spiritual well-being.	4.31	.736	
	My fitness app keeps me connected and social with others.	4.33	.652	

Table 1 shows perceived joy connected with fitness applications is assessed using statements emphasizing pleasure, enjoyment, and interest in using the apps, with high mean scores indicating favorable user experiences. The perceived usefulness is measured by comments on how fitness apps improve daily routines, contribute to well-being, and provide health advantages, all of which indicate highly favorable perceptions. Social connections are addressed through virtual assistants, emphasizing their function in supporting social contact and fostering a sense of community. Overall well-being is assessed using statements on the impact of fitness apps on problem-solving, sociability, and physical and mental health, with participants reporting favorable outcomes. Table 2 presents the study's demographics information.

Table 2. Respondents' Profile

Groups	Nos	%	Groups	Nos	%
Gender			*Age group*		
Male	230	59.7	18 - 25 Years	171	44.4
Female	137	35.6	26 to 39 years	214	55.6
Others	18	4.7			
Education Status			*Types of Fitness Apps Used*		
SLC/+2	55	14.3	Running/Walking Apps	149	38.7
Bachelor's level	136	35.3	Workout Apps	101	26.2
Master's and above	194	50.4	Diet/Nutrition Apps	86	22.3
			Yoga/Meditation Apps	49	12.7
Total of each section	385	100.0	Total of each section	385	100.0

As shown in Table 2 people aged 18-39 who are members of fitness facilities and actively use fitness apps. Males are the majority of the gender distribution, followed by females and a small proportion who identify as others, with males being the most common. The age group is divided into 18-25 years and 26-39 years participants, with the older group being more prevalent and the average age falling in the late twenties. Education levels range from secondary school to bachelor's and master's degrees or higher, with the majority holding advanced degrees, indicating a well-educated sample, with master's degrees being the most common. Running/walking, workout, diet/nutrition, and yoga/meditation apps are among the most commonly used fitness apps. Table 3 presents the assessment of reliability of the variables to ensure the study's findings' accuracy and consistency.

Table 3. Reliability Results

Variables	No. of Statements	Cronbach Alpha
Perceived Joy (PJ)	5	0.922
Perceived Usefulness (PU)	5	0.931
Social Connectivity (SC)	5	0.923
Overall Well-being	6	0.945
Total	21	0.971

Table 3 displays the reliability results for the variables tested in the study, as determined by Cronbach's Alpha. All variables are highly reliable, demonstrating strong internal consistency. Perceived joy, perceived usefulness, and social connectivity all have high dependability, but Overall Well-being is the most reliable of the factors. The overall reliability of all claims confirms the robustness and consistency of the study's measurement tools.

4. Presentation and Analysis

This section includes a study's findings, which include descriptive results, correlation, regression analysis, and an explanation of the outcomes related to the research objectives.

Descriptive Results

Table 4. Descriptive Results

Variables	N	Minimum (Min.)	Maximum (Max.)	Mean	SD
PJ	385	1.40	5.00	4.3491	.58551
PU	385	1.60	5.00	4.3029	.64016
SC	385	1.40	5.00	4.3039	.59897
OWB	385	1.50	5.00	4.3476	.59628

Table 4 displays the descriptive results for the variables. Each variable was scored on a scale ranging from a minimum to a maximum value, with the mean scores indicating that respondents agreed on most issues. Perceived joy and well-being have the highest average scores, followed by social connectivity and perceived usefulness. The standard deviations indicate low variability, implying consistency in responses across the sample. These results reflect respondents' positive impressions of the measured factors.

Correlation Results

A correlation study is performed in this part to examine the connections between variables, including the strength and direction of those connections, to uncover essential linkages that may contribute to the

well-being of users.

Table 5. Relationship Among Dependent and Independent Variables

	Variables	PJ	PU	SC	OWB	VIF
	PJ	1				2.584
Pearson	PU	.740**	1			2.841
Correlation	SC	.727**	.756**	1		2.725
	OWB	.736**	.734**	.815**	1	

***. Correlation is significant at the 0.01 level (2-tailed).*

Table 5 depicts the relationship between the dependent variable as assessed by Pearson correlation analysis. The findings show a significant positive relationship between experienced joy and overall well-being. This indicates that the more people enjoy using fitness applications, the more likely they will see an improvement in their general well-being. This can be explained by the impact of good emotions in promoting mental health, motivation, and adherence to healthy behaviors, which fitness applications assist. Perceived usefulness is also closely linked to total well-being. This suggests that users who see fitness applications as useful tools for maintaining or improving Fitness, managing routines, or reaching health-related goals are more likely to report feeling good. The argument here is based on the practicality of these apps, which provide users with a sense of control and accomplishment, both essential for physical and mental health. Social connectedness has the strongest positive link with the overall well-being of the independent factors. This emphasizes the value of fitness apps' social elements, such as virtual communities, AI-powered interactions, and opportunities to engage with others. These qualities give consumers a sense of belonging and support, which is critical for their emotional and psychological well-being. The social contact enabled by these apps can alleviate loneliness, especially in fitness journeys that benefit from shared experiences and reciprocal support. To assess multicollinearity, variance inflation factors (VIFs) were calculated; VIFs are well below the threshold of 5, indicating that multicollinearity is not a concern in this model.

The significant intercorrelations between reported joy, perceived usefulness, and social connectivity demonstrate the interdependence of these variables. For example, the pleasure gained from fitness applications can increase their perceived usefulness, whereas social interactions can compound the enjoyment and practical benefits of using these apps. This interplay shows that a comprehensive approach incorporating all three aspects is required to maximize the positive impact of fitness apps on users' well-being. The correlations are statistically significant at the 1% level, indicating the strength of these interactions and giving a solid platform for future research. These findings show how fitness applications, through their design and features, target several dimensions of well-being, emphasizing the importance of combining enjoyment, practicality, and social involvement to have a meaningful and long-term influence on user lives.

Regression Analysis

In this section, the study looked at how each independent variable affected the participants' overall well-being by applying a regression model.

Table 6. Model Summary

		R	Adjusted R	Std. Error of	Change Statistics				
Model	R	Square	Square	the Estimate	R Square Change	F Change	df1	df2	Sig.
1	.848	.718	.716	.31771	.718	323.865	3	381	.000

Predictors: (Constant), PJ, PU, SC

b. Dependent Variable: OWB

Table 6 displays the model summary from the regression analysis, showing a strong association between the independent and dependent variables, as evidenced by the R-value of 0.848. This indicates that the combination of felt joy, perceived usefulness, and social connectivity accounts for a significant percentage of the variance in overall well-being. With an R-Square value of 0.718, the three predictors account for about 71.8% of the variability in Overall Well-being. This high proportion demonstrates the model's substantial explanatory ability. The Adjusted R-Square score of 0.716, which is slightly lower than the R-Square, adjusts for the number of predictors in the model and ensures that the model's predictive performance is not exaggerated. The standard error of the estimate, 0.31771, represents the average departure of the observed values from the projected values, implying that the model predictions are pretty correct. The R-square change value of 0.718 and an F-change of 323.865 with 3 degrees of freedom for the predictors and 381 degrees for the residual support the model's statistical significance. The p-value (Sig.) of 0.000 suggests that the predictors (perceived joy, perceived usefulness, and social connectivity) have a significant relationship with overall well-being.

Table 7. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	98.072	3	32.691	323.865	.000[b]
	Residual	38.458	381	.101		
	Total	136.530	384			

a. Dependent Variable: OWB

b. Predictors: (Constant) PJ, PU, SC

Table 7 shows that the independent factors in total explain the variance in the dependent variable. The regression sum of squares is 98.072, indicating how much of the total variance in overall well-being can be explained by the predictors. The residual sum of squares is 38.458, indicating that the model cannot explain the. The sum of squares, including explained and unexplained variance, is 136.530.

The mean square for the regression is calculated by dividing the regression sum of squares by the degrees of freedom, yielding a value of 32.691. Similarly, the mean square for the residual is calculated by dividing the residual sum of squares by the degrees of freedom, providing a value of 0.101. The F-statistic, or the ratio of mean square regression to mean square residual, is calculated to be 323.865. This high F-value implies that the model's explained variation is much more than the unexplained variance, indicating that the predictors have a strong and meaningful impact. The p-value (Sig.) for the F-statistic is 0.000, less than the widely recognized threshold of 0.05. This verifies the model's statistical significance, indicating that the combined effect of independents on overall well-being is not attributable to chance. ANOVA findings show that the regression model is highly significant. This shows the relevance of factors on OWB.

Table 8. Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	.414	.129		3.205	.001	.160	.668		
PJ	.241	.045	.236	5.409	.000	.153	.328	.387	2.584
PU	.159	.043	.170	3.713	.000	.075	.242	.352	2.841

SC	.512	.045	.515	11.463	.000	.424	.600	.367	2.725

a. Dependent Variable: *OWB*

Table 8 displays the regression coefficients, represented by the constant value of 0.414. Perceived joy has an unstandardized coefficient of 0.241, which means that for every one unit increase in perceived joy, overall well-being is expected to increase by 0.241 units. This association is statistically significant, as evidenced by a t-value and p-value of 0.000. From a theoretical standpoint, this finding is consistent with SDT, which holds that intrinsic motivation and enjoyment are important drivers of psychological well-being. Fitness apps that include enjoyable features, such as gamified challenges or interactive interfaces, can help users meet their need for autonomy and competence, improving their emotional and mental health.

Similarly, perceived usefulness has an unstandardized coefficient of 0.159, implying that every one-unit increase in perceived usefulness results in a 0.159-unit increase in overall well-being. The t-value and p-value of 0.000 indicate that this predictor is statistically significant, which lends support to the TAM. According to TAM, users are more likely to adopt and engage with technologies that they believe will help them achieve their goals. In the context of fitness apps, features that provide actionable insights, track progress, or make personalized recommendations can boost users' sense of competence and accomplishment, contributing to their overall well-being.

The highest unstandardized coefficient is 0.512, which means that a one-unit increase in social connectedness leads to a 0.512-unit increase in overall well-being. The t-value and p-value of 0.000 demonstrate that this effect is substantial and statistically significant. The prominence of social connectedness is consistent with SDT's emphasis on relatedness as a basic psychological need. Fitness apps that encourage social interaction, such as virtual communities, shared challenges, or peer support, can help people feel less isolated and more connected. These social elements not only encourage users to stick to their fitness routines, but they also significantly improve their emotional and social well-being.

The standardized coefficients (Beta) indicate the relative importance of each predictor in the regression model. Social connectedness (beta = 0.515) has the greatest impact on overall well-being, followed by perceived joy (beta = 0.236) and perceived usefulness (beta = 0.170). These findings highlight the critical role of social connectivity in improving overall well-being among fitness app users, showing the importance of designing apps with meaningful social interactions. The statistical significance of all predictors, as indicated by t-values greater than two and p-values less than 0.05, supports the robustness of these findings. Furthermore, the 95% confidence intervals for the unstandardized coefficients show where the true population parameters are most likely to fall. Collinearity statistics, with tolerance values for all predictors less than ten, indicate that multicollinearity is not an issue in this model. The absence of multicollinearity improves the regression model's reliability. The relationships between perceived joy, perceived usefulness, social connectedness, and overall well-being are distinct and theoretically significant.

5. Discussions

The study discovered that reported joy, perceived usefulness, and social connectivity substantially impact the overall well-being of fitness app users. Users who were happier when using fitness applications reported better levels of well-being, emphasizing the necessity of making the app engaging and pleasurable. Furthermore, the perceived utility of fitness apps—how well they assist users in maintaining or improving their fitness and health—was positively connected with overall well-being,

implying that users who find the app useful are more likely to have better physical and mental health. Social connectivity was also important, with users who used the app's community features or interacted with virtual assistants reporting improved emotional and social well-being. The study also found that the combined benefits of these three aspects result in a holistic approach to well-being, implying that fitness applications with features that balance enjoyment, usefulness, and social connection have the best potential to improve users' health outcomes. The current study's findings are consistent with prior research, yet they also show substantial differences. For example, Yan et al. (2021) emphasized the importance of perceived value, simplicity of use, flow experience, and behavioral change tactics in health applications, with pleasure as a mediator. Similarly, the current study discovered that the perceived joy and usefulness of fitness apps have a strong correlation with overall well-being, echoing Zhang and Mao (2022) and Falck et al. (2023), who identified satisfaction as a critical factor influencing the continued use of wearable fitness gadgets and motivational tools. While Zhang and Mao (2022) primarily focus on perceived ease of use and health motivation, this study broadens the scope by examining social influence and its impact on well-being.

Esmaeilzadeh (2021) stated that gamification strategies improve users' identity and engagement with health apps, which is partially supported by the current study, which found that gamified features linked to personal health goals promote long-term use. Social features such as peer comparisons and network integration significantly improved users' feelings of social connectivity and overall well-being, in line with Gui et al. (2022), who discussed the potential and challenges of embedding social functions within fitness apps. While Gui et al. (2022) reported difficulties in forming meaningful social bonds online, this study discovered that strong, personalized social networks within apps can significantly increase user engagement and satisfaction. Zhou (2020) reported a decrease in user presence with character customization in virtual fitness environments; however, the current findings indicate that personalization; particularly when linked to goal achievement remains a powerful motivator for continued app use, supporting the arguments made by Szinay et al. (2021). Similarly, Reiner et al. (2023) emphasized the importance of social presence in promoting physical activity, a finding that was replicated in this study, in which social connectivity emerged as the strongest predictor of well-being. Importantly, the findings are consistent with Self-Determination Theory (Ryan, 2009; Deci & Ryan, 2012), which holds that meeting autonomy, competence, and relatedness needs promotes psychological well-being. Fitness apps provide users with autonomy, competence, and relatedness by allowing them to set personal goals, track progress, and interact with others (Villalobos-Zúñiga & Cherubini, 2020; Peters et al., 2018). The particularly strong link between social connectivity and well-being emphasizes the importance of relatedness satisfaction in digital health settings, where users frequently seek community support to stay motivated.

However, limitations must be acknowledged, as the study's methodology is not generalizable. Future research should use longitudinal methods and objective usage metrics to strengthen findings. In practical terms, app developers should create features that increase social connectedness, personalize experiences, and support users' intrinsic motivations. Users are encouraged to choose fitness apps featuring goal-specific customization and active peer support communities. Healthcare providers should recommend apps that address patients' psychological needs, resulting in sustained engagement and long-term health benefits.

6. Conclusion

This study aimed to examine the influence of perceived joy, usefulness, and social connectivity on users' overall well-being. It's concluded that users who experience greater joy when using fitness apps, who see fitness apps as beneficial to their fitness or health, and apps' social interaction features like virtual

assistants and community connections have an important role in enhancing users' well-being. Fitness applications can be a comprehensive tool for improving users' health outcomes. The findings illustrate the importance of these app features in improving users' overall well-being and provide valuable insights for developers looking to enhance fitness app functionality. These apps' built-in features help to bridge the gap to total wellness. Joy, usefulness, and social connectivity help users achieve their physical and mental health goals, such as having access to personal health assistance at all times. Perceived joy generates experiences that are both entertaining and sustainable. Perceived usefulness aids in developing structure and provides advice to keep people on track. Building clubs and chat rooms increases social connectivity, which boosts motivation and emotional well-being. These features are personal aids in living a healthier, happier life.

7. Limitations and Future Scope

This study suggests future research to study the long-term influence of fitness app use on users. In the future, demographic parameters like age, gender, and exercise experience will impact the relationship between these app features and overall well-being. Future research might look into the function of AI and machine learning in personalizing fitness app experiences and improving social networking aspects of platforms.

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