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Exploring the Impact of Digital Wellness Platforms on Post-Pandemic Health Habits: A Focus on Physical and Mental Wellbeing

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Abstract
The COVID-19 pandemic and associated lockdowns significantly disrupted daily routines, leading to reduced physical activity, increased sedentary behavior, and unhealthy lifestyle habits, which elevated the risk of physical and psychological health issues. Digital wellness platforms, particularly fitness applications, emerged as accessible alternatives for maintaining physical activity and supporting mental well-being during this period. This study aimed to examine the impact of fitness applications on post-pandemic health habits among 683 female participants aged 20–30 years. Data were collected through an online self-administered questionnaire and analyzed using descriptive statistics and percentage analysis. Findings revealed that although a majority of participants (72.46%) were aware of fitness applications, only a small fraction (7.03%) used them daily, indicating limited sustained engagement. Participants who used fitness apps reported benefits such as structured workouts, progress tracking, calorie monitoring, and educational guidance, highlighting the potential of these platforms to promote consistent exercise habits and improve physical and mental health. The study underscores the importance of strategies to enhance regular usage of digital wellness tools, suggesting that fitness applications can play a pivotal role in fostering healthy lifestyles in the post-pandemic era.

Keywords: Fitness Applications, COVID-19 Pandemic, Physical Activity, Mental Well-being, Digital Wellness Platforms

INTRODUCTION

During the lockdown period, individuals were confined to their homes and forced to remain indoors, resulting in considerable stress and disruption to daily life. Restrictions on movement and social interaction negatively affected health behaviors, leading to reduced physical activity, irregular sleep patterns, and unhealthy eating habits. These changes contributed to an elevated risk of lifestyle-related diseases such as obesity, diabetes, and coronary heart disease, as well as increasing vulnerability to psychological distress and stress-related disorders (World Health Organization [WHO], 2020). Consequently, the overall quality of life declined during quarantine due to these adverse conditions.

One of the most notable consequences of the pandemic was the rise in psychological suffering. The global health crisis triggered an increase in mental health issues, including anxiety, depression, and emotional distress (Brooks et al., 2020). Factors such as fear of infection, job loss, financial instability, and prolonged social isolation further intensified stress levels. Research indicates that regular physical activity plays a crucial role in supporting mental well-being, helping individuals cope with chronic stress and reducing the risk of mental illness (American Psychological Association, 2020). Exercise is known to alleviate symptoms of anxiety and depression, making it an important strategy for managing psychological strain during crises.

As access to traditional fitness resources became limited during the COVID-19 pandemic, digital and smart fitness applications emerged as essential alternatives to gym-based physical activity. These applications provided convenient, accessible, and adaptable options for individuals seeking to maintain their fitness at home (Panza et al., 2021). In response to these conditions, global health agencies recommended regular physical activity to counter the negative health impacts of lockdowns and strengthen immunity (WHO, 2020). With public workout spaces closed, many individuals adopted home-based exercise routines supported by digital platforms. According to the Good Housekeeping Institute Wellness Lab (2021), fitness applications have significantly evolved, offering higher-quality instruction and diverse workout options. The growing demand for home-based fitness content underscores the increasing value of these applications for sustaining physical and mental health during challenging times. Building on these ideas, the present study attempts to evaluate the effectiveness of fitness applications as tools for physical training in the post-pandemic era.

MATERIALS AND METHODS

The present study adopted a descriptive research design to evaluate the effectiveness of fitness applications as a means of physical training in the post-pandemic era. A total of 683 female participants between the ages of 20 and 30 years were selected using a purposive sampling technique, as this age group was considered more familiar with smartphone usage and fitness-related digital platforms. Data were collected through a self-administered questionnaire distributed online, considering the pandemic-related restrictions and the geographical dispersion of the respondents. The questionnaire included items related to physical activity habits before, during, and after the lockdown, familiarity and usage of fitness applications, lifestyle changes, and perceived benefits of app-based exercise. Both closed-ended and short descriptive questions were included, and the instrument was validated by experts to ensure clarity and relevance. The data collection process involved sharing the survey link via digital platforms, and participants were informed about the purpose of the study and assured of confidentiality and voluntary participation. The collected data were analyzed using descriptive statistics and percentage analysis to identify patterns in exercise behavior and app usage. Ethical considerations such as informed consent, anonymity, and academic use of data were strictly maintained throughout the study.

ANALYSIS AND DISCUSSIONS

The study focused on female participants aged between 20 and 30 years, with a majority being undergraduate students. Researchers administered a self-designed questionnaire through online channels, comprising 15 questions that delved into the study's objectives, demographics, and physical activity levels.

Body Mass Index

A total of 683 individuals participated in the study. Among these, 506 respondents emphasized the significance of physical appearance in their lives and dedicated time to maintain an attractive appearance. Of these, 299 subjects practiced dietary control for achieving a lean body, with many relying on diet applications. When assessing their Body Mass Index (BMI), 276 subjects fell within the normal range, while 212 were underweight, 176 were overweight, and 19 were classified as obese.

Table 1 BMI Classification of Participants

BMI Category	Frequency (n)	Percentage (%)
Underweight	212	31.04%
Normal	276	40.41%
Overweight	176	25.77%
Obese	19	2.78%

Table 1 indicates that the majority of participants fall within the normal BMI category (40.41%), followed by a substantial proportion who are underweight (31.04%). Additionally, 25.77% of the respondents are overweight, while only a small percentage (2.78%) fall into the obese category, reflecting varied weight status among the sample.

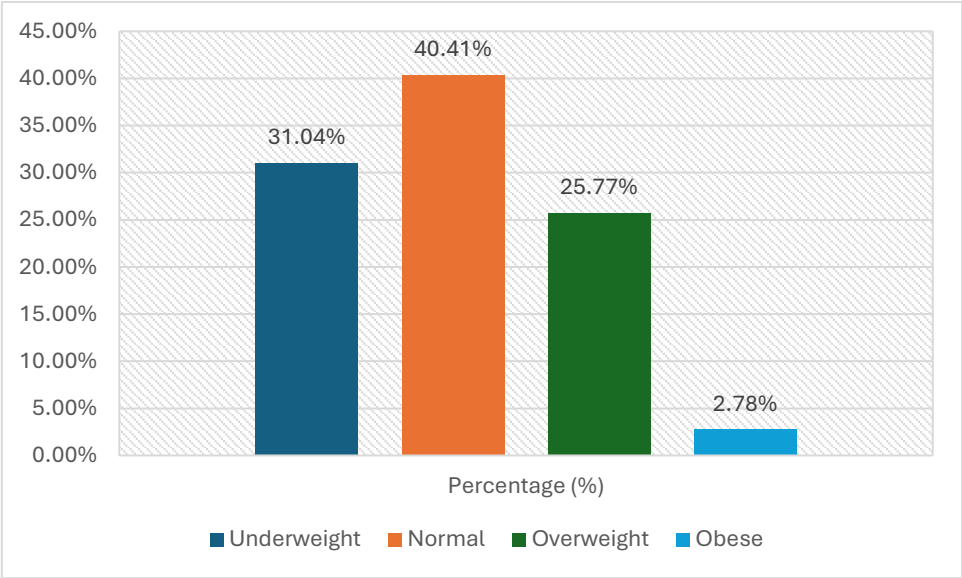

Figure 1 BMI Classification of Participants

Smartphone Usage

The data on smartphone usage shows a wide variation in daily screen time among the participants. Only a small portion of the group, 113 individuals, reported using their smartphones for less than 2 hours per day, suggesting limited dependency on mobile devices. A larger segment, consisting of 277 participants, used their smartphones for up to 3 hours daily, indicating moderate usage patterns. Notably, the highest number of respondents, 293 individuals-reported spending between 7 and 10 hours on their smartphones each day. This substantial screen time reflects a high level of digital engagement and possibly increased reliance on smartphones for communication, entertainment, education, and daily tasks. Overall, the pattern suggests that prolonged smartphone usage is common among the participants, with only a minority maintaining minimal screen time.

Table 2 Daily Smartphone Usage of Participants

Smartphone Usage Duration	Frequency (n)	Percentage (%)
Less than 2 hours/day	113	16.54%
Less than 3 hours/day	277	40.56%
7–10 hours/day	293	42.90%

Table 2 shows that daily smartphone usage among participants is noticeably high, with the largest group (42.90%) spending 7–10 hours per day on their devices. A moderate proportion (40.56%) used their smartphones for less than 3 hours daily, while only a small segment (16.54%) reported usage below 2 hours.

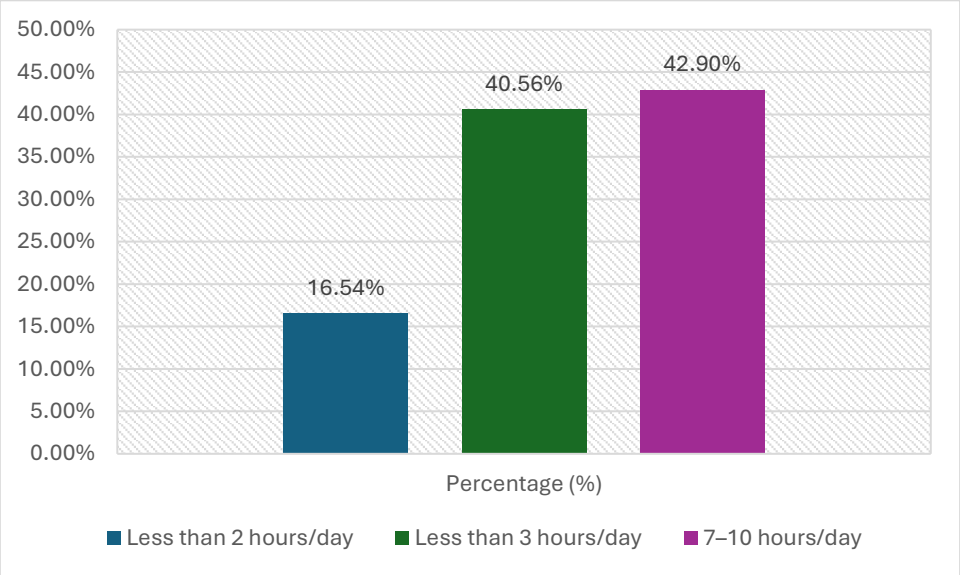

Table 2 Daily Smartphone Usage of Participants

Physical Fitness Habits

The findings related to physical fitness habits indicate that the quarantine period had a limited positive influence on participants' activity levels. Only 104 individuals reported that their physical fitness habits improved during lockdown, suggesting that the restrictions may have motivated a small portion of the group to focus more on their health. In contrast, a much larger number of 389 participants, felt they were more physically active before the pandemic, highlighting a significant decline in exercise engagement during quarantine. This reduction is further supported by the fact that only 87 participants reported engaging in any form of physical activity during the lockdown. Instead of exercising, many individuals diverted their time to sedentary or home-based activities such as extended sleeping hours, increased smartphone usage, trying new recipes, and gardening. These patterns reflect how the pandemic shifted daily routines, often pushing physical activity to the background while encouraging more passive and leisure-oriented behaviors.

Table 3 Physical Activity and Lifestyle Changes during Quarantine

Category	Frequency (n)	Percentage (%)
Positive Impact on Fitness	104	15.23%
More Active Before Pandemic	389	56.94%
Physical Activity During Lockdown	87	12.74%

Table 3 indicates that the majority of participants (56.94%) were more active before the pandemic, while only a small proportion (15.23%) experienced a positive impact on their fitness during quarantine. Additionally, just 12.74% engaged in physical activity during the lockdown, highlighting a substantial decline in exercise habits and a shift toward more sedentary lifestyles during this period.

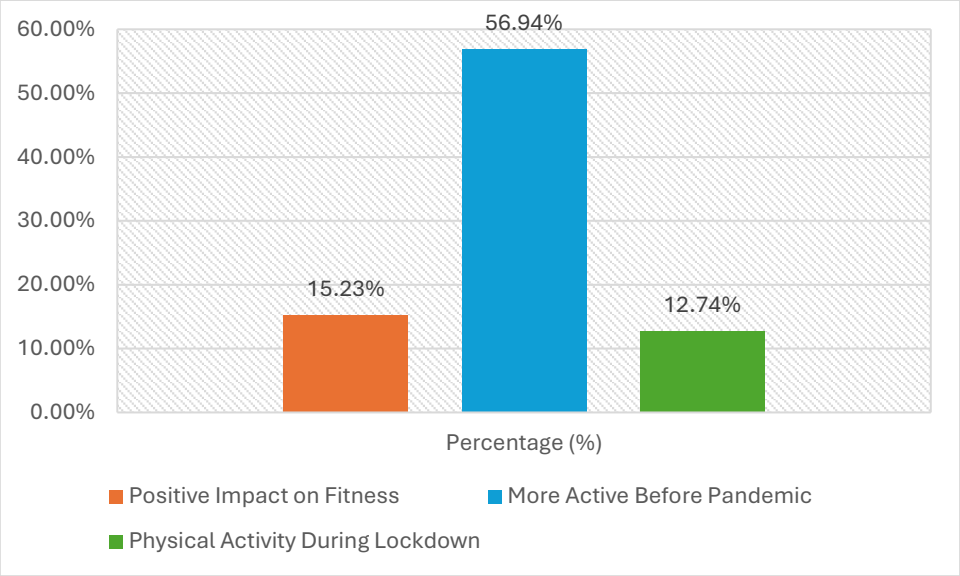

Figure 3 Physical Activity and Lifestyle Changes during Quarantine

Current fitness habits

Regarding current fitness habits, only 62 subjects engaged in regular physical activity. They preferred activities such as yoga, fitness apps, gym training, cycling, and badminton. In contrast, 109 subjects reported dedicating less than 1 hour per week to physical activity, while 135 subjects rarely engaged in any physical activity. A substantial group of 377 individuals expressed disinterest in physical training.

Table 4 Current Physical Activity Habits of Participants

Category	Frequency (n)	Percentage (%)
Regular Physical Activity	62	9.08%
< 1 Hour/Week	109	15.96%
Rarely Active	135	19.77%
Not Interested	377	55.18%

Table 4 shows that a majority of participants (55.18%) expressed no interest in engaging in physical activity, while only a small portion (9.08%) maintained regular exercise habits. Additionally, 15.96% reported exercising less than one hour per week, and 19.77% were rarely active, indicating generally low levels of physical activity among the participants.

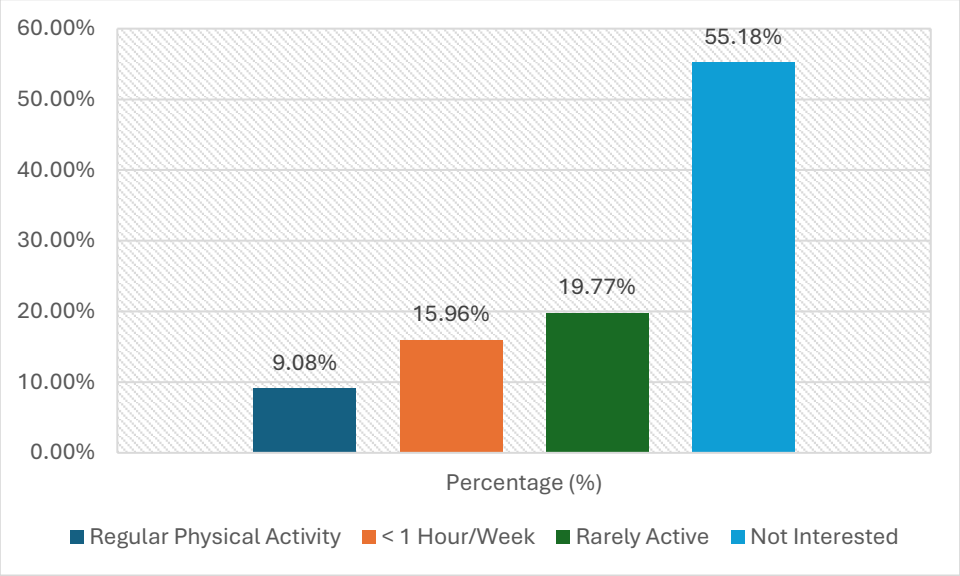

Figure 4 Current Physical Activity Habits of Participants

Fitness Application

The findings regarding fitness application usage indicate that most participants (495) were aware of the existence of such apps, reflecting a high level of familiarity with digital fitness tools. Out of these, 283 participants had actually used fitness applications to support their physical training, showing a willingness to adopt technology for exercise purposes. However, only 48 individuals reported using these apps on a daily basis, suggesting that regular and consistent engagement with fitness applications is relatively low. In summary, while awareness and occasional use of fitness apps are high, sustained daily usage remains limited among the participants.

Table 5 Usage of Fitness Applications

Category	Frequency (n)	Percentage (%)
Awareness of Fitness Apps	495	72.46%
Tried Fitness Apps	283	41.41%
Daily Users	48	7.03%

Table 5 shows that a majority of participants (72.46%) were aware of fitness applications, and a considerable proportion (41.41%) had tried using them for physical training. However, only a small fraction (7.03%) reported using fitness apps on a daily basis, indicating that while awareness and occasional use are high, regular engagement with these digital tools is relatively limited.

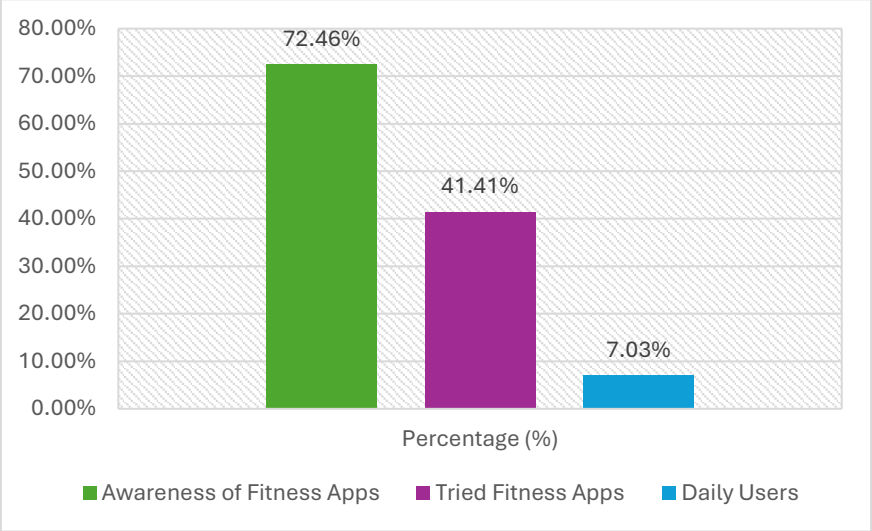

Figure 5 Usage of Fitness Applications

Table 6. Familiarity with Fitness Applications

Category	Frequency (n)
Familiar	495
Unfamiliar	188

Table 6 shows that most participants (495) are familiar with fitness apps, while 188 are not, indicating high overall awareness but some lack of exposure.

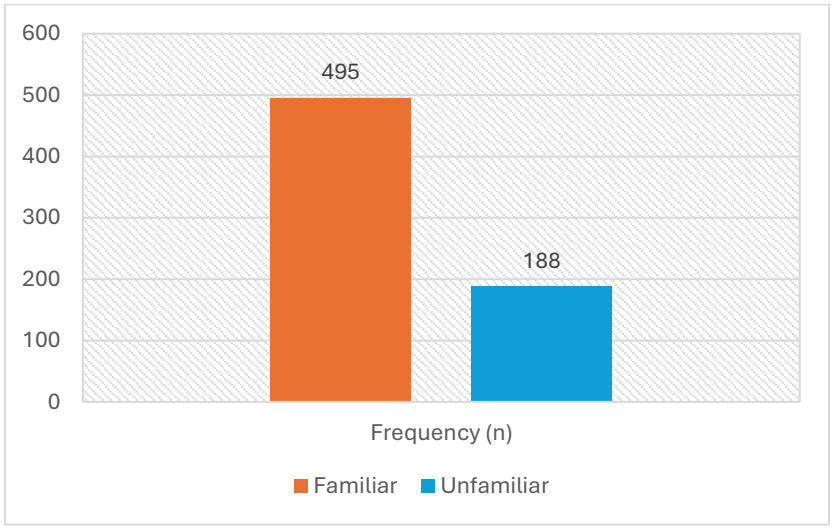

Figure 6 Knowledge about Fitness Applications

The participants who engaged in regular physical training preferred fitness applications both during and after the lockdown period. They found that these apps provided better tracking of health, calorie expenditure, workout plans, guidelines, progress monitoring, and educational information about exercises. They believed that fitness apps outperformed traditional physical training methods, which often required consultations with multiple professionals like physical trainers, dietitians, and gym instructors. According to their feedback, the younger generation showed a greater inclination towards using fitness apps to maintain their fitness levels.

Table 7 Participants' Experience with the application

Category	Number of Participants
Attempted	275
Never Tried	210

Table 7 shows the participants' experience with the application. Out of the total respondents, 275 participants have tried the application, indicating a majority familiarity, while 210 participants have never tried it, reflecting a substantial portion of users who are yet to engage with the application.

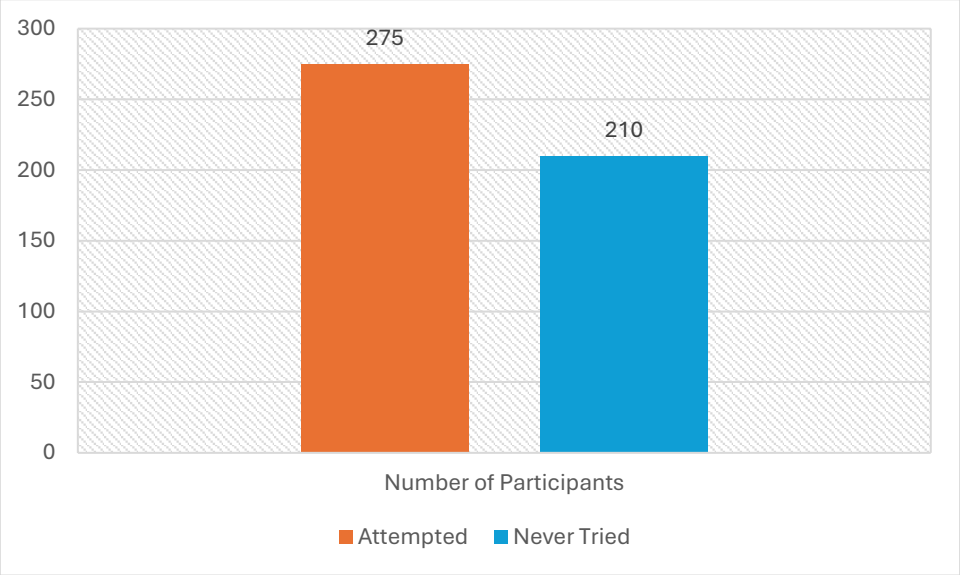

Figure 6 Attempt level of Fitness Applications

The closure of indoor recreational facilities such as gyms, swimming pools, and sports arenas due to safety concerns has disrupted the exercise routines of many college students who relied on these facilities. Remote learning and the shift to online classes meant that students spent more time sitting in front of screens. This sedentary lifestyle has negative implications for physical health and overall well-being. The social aspect of exercising with friends or participating in group fitness classes was limited due to social distancing guidelines. This loss of social interaction in the context of physical activity can lead to feelings of loneliness and decreased motivation.

In conclusion, the COVID-19 pandemic has brought about a mixed bag of changes in the exercise habits of college students. While some have adapted positively by exploring new fitness options and recognizing the importance of exercise for mental health, others have faced challenges related to gym closures, a sedentary lifestyle, and anxiety about indoor facilities. As the pandemic evolves and safety measures continue to change, it is essential for colleges and universities to provide support and resources to help students maintain a healthy and active lifestyle.

DISCUSSION ON FINDINGS

The study explored the impact of digital wellness platforms on post-pandemic health habits, emphasizing both physical and mental well-being among 683 female participants aged 20–30 years. The findings provide insightful perspectives on how the pandemic reshaped exercise behaviors and digital fitness adoption.

BMI and Physical Health

The BMI analysis indicated that 40.41% of participants were within the normal range, yet a significant proportion were underweight (31.04%) or overweight (25.77%). This distribution reflects diverse health statuses, suggesting that while many participants maintained a healthy body weight, a substantial number faced potential risks associated with improper diet and physical inactivity. These findings align with previous research highlighting pandemic-induced shifts in lifestyle behaviors and weight management challenges.

Smartphone Usage

The majority of participants (42.9%) reported spending 7–10 hours daily on smartphones, indicating high digital engagement. While this facilitates access to fitness apps and online health resources, excessive screen time may contribute to sedentary behavior and reduced physical activity, echoing global concerns about increased digital device dependency during lockdown periods.

Physical Activity During and After Lockdown

Data on physical activity habits during quarantine revealed a sharp decline in active behaviors. Only 12.74% of participants engaged in physical activity during lockdown, while 56.94% reported being more active before the pandemic. Post-lockdown habits were similarly concerning, with over half of the participants (55.18%) expressing no interest in physical activity. These results highlight the enduring impact of the pandemic on exercise motivation and routine maintenance. The findings underscore that home confinement, closure of fitness centers, and sedentary online lifestyles contributed to reduced engagement in physical fitness.

Fitness Application Usage

Despite high awareness (72.46%) of fitness applications, actual engagement was limited—only 41.41% had tried apps, and a mere 7.03% used them daily. This pattern indicates that while digital wellness platforms are widely recognized, consistent adoption remains a challenge. Notably, participants who used fitness apps appreciated their advantages in tracking workouts, monitoring calories, and providing structured exercise plans. This demonstrates the potential of digital platforms to support physical health, especially when traditional fitness resources are unavailable.

Participant Experience with Apps

Table 7 shows that 275 participants had attempted using fitness applications, whereas 210 had never tried them. This split highlights both the growing acceptance of technology-assisted fitness and the need for targeted strategies to encourage non-users to engage with these tools. The findings suggest that while fitness apps are beneficial, their influence depends on sustained motivation and user-friendly features.

CONCLUSION

Based on the data collected from the study participants, it is clear that fitness apps play a significant role in shaping people's fitness habits. Consequently, the findings of this present study align with the conclusions drawn in previous research studies (Liu R. et al.,2022, Menhas R. et al., 2023, and Peng X. et al., 2022). Fitness app's primary goal during and post-pandemic is to inspire and encourage users to maintain consistent home-based workout routines because regular exercise is a proven and effective means of mitigating the health risks associated with a sedentary lifestyle. By providing guidance, tracking progress, fostering social support, and offering educational resources, fitness apps can play a pivotal role in helping individuals lead healthier, more active lives.

1. The COVID-19 pandemic led to reduced physical activity and increased sedentary behavior among

young adult females.

2. Fitness applications emerged as accessible and convenient alternatives to maintain exercise at home during and after lockdowns.
3. High awareness of fitness apps (72.46%) contrasts with relatively low daily usage (7.03%), highlighting limited sustained engagement.
4. Participants who used fitness apps reported benefits such as structured workouts, progress tracking, calorie monitoring, and educational guidance.
5. Regular use of digital wellness platforms can positively influence both physical and mental well-being in the post-pandemic era.
6. Strategies are needed to promote consistent app engagement and overcome barriers to maintain long-term health habits.

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