

A Study on the Promotion and Health Concept of Short Videos on Exercise and Fitness among College Students on Douyin App

Luyu Liu^{1,a,*,†}, and Yingshan Luo^{1,b,†}

¹*Institute of News and Communication, Wuhan University, Luojiashan Street, Wuchang District, China*

²*Department of Radio and Television Programming (Direction of Film and Television Choreography), Haikou University of Economics, Haitao Street, Meilan District, China
a. 631402070221@mails.cqjtu.edu.cn, b. 1905362767@qq.com*

**corresponding author*

†These authors contributed equally.

Abstract: The development and popularity of short video applications, represented by Douyin, have collided with the public health issues that have received unprecedented attention in the post-epidemic era after the outbreak of COVID-19, providing a favorable environment for the development of short videos on sports and fitness. This study uses quantitative and qualitative research methods to investigate the users' behaviours, college students' sense of experience watching short videos on exercise and fitness and the influence of their health concepts. Also, we analyze specific cases to summarize the content creation patterns of such videos targeting college students and the transmission patterns of health concepts in these videos. The study aims to provide a theoretical reference for better serving university students with these videos on the Douyin platform. The study found that the videos on the Douyin platform are viewed by university students with distinctive group characteristics and that the content creation of these videos targeting university students is tailored to the actual needs of university students, forming an interactive mechanism between the bloggers who publish videos and the audience, using the role of companionship and role models as a medium for the transmission of health concepts in these videos.

Keywords: short videos, exercise and fitness, college student, Douyin, healthy concepts

1. Introduction

1.1. Research Background

With economic development and rising living standards, health has become one of the hottest topics in society. In the post-epidemic era, exercising has become more and more universal. The demand for and willingness to access advice and guidance on exercise and health has reached new heights.

Due to the development and popularity of short videos, this new form of media has been a mainstream channel for people to obtain various kinds of information. Douyin App, as a headline application for short videos, was no exception to joining this “national fitness sports card” craze.

According to scholars Ramesh M. & Mahesh K., there is a mutually reinforcing relationship between the development of sports and the development of electronic visuals [1]. In China, this promotion and integration are reflected in the development of short videos that record sports routines, share fitness habits, popularize sports and health knowledge and convey health concepts, which have become a type of fixed forms and content on the platform, that is, exercise and fitness short videos.

Based on the user profile analysis report of Douyin APP for the first quarter of 2022 published by ThePaper.cn on 24 June 2022(https://www.thepaper.cn/newsDetail_forward_18710654) [2], 18-23 years old and 25-30 years old are the main age distribution range of the audience, accounting for 22% and 49% respectively. The user profile report of Douyin shows that since the launch of Douyin in September 2016 and up to the third quarter of 2022, users whose ages are between 20-25 and 25-30 account for the largest number of total users on the platform, with 22.9% and 24% separately. The 20-25 age group corresponds to the college student age group. From a forward-looking perspective of the future market, the 25-30 age group, another major user market for the platform, evolved from the development of users who are currently at the college level. Therefore, the 20-25 age group of college students is the main force of the future market that the Douyin platform needs to focus on and cultivate and is also the most potential user group that can boost the platform substantially.

1.2. Research Needs and Implication

At present, most of the relevant studies in foreign academia are conducted from a medical or sports professional perspective, discussing the improvement of health conditions by the specific content of sports videos; for example, Xiang Wujun, carried out research on how to apply sports videos to help athletes improve their skills effectively [3]. Domestic scholars have also begun to pay attention to the combination between exercise and fitness and short videos and have turned to a series of studies on the mass communication of such videos, achieving some theoretical results. In “A Study on the Communication Content of Short Fitness Videos in the Perspective of Health Communication”, Ge Jun conducts a study on the characteristics of short fitness videos in terms of their communication content, technical form, and narrative style [4]. Based on symbiosis theory, Du Yujing and Li Aijun construct a symbiosis system between sports and fitness and short videos in the new era and study their symbiosis approaches [5]. The data from the aforementioned report indicates that 18-23-year-olds and 25-30-year-olds account for the highest proportion of users and are the main contributors to activity, accounting for nearly half of the entire platform’s users. From the platform’s strategic perspective, 25-30-year-old users are developed from 18-23-year-old users. Focusing on the 18-23 years old user group, stabilizing and expanding this user group should be a key move for the platform to seize the opportunity in the future market. This age range is the corresponding social group of young people, mainly university students. Ge Hongwei has also suggested that the mainstream audience of new media is young including short videos, and that an in-depth understanding and catering to the needs of young users is the primary task for the development of short video platforms [6].

In addition, according to the latest China Internet Development Statistics Report, the Internet is being widely used in education, social networking and entertainment, and college students have an active mind and are the fastest and easiest group to accept new things, thus becoming the most active Internet users [7]. Hence, this study selects the college student group as the research target to study users’ behaviours and sense of experience, as well as their satisfaction and suggestions in watching such videos on Douyin platform.

At the same time, this research also noticed that there are a considerable number of exercise and fitness videos on the Douyin short video platform aimed at university students as a particular objective audience, and this part of the short videos has obvious common features and general patterns for

specific groups of people, so this pattern will be regarded as another focus of our research to explore the significant pattern of health concept transmission in the videos.

To address these two questions, we combine quantitative and qualitative research, with the goal of providing a theoretical reference for the future market of sports and fitness videos on the Douyin platform, in order to help them better reach the 18-23 age group, mainly university students.

2. Methodology of Research

2.1. Quantitative Researching Methodology

2.1.1. Questionnaire Approach

In accordance with the objectives of the study, the questionnaire was designed to use three dimensions to reflect the user behaviours and sense of the experience of college students watching exercise and fitness videos on the Douyin platform: content preference, the sense of experience and satisfaction, and the influence of health perceptions. The survey was conducted without any form of interference and harm to the participants, with the promise that all data would be used for this study only and that their privacy would not be compromised. The questionnaire was distributed through WeChat, and the link to the questionnaire was publicly placed on the social media platform. 70 valid questionnaires were returned.

2.2. Qualitative Researching Methodology

2.2.1. In-depth Interview Method

This paper chose to use in-depth interviews as a supplement to the quantitative research questionnaire method, interviewing three respondents in a semi-structured manner to investigate the real feelings and demands of university students about the current situation of exercise and fitness videos on the Douyin platform, and to understand their suggestions and expectations for the future development of such videos on the platform. The interviews were conducted online and the interviewees were informed that the interviews would be recorded beforehand. We ensured that all conversations would be used for this study only and that no privacy of the interviewees would be revealed. The two interviewers did not give subjective guidance to the interviewees during the interview.

2.2.2. Case Study and Content Analysis Methods

Through the typical cases sampling method, this research collected 30 sports and fitness videos on the Douyin platform, which was targeted at university students and had more than 3000 likes. By extracting, analyzing and summarizing the content of the videos, three categories and sub-categories belonging to each of the three categories were established in terms of exercise requirements, action descriptions and health concept transmission, so as to explore the common patterns of content creation and health concept transmission of the short videos on the Douyin platform with college students as the target audience. The categories for content of cases are displayed in Table 1:

Table 1

Exercise Requirements	Exercise equipment and aids
	Exercise intensity and frequency
	The physical condition of the exerciser
Action Descriptions	Level of difficulty
	Function and effect

Table 1: (continued).

Health Concept Transmission	Time and space restrictions
	Whether the noise is generated
	Diet philosophy and lifestyle
	Exercise and fitness habits
	Health knowledge and information

3. Research Findings

3.1. Questionnaire Results

3.1.1. Content Preference

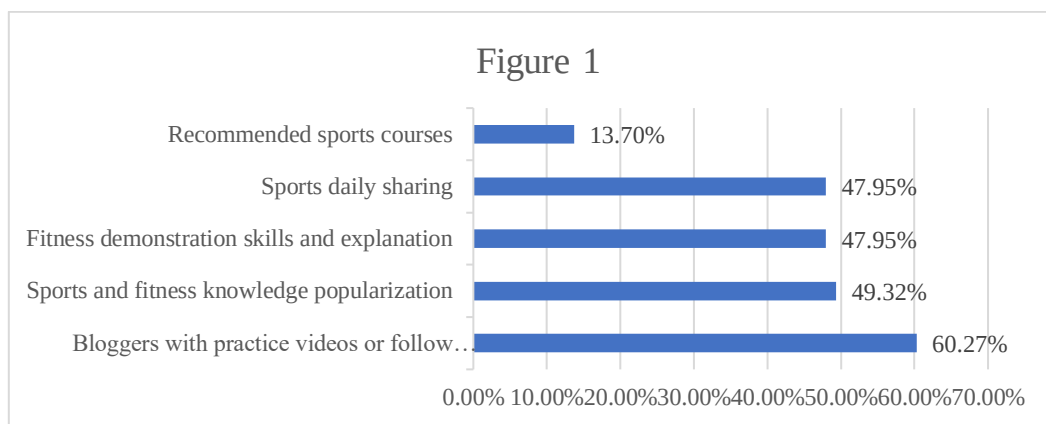


Figure 1: Data results for content preference.

As can be seen from Figure 1, the proportion of college students watching exercise and fitness short videos through bloggers with practice or following practice tutorials reached 60.27%, while the proportion of sports and fitness skill demonstration and explanation, sports and fitness knowledge popularization and sports daily sharing were similar, and the proportion of sports course recommendation was the least, accounting for only about 13.7%, indicating that college students were least interested in the content form of sports course recommendation. The reasons for this difference will be further analyzed from the content themes of sports and fitness short videos watched by college students. This is illustrated in Figure 2:

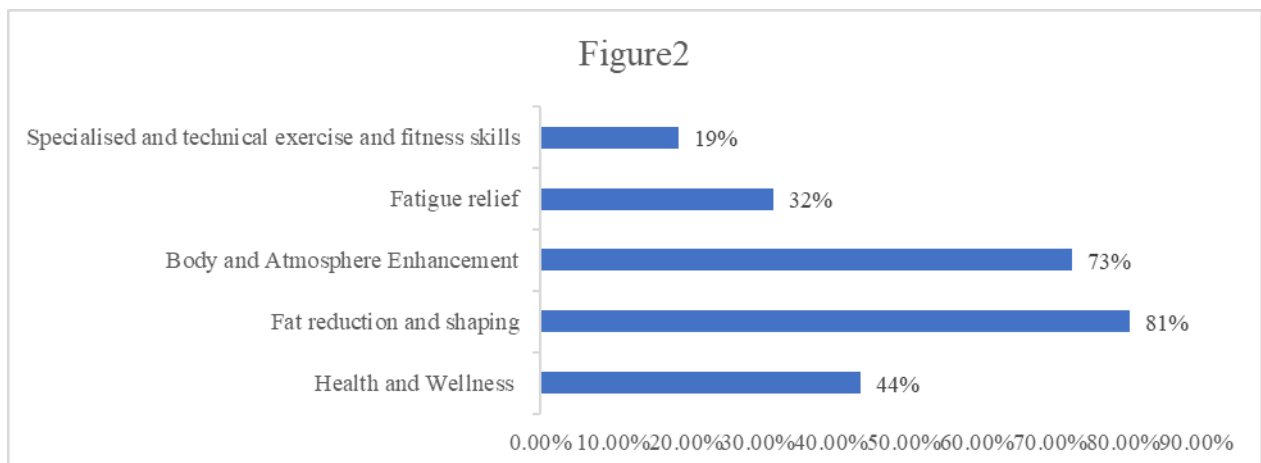


Figure 2: Proportion of different content themes.

It is evident that fat loss and shaping is the main content theme that university students tend to watch, constituting 81%, followed by short videos related to physique and temperament enhancement, with 73%. In comparison, professional and targeted exercise and fitness tips only make up 19%, suggesting that relatively few university students are concerned about professional exercise and fitness tips.

3.1.2. Sense of Experience

We used a five-degree Likert scale to measure the perceptions of use and satisfaction of college users. The following statements were listed and they were asked to rate how much they agreed with the statements and how well they fit into their situation. There are five score options on a scale of 1 to 5, representing total disagreement, basic disagreement, neither agree nor disagree, basic agreement and total agreement. The results of the average scores obtained from the survey for each item are shown in Table 2:

Table 2

Choose the item that matches according to the actual situation.	Average score
1. I will like and bookmark short fitness videos and recommend them to others.	3.58
2. I have a favorite fitness video blogger that I frequently watch.	3.49
3. Watching short videos on exercise and fitness makes me feel happy and active.	3.68
4. Short fitness videos help to improve my physical fitness.	3.78
5. Short fitness videos help improve my mental health.	3.75
6. I think there are a lot of quality fitness videos on TikTok and I can often find the ones I want to watch.	3.58
7. Viewing short exercise and fitness videos can provide me with guidance and support in sports and fitness.	3.82
8. Exercise and fitness videos make me more willing to be active or more interested in fitness and exercise.	3.82

The scores in the line graph are generally higher than three, indicating that students are more satisfied with the use of sports and fitness videos, with the lowest score being “I have a favorite fitness video blogger that I frequently watch”.

3.1.3. Influence of Health Concept

Whether, and to what extent and in what aspects, the view of health is affected is demonstrated in the following two figures:

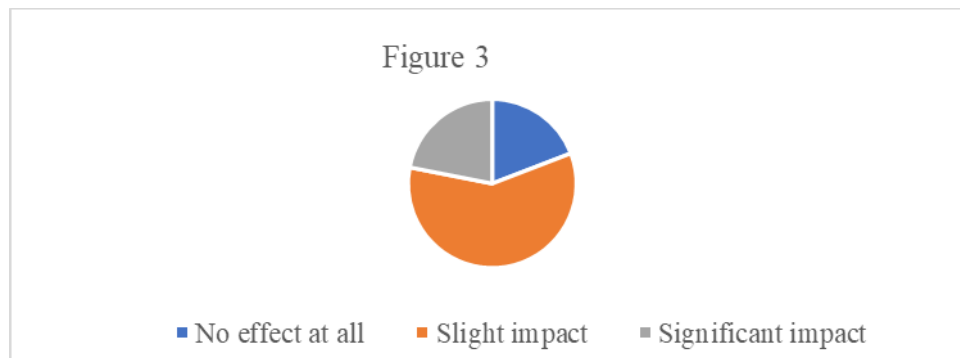


Figure 3: Impact on health perceptions.

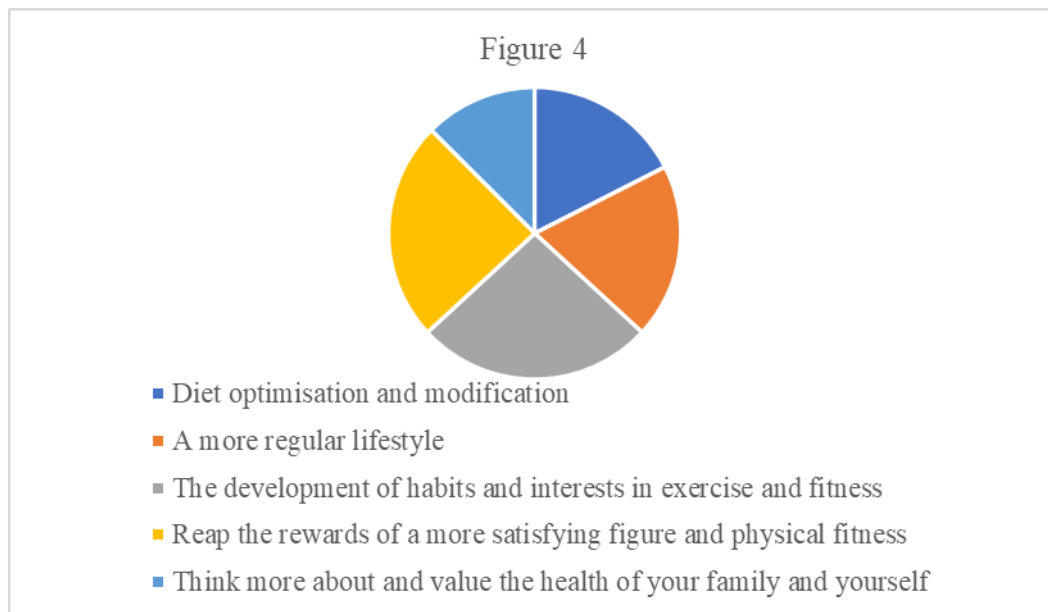


Figure 4: Specific impact.

From Figure 3, the total percentage of university students who watched short videos on exercise and fitness that had an impact on their view of health was about 80.02%, Of these, 21.92% were “Significant impact”.

As Figure 4 shows, it is seen that through the viewing of exercise and fitness short videos, college students’ exercise and lifestyle habits are somewhat influenced, they are more satisfied with their body shape, their physical quality is improved, and thus they are more interested in exercise and fitness and develop the habit of fitness and exercise, Wen-hua HAN & Hao CUI believe that sports-related content on social media is conducive to enhancing college students’ exercise motivation [8]. It also makes college students pay more attention to and think about their health and that of their families. Mengdi Li suggested that by getting in shape through fitness, college students have gotten closer to a healthy weight and body fat percentage and improved their physical fitness [9].

3.2. In-depth Interview Results

The following results were obtained from the interviews with three university students:

Currently, watching exercise and fitness short videos on the Douyin platform can basically satisfy their own needs, and whether they use keyword searches or the platform’s big data recommendations, they can find something applicable to them in the results.

In the process of watching videos, the three interviewees often engaged in liking, collecting and commenting, and were willing to interact with bloggers and other platform users.

Highly popular professional platform bloggers such as Zoey, Pamela and Liu Genghong were mentioned by the interviewees many times during the interviews, and all three interviewees had watched a certain number of videos posted by the above-mentioned bloggers.

All three interviewees were willing to recommend short videos on the Douyin platform to others as a tool for obtaining exercise-related information and guidance.

The uneven quality of the videos and the lengthiness of some of them were commonly cited as shortcomings by all three interviewees, which is the main existing problem on the platform.

In the process of browsing these videos regularly, the view of health may change and be reshaped according to different trends and concerns at different times, but all three interviewees believed that a good and stable concept of health would be formed gradually.

3.3. Results of the Case Content Analysis

3.3.1. Exercise Requirements

In the cases sampled for this study, the content that falls under the category of Exercise Requirements is as follows: “no equipment”, “just a chair”, “use a supermarket bottle of mineral water instead of a dumbbell”. The language used in the videos, the titles of the videos, or the textual content posted with the videos all revolve around exercise equipment and aids, with most of the videos emphasizing that no equipment is required to complete the exercise, or that only very easily available everyday household items are required as aids. Statements related to intensity and frequency of exercise include “10 minutes per session, follow it for a week”, “adjust the frequency of training according to your fitness”, “low-intensity exercise”, and “punch in 3-5 times a week”, “The overall frequency of training is mainly low intensity and flexible. “Suitable for newbies who are not sufficiently fit at the beginning of fat loss”, “Large base weight can also be tried with confidence” and “Preferably with a certain training base” belong to the relevant exercise requirements about the physical condition of the exerciser.

3.3.2. Action Descriptions

“Beginner-friendly tutorials”, “Learn it all in one go from a zero base”, “Super-easy fat-burning aerobics”, “Not recommended for beginners” are descriptions of the difficulty level of the moves, with an emphasis on easy to learn, while there are some more difficult and professional videos as well. The descriptions of effect and function in the videos include: “Effective calf exercises”, “Free muscle building at school”, “15 days to say goodbye to your bucket waist”, “Holiday exercise plan to help you become beautiful before school starts” and “Relieve sedentary back pain”; the descriptions related to the movement time and space limitation are “Practice anytime, anywhere”, “Use recess time to exercise” and “No need to go to the gym and hire a personal trainer”. Most of them are not strictly limited in terms of time and space but are more flexible. “No noise”, “no disturbance to roommates”, etc. describe whether the movements are noisy.

3.3.3. Health Concept Transmission

Statements that convey a vision of health in terms of dietary philosophy include “Ensure a balanced intake of the three major nutrients”, “Don’t try to diet”, “Know the right order of eating for more effective weight loss”, “Take OMEGA-3 supplements”; “Have a good mood and mental state throughout the day”, “Exercise regularly to keep your appetite and mood stable”; and “developed a healthy lifelong hobby”, “high-intensity exercise burns calories is very stress relieving” and “became

more disciplined” are health perceptions communicated about the attitudinal aspects of exercise and fitness; “Getting enough sleep is good for lowering cortisol hormones and accelerating fat burning efficiency”, “Calculating the best amount of water to drink each day based on body weight”, “Maintaining a daily exercise routine is good for gastrointestinal health” are all related to health knowledge literacy.

4. Conclusions and Discussions

4.1. Summary of Conclusions

4.1.1. User Behaviour & Sense of Experience & Influence of Health

College students browse the short videos on the Douyin platform with the main content of following exercises to achieve various sports and fitness purposes, mainly fat loss and shaping, and are satisfied with the current status of such short videos, most of them can form better health concepts about exercise, diet and life by watching related videos, and exercise and fitness short videos are the way they tend to choose to get information and guidance related to exercise, which is consistent with Duan Jingyu’s suggestion in his study that mobile media is the main channel for college students to get information in the field of sports [10].

4.1.2. Sense of Satisfaction and Suggestions

Integrating the results of in-depth interviews, it is clear that university students are satisfied with the development of exercise and fitness videos on the Douyin platform, which can basically meet their sports and fitness needs. They are more likely to watch the videos of highly popular professional sports and fitness bloggers, and often interact with them on the platform by liking and collecting them and consider short videos on the Douyin platform to be a good tool for accessing sports-related messages and getting sports and fitness directions, and will recommend them to others. However, there are still a few videos on the platform that are not of high quality, not professional enough, or not well produced and too long, and there is a certain amount of plagiarism. It is recommended that the platform needs to adjust and effectively monitor and audit the creation and publishing mechanism for no threshold.

4.1.3. Content Creation Rules and the Transmission of Healthy Concepts

Through the content analysis of sample cases selected on the Douyin platform, the video content was categorised according to several categories. From the establishment of the categories, the short videos on the Douyin platform targeting college students as the target audience showed the following commonalities and patterns in content creation:

The requirements for sports are generally low, with no strict or mandatory requirements for sports equipment, exercise intensity and frequency, or the physical condition of the exerciser.

The descriptions of the movements are specific and detailed, ranging from general videos, which are labeled as easy to learn, to more advanced content, with a high degree of professionalism and difficulty. The videos often focus on the effects and functions of various fitness movements and exercise styles. The movements are not strictly limited in time and space, and can often be performed in a variety of time and space conditions in the daily life of university students, and some of the videos emphasize that the movements are noise-free, making them particularly suitable for public areas such as student dormitories.

By sharing exercise routines and experience tips in their videos, short video bloggers show their own diet and lifestyle and fitness habits, which serve as role models for their audiences and provide

reference on life, diet and exercise and fitness as well as knowledge dissemination for the university student user base, thus inspiring them to imitate and learn from the various behaviours and habits of the bloggers and complete the transmission of health concepts. Contrasting with Shuzhen Cui's suggestion in the literature that sports information on the internet has an impact on university students' sports awareness and behaviour [11], the health concept is likewise a branch of sports awareness.

In conclusion, the exercise and fitness short videos on the Douyin platform targeting undergraduates take into account the actual conditions and realistic needs of them, catering to the time constraints of their busy academic schedule, the inconvenience of going out of school, the space and environment limitations of group accommodation and canteen meals, and the financial restrictions of inadequate discretionary funds, as well as their real demands for fat loss and body optimization. With reference to these, bloggers create universal or specialist video content to meet the needs of a diverse group of university students.

The presence of the blogger is an encouragement, a companion or an example of successful practice for the audience in the process of achieving their goals and forming habits. In other words, such videos are based on the interactive mechanism of "sharing-learning" between the transmitter (the blogger) and the audience (the university community), using the blogger's role as a companion and role model as a medium for the transmission of healthy concepts.

4.2. Future Prospects

On TikTok, the overseas version of Douyin, exercise and fitness videos have also gained many followers and a high degree of attention, and their content patterns and concepts are distinctly different from those of the domestic version, while the viewing and feelings of overseas university students towards exercise and fitness videos are also dissimilar to those of Chinese university students owing to differences in cultural habits and ideology. We suggest that we can explore the differences in the user behaviour of domestic and international university students watching sports and fitness short videos and the differences in the content creation of sports and fitness short videos on the Douyin platform in China and abroad by comparing different versions of Douyin.

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