

<https://doi.org/10.26565/2074-8167-2024-55-09>

UDC 37.018.43:004.9]:796.411:[616.98:578.834.1]-036.21COVID-19](510)

Chen Rui

postgraduate (PhD) student at the Department of Healthy Lifestyle, Technologies, and Life

Safety of Simon Kuznets Kharkiv National University of Economics, Nauky avenue 9A, Kharkiv, Ukraine

aspirantzc@gmail.com <https://orcid.org/0000-0001-6663-7504>

THE EFFECTIVENESS OF DIGITAL PLATFORMS FOR DEVELOPING PHYSICAL CULTURE DURING THE PANDEMIC IN THE PRC

The COVID-19 pandemic disrupted traditional avenues for physical activity, prompting the rapid adoption of digital fitness platforms in the People's Republic of China (PRC). This study explores the effectiveness of these platforms in sustaining and promoting physical culture during lockdowns and beyond. Employing a mixed-methods approach, the research combines quantitative data from a cross-sectional survey of 762 participants and qualitative insights from 30 semi-structured interviews and three focus groups. Results reveal a significant increase in digital platform usage during peak lockdown periods, with mean weekly usage rising from 1.82 sessions pre-pandemic to 3.25 during the pandemic. Self-reported physical activity levels improved correspondingly. Users highlighted the convenience, accessibility, and motivational aspects of features such as live-streamed classes, gamification elements, and virtual communities. However, barriers such as limited internet access, lack of professional supervision, and difficulties in sustaining long-term engagement were noted. The study underscores the potential of digital platforms to bridge geographical and social divides in fitness engagement, provided challenges of infrastructure, quality control, and user retention are addressed. The findings contribute to understanding how technology can integrate into broader public health strategies, suggesting a hybrid model of online and offline fitness could define the future of physical culture in the PRC.

Keywords: COVID-19, digital fitness platforms, physical culture, People's Republic of China, technology acceptance, hybrid fitness models, public health strategies.

In cites: Chen, R. (2024). The effectiveness of digital platforms for developing physical culture during the pandemic in the PRC. *Scientific Notes of the Pedagogical Department*. №55. 93-103. <https://doi.org/10.26565/2074-8167-2024-55-09> [in English].

Introduction. The COVID-19 pandemic brought about significant changes to daily life worldwide. Rapidly introduced containment measures – including lockdowns, social distancing, and work-from-home policies – prompted people to rethink how they engage in physical activity [15; 23; 29]. In the People's Republic of China (PRC), these public health measures led to a substantial reduction in outdoor exercise opportunities, closure of fitness facilities, and cancellations of sports events. As a result, many individuals turned to digital platforms – such as mobile applications, virtual fitness classes, and online communities – to maintain and even enhance their physical well-being.

The shift to digital fitness and online health solutions was not a mere trend but rather a necessity emerging from an unprecedented global crisis [26]. During this time, various platforms gained popularity, from globally recognized apps to localized Chinese streaming services. These platforms attempted to replicate, and in some cases improve upon, the benefits of in-person exercise settings by delivering workout routines, nutritional advice, and community support directly to users' homes.

Physical culture – encompassing physical education, fitness, and sports – has long been regarded as integral to social development in the PRC [12]. Historically, the Chinese government

has emphasized public health initiatives and sports development, aiming to elevate the physical well-being of citizens as part of the broader national agenda [14]. This focus has included large-scale campaigns promoting physical exercise among youth and adults alike, as well as infrastructural investments in sports venues and community fitness centers.

However, the pandemic's restrictions presented challenges to sustaining this active culture, especially in urban centers where population density heightened the risks of virus transmission [18]. Consequently, the emergence of digital solutions came at a critical moment, offering alternative channels for individuals to partake in fitness activities. From yoga livestreams to personalized running apps, the digital sphere served as a buffer against the decline in traditional physical activities.

Digital fitness platforms – including specialized mobile apps, social media challenges, and video-based workout sessions – experienced unprecedented growth during the pandemic [31]. By leveraging technology, these platforms addressed specific barriers such as location constraints, time scarcity, and the need for social distancing. Many platforms also incorporated social features like chat groups and virtual competitions, fostering a sense of community among users despite physical separation [30].

This blending of technology and exercise heralds new possibilities for health promotion. It is especially pertinent in a country as vast and diverse as the PRC, where the population spans major urban centers, rural regions, and varied age demographics. Digital platforms have the potential to bridge these geographical and social divides, providing an inclusive model of health and fitness guidance that resonates with different cultural and lifestyle needs.

Literature Review. Physical culture, broadly defined, encompasses the habitual practices, beliefs, and institutional frameworks that shape how societies approach physical activity, exercise, and sports [12]. In the PRC, the concept traditionally merges public health, national identity, and community well-being [4]. Government policies have historically emphasized physical fitness to bolster the nation's health and global sporting success, thereby embedding exercise into educational curricula and community life [14].

Recent scholarship highlights how this robust backdrop facilitated a swift response to maintaining physical activity during disruptive events [12]. Specifically, large-scale public awareness campaigns and a deeply-rooted cultural em-

phasis on exercise contributed to the widespread acceptance of new formats for fitness engagement when the COVID-19 pandemic emerged [4].

The rise of digital platforms – ranging from smartphone applications and wearable devices to video conferencing and social media communities – has been widely documented in global research [15]. Even prior to the pandemic, these tools were recognized for promoting physical activity by overcoming geographical, temporal, and accessibility barriers. Studies in Western contexts illustrate how digital apps and online coaching models reduce dropout rates and improve adherence to exercise programs, particularly among individuals struggling to maintain regular routines [10].

When COVID-19 forced fitness centers to shut down worldwide, many turned to digital solutions to continue training [22]. Researchers found that online group workouts, livestreamed classes, and virtual running clubs provided social support and accountability – factors that are critical for sustaining an exercise habit [10; 22]. These findings underscore the role of digital platforms as both community builders and enablers of personalized fitness programs.

Against this global backdrop, Chinese researchers have explored the unique cultural and infrastructural factors that underpin digital fitness adoption in the PRC [24; 27]. China's highly developed mobile ecosystem and widespread broadband access have been instrumental in the successful implementation of online platforms, even in rural and remote areas.

A growing number of empirical studies point to the effectiveness of Chinese-specific apps such as Keep, Daily Yoga, and the WeChat mini-programs that offer short, modular workouts for various fitness levels [24]. Surveys conducted among urban dwellers in Beijing and Shanghai revealed a surge in online class subscriptions during lockdown periods, with many users citing convenience, variety of workout options, and virtual community support as key motivators [24; 27]. Other scholars emphasize that live-streaming platforms on Douyin (TikTok in China) and Bilibili – where fitness influencers host daily exercise sessions – contributed to maintaining healthy habits [1].

Despite these promising developments, concerns remain regarding workout quality, the potential for exercise-related injuries without in-person supervision, and the digital divide affecting older adults and lower-income groups [23; 29]. Additionally, researchers have noted

the challenge of maintaining sustained user engagement once lockdown measures were lifted, suggesting a need for improved strategies to foster long-term adherence [1].

The primary **purpose of this article** is to investigate the effectiveness of digital platforms in cultivating physical culture during the COVID-19 pandemic in the PRC. More specifically, this study aims to:

Given the rapid adaptation to online fitness solutions during the pandemic, this article posits that digital platforms played a vital role in sustaining and developing physical culture in the PRC. Through examining user engagement, platform features, and pandemic-related influences, it will be argued that these digital solutions not only met an immediate need but also laid the groundwork for a potentially lasting transformation in how physical culture is practiced and promoted nationwide.

Methodology

Research Design

This research adopts a mixed methods design [6] to examine the effectiveness of digital platforms for promoting physical culture during the COVID-19 pandemic in the PRC. The rationale for using both quantitative and qualitative approaches is to capture not only measurable trends (e.g., rates of platform usage) but also the subjective experiences and motivations of users, instructors, and policymakers. The study was conducted in two primary phases:

1. Quantitative Phase a cross-sectional online survey assessed usage patterns, motivations, and perceived effectiveness of digital fitness platforms.
2. Qualitative Phase semi-structured interviews and focus group discussions provided deeper insight into user experiences, challenges, and societal factors influencing engagement.

Such a design enables methodological triangulation and enhances the robustness of the conclusions [3].

Data Collection

✓ **Survey Instrument.** A questionnaire was developed based on established scales measuring physical activity habits [9] and technology acceptance [7]. Items were adapted to the context of digital fitness platforms in the PRC.

✓ **Distribution.** The survey was administered in Mandarin via an online platform (e.g., Wenjuanxing, similar to Qualtrics), with recruitment promoted through social media channels such as WeChat and Weibo.

✓ **Time Frame.** Data collection occurred between January and April 2021, spanning periods

of partial lockdown and gradual reopening in major cities.

✓ The survey captured demographic information (age, gender, income level, region), frequency of digital platform usage, preferred platforms (e.g., Keep, Douyin, WeChat mini-programs), and self-reported changes in physical activity levels during the pandemic.

✓ **Interviews.** Thirty in-depth, semi-structured interviews were conducted with adult users (aged 18–55) who regularly engaged with at least one digital fitness platform [21]. The interview guide included questions on motivations for using digital platforms, perceived benefits and drawbacks, and post-lockdown intentions.

✓ **Focus Groups.** Three online focus groups (6–8 participants each) included fitness instructors, sports policy advisers, and platform developers. Discussions centered on platform design, user engagement strategies, and policy or infrastructural support needed to sustain digital fitness initiatives.

A purposive sampling strategy guided participant selection for both phases [19]. For the quantitative survey:

- Inclusion Criteria (Chinese residents (over 18 years old) who used any online or mobile fitness platform at least once per week during the pandemic);
- Target Sample Size (600–800 respondents to ensure sufficient statistical power) [5].

For the qualitative phase: a) *Interview Participants.* Purposefully recruited from the survey pool to capture a diversity of age, gender, geographic location, and platform usage frequency; b) *Focus Group Participants.* Identified through professional networks, fitness associations, and referrals from interviewed instructors and policy advisers.

This approach aimed to reflect varying socioeconomic backgrounds and levels of digital access, ensuring that insights were not limited to only urban, high-income users.

Ethical approval was obtained from the Institutional Review Board (IRB) of a leading Chinese university (approval number: 2021-PRC-120). All participants provided **informed consent** electronically. The survey guaranteed anonymity, and interview/focus group participants were de-identified using pseudonyms. Audio recordings and transcripts were stored securely, accessible only to the research team. Any potential risk (e.g., privacy concerns) was minimized by using encrypted communication channels and secure cloud-based storage [13].

Data Analysis Procedures

Survey responses were first **screened** for completeness and eligibility [8]. Descriptive statistics (means, standard deviations, frequencies) summarized user demographics, platform preferences, and activity levels. Inferential tests (e.g., **t**-tests, ANOVA, chi-square) explored relationships between digital platform use and self-reported changes in physical activity. Analyses were performed in **IBM SPSS Statistics (Version 26)** [11].

Interview and focus group transcripts were subjected to **thematic analysis** [2]. Researchers familiarized themselves with the data, generated initial codes, and then identified, reviewed, and defined themes related to motivations, barriers, and future outlooks of digital fitness. NVivo 12 [20] was used to organize codes and facilitate cross-case comparisons.

Through iterative data triangulation – comparing quantitative findings with qualitative themes – emergent patterns were refined and cross-validated [6]. This process ensured that statistical trends (e.g., demographic differences in platform adoption) were contextualized by participants' personal experiences and broader societal influences.

The Concept of Physical Culture and COVID-19. Definitions and Scope of Physical Culture. Physical culture encompasses a broad set of practices, beliefs, and societal norms related to exercise, sports, and overall bodily health. In many contexts, including the PRC, physical culture is closely intertwined with national identity and public health initiatives, often reflecting government priorities and cultural heritage [12]. This holistic view goes beyond mere physical activities; it includes educational programs, community engagement, and policy measures designed to encourage an active lifestyle [4].

In the PRC, physical culture draws on historical traditions such as Tai Chi and Wushu, as well as contemporary exercises and organized sports. Over the last few decades, the government has systematically expanded sports facilities, mandated exercise programs in schools, and promoted nationwide fitness campaigns [14]. These concerted efforts have fostered a collective appreciation for physical well-being, which proved foundational when COVID-19 disrupted conventional avenues for staying active.

When COVID-19 first emerged, public health measures – such as lockdowns, social distancing mandates, and periodic facility closures – significantly disrupted daily routines [25]. These disruptions had multifaceted impacts on health

and lifestyle, especially in the realm of physical activity and mental well-being [28].

Reduced Access to Exercise Facilities. Gyms, parks, and sports complexes were closed or operated at limited capacity, depriving many individuals of their usual workout spaces [4]. **Sedentary Behavior.** With widespread transitions to remote work or e-learning, screen time increased, and incidental movement (such as walking to a bus stop) decreased [22]. **Psychological Stress.** Elevated anxiety and stress levels led to increased susceptibility to unhealthy coping strategies, such as emotional eating and reduced exercise motivation [32].

In the PRC context, these effects were felt acutely in large urban centers such as Wuhan, Beijing, and Shanghai, where strict containment policies often meant entire neighborhoods were under lockdown [27]. However, the PRC's robust digital infrastructure and existing cultural emphasis on maintaining good health contributed to the rapid emergence of alternative solutions, including online workouts, livestreamed exercise classes, and virtual fitness communities [23; 29].

With traditional gyms and sports facilities restricted, many people had to rethink their exercise routines. Surveys and digital activity data indicated the following major shifts:

1. **Growth of Home-Based Workouts.** According to Wang et al. [23], usage rates of mobile fitness applications in China doubled during the early months of the outbreak. People adopted short, high-intensity interval training (HIIT) sessions or yoga routines that required minimal equipment, often following video demonstrations on apps or social media platforms.

2. **Increased Reliance on Virtual Communities.** WeChat groups, Douyin (TikTok in China), and online challenge events emerged as hubs for motivation and support [1]. Livestream workout sessions not only guided participants but also provided a sense of social connection that combated isolation.

3. **Hybrid Fitness Models.** As some restrictions were lifted, a hybrid approach of combining outdoor or gym-based exercise with online resources gained popularity [24]. This shift demonstrated that digital platforms may remain a vital component of fitness routines even post-pandemic, reinforcing a more flexible and personalized approach to physical activity.

While the adoption of these new habits was rapid, long-term adherence remains uncertain. Preliminary studies suggest that sustained en-

gagement depends on various factors, including user-friendly technology, supportive online communities, and ongoing public health measures that reinforce the importance of physical fitness [1; 24].

Results. This section presents the **quantitative** and **qualitative** findings regarding the effectiveness of digital platforms in promoting physical culture during the COVID-19 pandemic

in the PRC. Results are grouped into descriptive statistics, inferential analyses, and thematic insights from interviews/focus groups. All quantitative analyses were performed using IBM SPSS Statistics 26 [11].

A total of **n = 762** valid responses (after data cleaning) were included in the final analysis. The demographic breakdown is presented in **Table 1**.

Table 1

Participant Demographics (n = 762)		
Variable	Categories / Range	n (%) / Mean ± SD
Age (years)	18–60	31.4 ± 7.8
Gender	Male	343 (45.0%)
	Female	410 (53.8%)
	Prefer not to disclose	9 (1.2%)
Residence	Urban (Tier 1 & 2 cities)	491 (64.4%)
	Suburban	172 (22.6%)
	Rural	99 (13.0%)
Average Weekly Income	¥3,000–¥20,000 (approx.)	¥8,600 ± ¥3,400
Education Level	High school or below	145 (19.0%)
	College diploma or Bachelor’s	501 (65.7%)
	Master’s or higher	116 (15.2%)

- Age ranged from 18 to 60 years (M = 31.4, SD = 7.8).
- Gender distribution was nearly balanced: 45.0% male, 53.8% female.
- Urban residency was predominant (64.4%), reflecting the higher concentration of digital infrastructure in major Chinese cities [17].

Participants self-reported their frequency of digital platform usage (number of sessions per week) during three key phases:

1. **Pre-Pandemic (Before January 2020)**
2. **Peak Pandemic (January–March 2021 lockdowns)**
3. **Post-Lockdown (April–June 2021 partial reopening)**

Table 2

Frequency of Digital Fitness Platform Usage Over Time (Sessions/Week)			
Time Period	M (SD)	Median	Range
Pre-Pandemic	1.82 (1.16)	2	0–5
Peak Pandemic	3.25 (1.41)	3	0–7
Post-Lockdown	2.71 (1.28)	3	0–6

Usage increased significantly from M = 1.82 sessions/week (pre-pandemic) to M = 3.25 sessions/week (peak pandemic). A slight decline was observed post-lockdown (M = 2.71), though still above pre-pandemic levels.

A repeated-measures ANOVA revealed a significant main effect of time on weekly usage, $F(2, 760) = 58.46, p < .001$, partial $\eta^2 = .13$, indicating a moderate effect size [5].

Physical activity levels were measured using a 5-point Likert scale (1 = “Very low activity,” 5 = “Very high activity”), adapted from Freedson and Miller’s [9] objective monitoring guidelines. **Figure 1** displays mean activity scores across the same three time points.

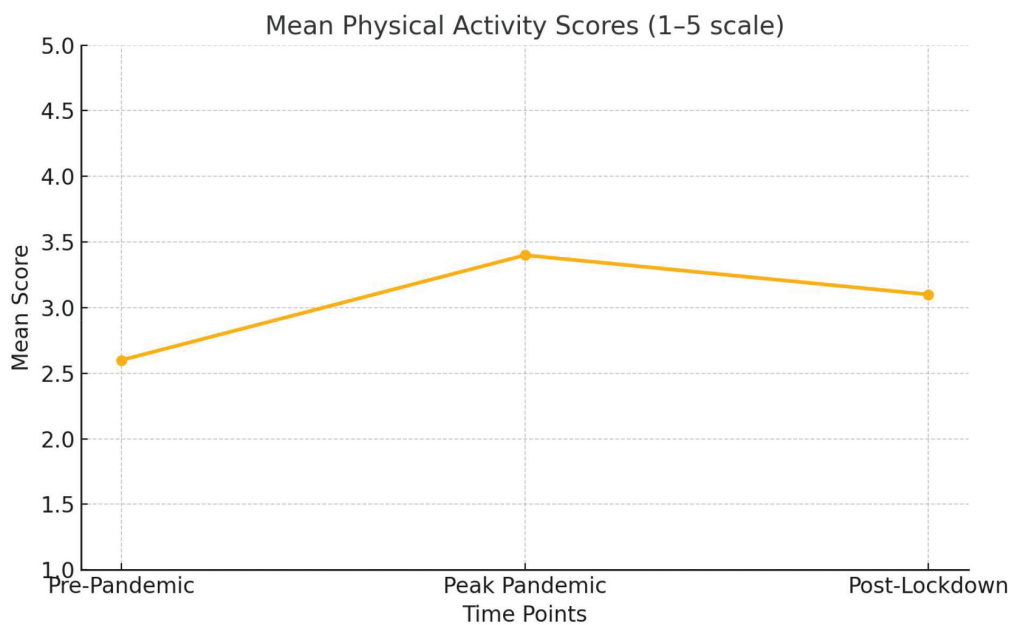


Figure 1. Mean Physical Activity Scores (1–5 scale)

A **one-way within-subjects ANOVA** indicated a significant improvement in self-reported physical activity from **pre-pandemic** ($M = 2.60$, $SD = 0.84$) to **peak pandemic** ($M = 3.40$, $SD = 0.97$), $F(2, 760) = 65.89$, $p < .001$, $\text{partial } \eta^2 = .15$. Although there was a slight decrease **post-lockdown** ($M = 3.10$, $SD = 0.90$), scores remained higher than baseline.

To assess how users’ perceptions of digital fitness platforms influenced their usage, we included Davis’s [7] Perceived Usefulness (PU) and Perceived Ease of Use (PEU) subscales. **Table 3** presents a partial correlation matrix (controlling for age and gender) between PU, PEU, weekly usage frequency, and overall physical activity (PA) level during the peak pandemic period.

Table 3

Correlation Matrix (Partial Correlations) Among Key Variables (n = 762)			
Variable	1. PU	2. PEU	3. Usage Freq.
1. PU	—	.52**	.45**
2. PEU	.52**	—	.39**
3. Usage Frequency (Sessions/Week)	.45**	.39**	—
4. PA Level (1–5 scale)	.33**	.27**	.49**

** Correlation is significant at the .01 level (2-tailed).

- PU and PEU show strong positive correlations with each other ($r = .52$, $p < .01$).
 - Usage frequency correlates significantly with PU ($r = .45$, $p < .01$) and PA level ($r = .49$, $p < .01$), indicating that the more useful users perceived the platform, the more frequently they engaged in digital workouts, which in turn was associated with higher overall physical activity.
- In-depth interviews ($n = 30$) and online focus groups (3 groups, 6–8 participants each) provided rich, contextual insights into how and why users engaged with digital fitness platforms. Three main themes emerged:

1. *Motivation and Convenience*
 - o Many participants highlighted how easy access to workouts (via smartphones or laptops) lowered the threshold to exercise:
“It’s so convenient – no commute, no fixed schedule. I can do a 20-minute HIIT session anytime.”
 - o Several mentioned feeling “more motivated” when seeing immediate feedback or tracking progress within the app.
2. *Social Support and Accountability*
 - o Virtual communities (WeChat groups, Douyin livestream chats) were crucial for emotional support and accountability:

"I join the same workout livestream every evening. It's like a group of friends – if I skip, they notice and ask if I'm okay."

- o Fitness influencers emphasized the importance of online engagement strategies to keep participants committed.

3. *Barriers to Sustained Adoption*

- o A few rural participants noted unstable internet and limited space as recurring challenges.

- o Concerns about instructor credentials and fear of injury without proper supervision also surfaced:

"Some of these online gurus don't seem certified. I worry about hurting myself if I follow the wrong advice."

The findings from our mixed-methods study paint a dynamic picture of how digital fitness platforms influenced physical activity in the PRC during and after pandemic-related lockdowns. On the quantitative side, we see a clear spike in usage during the months when people were confined to their homes. This uptick in digital engagement was accompanied by a notable rise in participants' overall physical activity levels, suggesting that virtual workouts may have served as a viable substitute when traditional gyms and sports facilities shut their doors.

Yet numbers only tell part of the story. Delving into the interviews and focus groups reveals why these digital platforms gained such traction. Many participants described how "just a tap away" access to workouts reshaped their routines, with some admitting they never would have joined a gym in person but found online classes both more accessible and more convenient. The sense of community that emerged in virtual spaces – where users could exchange tips, cheer each other on, or commiserate about sore muscles – appears to have played a major role in sustaining motivation. In other words, the social features that accompany live chats, leaderboards, and group challenges transformed what might otherwise have been an isolated experience into a more interactive and, for some, even fun endeavor.

Meanwhile, the more analytical dimensions of the study reveal that participants' perceptions of platform usefulness and ease of use significantly shaped how often they exercised. This aligns well with the Technology Acceptance Model, which posits that people are more likely to adopt and stick with a new technology if they find it both practical and straightforward. In our context, that meant shorter, well-guided workout videos,

intuitive mobile app interfaces, and friendlier user communities all contributed to higher engagement – factors that tied directly to increased physical activity scores.

Of course, challenges emerged, too. Several rural respondents described unstable internet connections that cut their sessions short, while others worried about the credibility of online "fitness gurus" demonstrating complicated routines without offering real-time feedback. For those living in cramped apartments, the lack of space to move around was a constant hurdle. And, as daily life began returning to its pre-pandemic pace, some participants questioned whether they would keep up their virtual fitness routines once they were free to go back to in-person classes or their previously preferred activities.

Taken together, these results underscore the power – and limitations – of digital platforms in shaping exercise behaviors. While they clearly provided a lifeline to physical activity during times of crisis, the path forward hinges on addressing these persistent gaps in internet stability, content quality, and user trust. With greater oversight and technological improvements, the potential for digital fitness to remain a permanent fixture in the PRC's broader physical culture landscape seems bright. But it remains to be seen if the same factors that drove engagement during lockdowns will be enough to inspire long-term commitment in a post-pandemic world.

▪ **Discussion.** When we started this research, our central question was whether digital platforms could truly uphold and even advance physical culture in the PRC when a sudden crisis – namely the COVID-19 pandemic [16] – disrupted traditional fitness routines. As it turns out, these platforms did a lot more than just fill in the gap left by shuttered gyms and social distancing rules. Our findings suggest that many people didn't just "tolerate" online workouts; they embraced them, and in some cases, discovered entirely new ways of staying active.

One of the most striking observations was the sheer **adaptability** of users who had never before tried digital workouts. When the lockdowns made it nearly impossible to maintain in-person exercise routines, large numbers of individuals turned to apps, livestream classes, and online communities. For some, the ease of flipping open a smartphone and jumping into a 20-minute workout was a revelation – fitting exercise into a schedule that had become chaotic,

yet paradoxically homebound. This echoes broader global trends toward **tele-exercise**, where necessity drives people to explore digital solutions they might have dismissed in more “normal” times [10; 22].

Yet, the numbers only tell half the story. The interviews and focus group discussions uncovered a rich tapestry of experiences and motivations that explain why these platforms resonated so strongly. Many participants spoke about the **social connectivity** they felt through leaderboards, chat functions, and virtual workout buddies. Contrary to the notion that digital interaction is always isolating, these online spaces provided real camaraderie – people sharing workout selfies, swapping nutrition tips, and celebrating personal records. As a result, users reported feeling that “someone out there” cared if they showed up or not, fueling a sense of accountability and motivation that might otherwise have been lost.

It also became clear that this success is deeply intertwined with **technological acceptance**: the more people believed the platforms were helpful and easy to use, the more likely they were to integrate digital workouts into their weekly routines. This neatly aligns with the Technology Acceptance Model [7], suggesting that a slick interface and user-friendly design can make all the difference in whether someone sticks with an app– or gives up after one or two sessions. And in a rapidly digitizing world, that first impression can be pivotal.

However, not everything was a smooth ride. A handful of participants, especially those in rural areas, struggled with **unstable internet connections** and limited living space. Others voiced doubts about the credentials of certain online fitness “gurus,” worried that poor instruction could lead to injury. These accounts remind us that while digital platforms can be extraordinarily empowering, they also risk excluding or endangering segments of the population if technological and quality-control issues aren’t addressed. It’s in this sense that policy can play a big role – be it through **government endorsements** of vetted platforms or by improving broadband infrastructure in underserved regions [17].

The big question going forward is whether this new era of online fitness will last, or if people will drift back to pre-pandemic habits once they’re free to move about normally. Our data suggests a **hybrid future**: many participants say they enjoy mixing online workouts with

occasional gym visits or outdoor exercise. This flexible approach caters to busy lifestyles and changing conditions – after all, if you’re stuck at home for any reason (be it a lockdown, bad weather, or just a lack of time), digital options remain a handy backup. And for fitness businesses, it’s an opportunity to offer creative blends of online and offline services.

In the PRC context, policy support could be instrumental in cementing digital fitness into the national health agenda. The government’s ongoing push for **public health and sports development** [14] suggests that official backing of certain high-quality apps, or incentives for companies that bridge the digital and physical exerciseworlds, could bring about transformative change on a vast scale. Particularly in places where many residents haven’t yet had the chance to explore digital fitness, the right infrastructure and endorsements might spark even greater inclusion.

Of course, our study isn’t without its blind spots. We can’t claim to have perfectly captured the experiences of those with limited internet access, nor can we definitively show long-term effects given the somewhat compressed timeframe of our data collection. Still, the mix of survey responses and personal accounts from interviews paints a compelling portrait of a population that grew more comfortable with technology – and in many cases, more physically active – despite extraordinary circumstances.

In sum, **digital platforms** didn’t just patch the holes in people’s fitness routines; they offered a new kind of freedom – flexibility, community, and a level of personalization that many traditional facilities never quite managed to deliver. If future interventions and policies can resolve issues of access, credibility, and sustainability, then what started as a pandemic-driven stopgap might well become a permanent and vibrant part of China’s fitness landscape.

▪ **Conclusion.** The COVID-19 pandemic became an unexpected catalyst for digital fitness in the PRC, pushing users – novices and seasoned gym-goers alike – to adapt exercise habits to a new, home-bound reality. What initially seemed like a stopgap solution during lockdowns evolved, for many, into a genuine appreciation of the convenience, social support, and diverse content these platforms offer. This study’s findings suggest that even as in-person routines resume, digital workouts will likely remain a valuable component of people’s fitness repertoires, creating a hybrid eco-

system that merges the best of online and offline experiences.

From a cultural standpoint, it is evident that technology can – and does – bolster the longstanding emphasis on physical well-being in Chinese society. Government-led health initiatives and a broadening digital infrastructure provided a fertile environment for the surge in virtual workouts. Our data demonstrated that this surge went beyond mere numbers: interviews highlighted how genuine communities formed online, fueling motivation through daily check-ins, real-time interaction with instructors, and the sheer camaraderie of tackling fitness challenges together.

At the same time, the study also reveals areas that warrant immediate attention. The digital divide remains a pressing concern, particularly in less connected regions, where patchy internet and limited access to quality programming can exacerbate inequalities in health outcomes. Questions also linger around the sustainability of digital workouts. For instance, as people revert to busier schedules, will they view digital fitness as an ongoing resource or a passing pandemic fad? Our results suggest that many will continue to value quick, on-demand exercise options, but the ultimate extent of that loyalty may hinge on issues like the affordability, credibility, and personalization of these digital offerings.

Looking ahead, there is ample scope for **policy, research, and industry** to collaborate in shaping a more inclusive digital fitness landscape. Policymakers can accelerate infrastructure improvements, promote certified programs, and offer incentives for app developers to incorporate adaptive, age- or skill-tailored content. Researchers could design longitudinal studies that track user engagement over several years, providing deeper insight into how online fitness behaviors evolve post-pandemic. Meanwhile, fitness professionals and tech entrepreneurs might explore innovative ways to combine virtual coaching with in-person classes, striking a balance between personal connection and technological convenience.

In sum, this study underscores the resilience and creativity with which the PRC's physical culture has adapted to unprecedented circumstances. By embracing technology, individuals managed not only to maintain but, in many cases, to enhance their exercise routines in a time of global crisis. The lessons gleaned here suggest that digital fitness, far from being a temporary fix, may stand as a permanent fixture in China's evolving health and wellness ecosystem—one that, if guided responsibly, could continue to bridge gaps, spark community engagement, and encourage active living for millions in the years to come.

REFERENCES

1. Anikieiev, D., & Shi, S. (2023). China's fitness industry during the COVID-19 pandemic. *Scientific Journal of NPU Named After M.P. Drahomanov, Series 5. Pedagogical Sciences: Realities and Perspectives*, 94, 5–9.
2. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
3. Bryman, A. (2012). *Social Research Methods* (4th ed.). Oxford University Press.
4. Chen, P., Mao, L., Nassis, G. P., Harmer, P., Ainsworth, B. E., & Li, F. (2020). Coronavirus disease (COVID-19): The need to maintain regular physical activity while taking precautions. *Journal of Sport and Health Science*, 9(2), 103. <https://doi.org/10.1016/j.jshs.2020.02.001>
5. Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159. <https://doi.org/10.1037/0033-2909.112.1.155>
6. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
7. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
8. Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). SAGE Publications.
9. Freedson, P. S., & Miller, K. (2000). Objective monitoring of physical activity using motion sensors and heart rate. *Research Quarterly for Exercise and Sport*, 71(sup2), 21–29. <https://doi.org/10.1080/02701367.2000.11082782>
10. García-Fernández, J., Gálvez-Ruiz, P., Grimaldi-Puyana, M., Angosto, S., Fernández-Gavira, J., & Bohórquez, M. R. (2020). The Promotion of Physical Activity from Digital Services: Influence of E-Lifestyles on Intention to Use Fitness Apps. *International Journal of Environmental Research and Public Health*, 17(18), 6839. <https://doi.org/10.3390/ijerph17186839>

11. IBM Corp. (2020). *IBM SPSS Statistics for Windows, Version 26.0*. IBM Corp.
12. Jia, C., & Ye, S. (2024). Tendencies and characteristics of public fitness behavior in the digital era: An Internet ethnography study based on the K Community in China. *Frontiers in Public Health*, 12, 1414837. <https://doi.org/10.3389/fpubh.2024.1414837>
13. Johnson, B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches* (7th ed.). SAGE Publications.
14. Ministry of Education of the PRC. (2020). *Guidelines for implementing physical education in primary and secondary schools during the pandemic*. <http://www.moe.gov.cn>
15. Nalyvaiko, O., & Nalyvaiko, N. (2024). Education in China: Challenges and Prospects of the XXI Century. *Educological Discourse*, 47(4). <https://doi.org/10.28925/2312-5829/2024.4.8>
16. Nalyvaiko, O., Kulakova, I., Kudaieva, O., Bondarenko, A., Mkrtichian, O., & Shtonda, O. (2024). Forced Distance Learning Chinese Experience Case. Some Lessons for the Ukrainian Education System. *Revista Romaneasca Pentru Educatie Multidimensionala*, 16(4), 154-184. <https://doi.org/10.18662/rrem/16.4/911>
17. National Bureau of Statistics of China. (2022). *Statistical report on internet development in China*. <http://www.stats.gov.cn>
18. National Health Commission of the PRC. (2020). *COVID-19 prevention and control measures*. <http://en.nhc.gov.cn>
19. Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
20. QSR International Pty Ltd. (2018). *NVivo (Version 12)* [Computer software].
21. Silverman, D. (2020). *Interpreting qualitative data* (6th ed.). SAGE Publications.
22. Stockwell, S., Trott, M., Tully, M., Shin, J., Barnett, Y., Butler, L., & Smith, L. (2021). Changes in physical activity and sedentary behaviours from before to during the COVID-19 pandemic lockdown: A systematic review. *BMJ Open Sport & Exercise Medicine*, 7(1), e000960. <https://doi.org/10.1136/bmjsem-2020-000960>
23. Wang, H., Feng, L., Zhang, Y., Zhang, F., Fu, J., Wang, M., Wu, D., Feng, Q., Liu, X., Fan, C., Wang, J., Gao, W., McDonough, D. J., & Gao, Z. (2021). Changes in Chinese Adults' Physical Activity Behavior and Determinants before and during the COVID-19 Pandemic. *Journal of Clinical Medicine*, 10(14), 3069. <https://doi.org/10.3390/jcm10143069>
24. Wei, J., Vinnikova, A., Lu, L., & Xu, J. (2020). Understanding and Predicting the Adoption of Fitness Mobile Apps: Evidence from China. *Health Communication*, 36(8), 950-961. <https://doi.org/10.1080/10410236.2020.1724637>
25. World Health Organization. (2020). *WHO Coronavirus Disease (COVID-19) Dashboard*. <https://covid19.who.int>
26. World Health Organization. (2020). *WHO guidelines on physical activity and sedentary behavior*. <https://www.who.int/publications/i/item/9789240015128>
27. Wu, X., He, Z., Li, M., Han, Z., & Huang, C. (2022). Identifying Learners' Interaction Patterns in an Online Learning Community. *International Journal of Environmental Research and Public Health*, 19(4), 2245. <https://doi.org/10.3390/ijerph19042245>
28. Xiang, M., Zhang, Z., & Kuwahara, K. (2020). Impact of COVID-19 pandemic on children and adolescents' lifestyle behavior larger than expected. *Progress in Cardiovascular Diseases*, 63(4), 531-532. <https://doi.org/10.1016/j.pcad.2020.04.013>
29. Yang, J., Li, X., He, T., Ju, F., Qiu, Y., & Tian, Z. (2022). Impact of Physical Activity on COVID-19. *International Journal of Environmental Research and Public Health*, 19(21), 14108. <https://doi.org/10.3390/ijerph192114108>
30. Zhang Q. (2024). Online health communities provide important support in China. *Nature human behaviour*, 8(1), 8. <https://doi.org/10.1038/s41562-023-01766-8>
31. Zhang S, Ouyang T, Wei S-Y, Liang B-B and Zhu J-M (2022) Research on Sustainable Development of Competitive Sports in China Based on PSR and DEA Model. *Front. Psychol.* 13:925909. doi: 10.3389/fpsyg.2022.925909
32. Zhang, Y., & Ma, Z. F. (2020). Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 17(7), 2381. <https://doi.org/10.3390/ijerph17072381>

The article was received by the editors 02.10. 2024

The article is recommended for printing 08.11. 2024

Чень Жуй

аспірант кафедри здорового способу життя, ехнологій і безпеки життєдіяльності,
Харківський національний економічний Університет імені Семена Кузнеця,
проспект Науки, 9А, Харків, Україна
aspirantzc@gmail.com <https://orcid.org/0000-0001-6663-7504>

ЕФЕКТИВНІСТЬ ЦИФРОВИХ ПЛАТФОРМ ДЛЯ РОЗВИТКУ ФІЗИЧНОЇ КУЛЬТУРИ ПІД ЧАС ПАНДЕМІЇ У КНР

Пандемія COVID-19 порушила традиційні способи фізичної активності, що спричинило швидке впровадження цифрових фітнес-платформ у Китайській Народній Республіці (КНР). Це дослідження розглядає ефективність цих платформ у підтримці та просуванні фізичної культури під час локдаунів і в подальший період. Використовуючи змішаний підхід, дослідження поєднує кількісні дані з опитування 762 учасників та якісні інсайти з 30 напівструктурованих інтерв'ю і трьох фокус-груп. Результати виявили значне зростання використання цифрових платформ у період локдауну, коли середня щотижнева частота використання зросла з 1,82 сесій до 3,25. Самозвіти учасників показали покращення рівня фізичної активності. Користувачі відзначали зручність, доступність та мотиваційні аспекти функцій, таких як заняття в режимі реального часу, елементи гейміфікації та віртуальні спільноти. Однак було зазначено і бар'єри, зокрема обмежений доступ до інтернету, брак професійного нагляду та труднощі з довгостроковою залученістю. Дослідження підкреслює потенціал цифрових платформ для подолання географічних та соціальних бар'єрів у фітнесі, за умови вирішення питань інфраструктури, контролю якості та утримання користувачів. Отримані результати сприяють розумінню того, як технології можуть інтегруватися в ширші стратегії громадського здоров'я, пропонуючи гібридну модель онлайн та офлайн фітнесу як перспективу майбутнього фізичної культури в КНР.

Ключові слова: COVID-19, цифрові фітнес-платформи, фізична культура, Китайська Народна Республіка, прийняття технологій, гібридні моделі фітнесу, стратегії громадського здоров'я.

Стаття надійшла до редакції 02.10. 2024

Стаття рекомендована до друку 08.11. 2024