

# *Young People's Attention to Health and Wellness after the Normalization of the Epidemic Situation*

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**Abstract:** Nowadays, Covid-19 prevention and control measures have a large effect on society. In this social context, some young people are experiencing various degrees of physical and psychological problems, which prompts them to seek things that can provide them with health and psychological comfort. In today's era of developed social media, wellness has become the object they seek and promote. Considering the removal of Covid-19 prevention and control measures in China, as well as the psychological state of contemporary young people, this article explores the psychological state of young people during and after the pandemic, as well as their level of attention towards health preservation. The paper collects and analyzes comments with relevant tags from multiple platforms and discusses the psychological state of young people and their attention toward health preservation before and after the end of pandemic prevention and control measures. After preliminary data analysis, this paper manually annotated the data to train a neural network for text classification. The research results show that young people displayed psychological problems on social media before and after the pandemic, and their attention to health preservation remained high.

**Keywords:** epidemic era, Chinese traditional regimen, young people, mental health

## 1. Introduction

Traditional Chinese Medicine Health Preservation is a field focused on traditional Chinese health preservation theories and techniques, which aim to improve physical and mental well-being, prevent illnesses, and extend lifespan through the guidance of traditional Chinese medicine theory. Health preservation has become popular among young people in recent years due to the stress of modern life and an increased focus on health. However, young people's declining physical and mental health is a cause for concern. According to the "Young People's Health Preservation Consumption Trend Report," over 50% of the post-90s generation in China suffers from health-related problems such as hair loss, weakened eyesight, insomnia, obesity, and weakened immune systems. This has increased collective anxiety, with a significant percentage of young people worrying about sudden death, as revealed by the "2020 National Health Insight Report." Additionally, the trend of health anxiety is spreading among young people [1].

The National Health Commission's measures for preventing and controlling Class A infectious diseases for novel coronavirus infection would be lifted. The decision was made due to the decreased number of Covid-19 cases in China and the successful control of the pandemic within the country. This announcement proves that Covid-19 prevention and control measures have been removed in China [2].

The psychological well-being of young people has been a concern during the COVID-19 pandemic. The pandemic poses a risk to physical health and disrupts psychological balance, leading to various mental health issues. The lack of social interaction during isolation also resulted in feelings of loneliness and missing classmates and teachers. A study by O'Toole et al. revealed that during school closures, 85.7% of parents reported changes in their children's emotional state, with common symptoms including lack of concentration, boredom, irritability, restlessness, and anxiety [3]. Another domestic study also showed that some school-aged children and adolescents exhibited more serious psychological problems and post-traumatic stress disorder symptoms during the pandemic [4]. A foreign study reported that the incidence of adolescent depression during the COVID-19 epidemic ranged from 22.6% to 43.7%. In contrast, two other studies found that the incidence of adolescent anxiety symptoms was between 18.9% and 37.4%, with similar or even higher levels of depression [5]. Additionally, somatic symptoms were prevalent among children and adolescents during the pandemic, with incidence rates ranging from 10% to 30% [6,7]. There are also reports that the incidence of physical symptoms in children ranges from 2.39% to 22% [8].

The mental state of college students has also been negatively affected by the pandemic [9]. Although the pandemic is no longer as rampant, students continue to receive information from both domestic and foreign sources, causing concerns about life safety, reality, and restrictions on freedom, which can lead to psychological stress and problems. The COVID-19 pandemic has had a poor impact on the mental health of college students, including the ineffective online delivery of ideological and political education, psychological problems caused by long-term isolation and online teaching, and difficulty in applying online ideological and political education to practice.

Today, young people are experiencing the effects of accelerated economic and social transformation, increasing wealth gap, and social contradictions, leading to a sense of loss and a desire for change. Anxiety appears to be a widespread syndrome affecting society, and young people's health anxiety can be attributed to increasingly strict health standards and the rise of health risk factors. As a result, young people tend to consume health-related products to alleviate anxiety and gain a sense of self-improvement.

Traditional Chinese health-preserving practices can benefit practitioners' physical and mental health in the post-pandemic era [10]. They are characterized by simple and easy-to-learn movements, moderate exercise intensity, and small requirements for venues, making them suitable for a wide range of people and easy to carry out. As a result, they are highly respected.

Previous research has mostly focused on the current situation of young people's health preservation, the psychological status of young people during the epidemic, or the relationship between the epidemic, young people, and health preservation, without discussing the three together.

After the normalization of the epidemic, many people have raised higher requirements for their health. This study will use literature review and data analysis to identify the reasons why young people are enthusiastic about health preservation, explore ways for psychological self-regulation, reflect on the underlying social issues, and provide clearer avenues for health preservation. This paper has conducted preliminary data analysis for this purpose and manually annotated the data to train a neural network for text classification.

The rest of this paper is organized as follows. Section 2 gives an overview of the proposed methods, including classifying. Moreover, section 3 shows our analysis's experimental results and pie chart.

## 2. Methods

General description: Through the collection and analysis of comments on social media platforms (take Zhihu, Weibo, and Xiaohongshu as examples), the emotions and demands of users under relevant conditions are reflected, and the problems and causes of public anxiety are found.

### 2.1. Data Acquisition

**Automatic grab:** The crawler is used to automatically obtain the data. Data source: Zhihu.

**Manual crawl:** By searching relevant keywords (traditional Chinese medicine health/adolescent mental health/epidemic anxiety) in Weibo/Xiaohongshu, collecting comments on related blog posts with a high number of likes and retweets, and screening out meaningless content (emoticons/single punctuation / @other users/advertisements/task-based retweets/repeats, etc.) in nearly 3000 comments, we found about 1000 comments related to the theme. These comments were then annotated with search keywords and the general content of the blog for later analysis.

### 2.2. Data Analysis

By classifying the topics discussed in comments and showing the user's self-elaboration, this paper can find the views he wants to express, the problems he reveals, or his attitude towards the topic.

On the Weibo platform, this paper divided 500 valid comments into six categories (traditional Chinese medicine health/adolescent mental health/epidemic, adolescent psychology/epidemic anxiety/adolescent health/health). The comments came from official media such as Min.cn, Sanlian Life Weekly, China News Weekly, and Caixin, as well as from freedom lovers with high popularity in related fields. Among them, the most discussed topic is epidemic anxiety. This paper collected 294 valid comments on this topic, including the media's downplaying of discussions on the epidemic, the sadness and anxiety of Chinese at home and abroad at the epidemic's peak, and the haze of H1N1 and COVID-19.

On the Xiaohongshu platform, this paper divided 474 effective comments into five categories (adolescent psychology/adolescent health/adolescent anxiety/college students under the epidemic anxiety/college students under the epidemic). The comments came from professional bloggers such as psychological consultants, consulting institutions, Chen Shi Zhen Yi, and many life bloggers and learning bloggers. Among them, the most discussed topic is college students under the epidemic. This paper collected 162 valid comments on this topic, including college students' self-report about the epidemic, college students' life during the epidemic, young college students in the fight against the epidemic, and mutual assistance among college students.

On the Zhihu platform, this paper automatically collected 1142 comments, sifted out 30 invalid comments, and divided the remaining comments into 29 categories (life/sports/exercise/insomnia/staying up late, etc.). Among them, 115 comments were approval and approval, followed by 84 comments on traditional Chinese medicine and 70 comments on anxiety.

This paper integrates and discusses the comment information from the three platforms to prepare for a more detailed analysis of the neural network model.

### 2.3. BERT

BERT is a method used to pre-train language representations. This means that a general-purpose "language understanding" model is trained on a large text corpus (such as Wikipedia). Then this model is used for downstream natural language processing tasks that are important to us (such as question answering). BERT outperforms previous methods because it is the first unsupervised, deeply bidirectional system for pre-training natural language processing.

The unsupervised nature of BERT means that it can be trained solely on a large corpus of text. This is a crucial feature because a large amount of plain text data is publicly available on the internet in many languages.

The pre-training method can be roughly divided into context-unaware models such as bag-of-words and context-aware methods. Context-aware methods can be further divided into unidirectional and bidirectional methods. Bag-of-words models such as NNLM, Skip-Gram, and Glove are single-layer shallow models that cannot take context into account. LSTM and Transformer are typical deep neural network models that can take context into account.

BERT is the latest state-of-the-art model as of October 2018, and it has achieved impressive results by pre-training and fine-tuning 11 NLP tasks. This is its biggest advantage. Moreover, it uses Transformer, which is more efficient than RNN and can capture dependencies over longer distances. Compared to previous pre-training models, BERT captures true bidirectional context information.

### 3. Results and Analysis

This experiment is divided into three parts. This paper tests people during an epidemic and those who are now officially open to it (to the extent that the National Health Council officially lifted the prevention and control of infectious diseases in category A for new crown infections on January 8, 2023. This paper tests the level of interest in health maintenance for people in the epidemic and those who are now officially open (up to January 8, 2023, when the National Health Council officially lifted the control measures against A new crown infection).

Table 1: Summary of number of comments.

Zhihu micro-blog Xiaohongshu comment tag classification	
Search for keywords	Total amount of data (pcs)
Chinese Medicine and Wellness	358
Teenage depression	80
New Crown Seal Control	8
Psychological anxiety	81
Epidemic anxiety	458
The gloom of influenza A and the new crown	125
Sleep problems	116
Psychological problems of adolescents	45
Sports and Fitness	28
Life and work	69
State of mind	16
Specialities	26
Healthy eating	34
Mental stress	25
Illnesses (sub-health)	91
Vaccines for outbreaks	33
Endorsement	115
Invalid comment	30

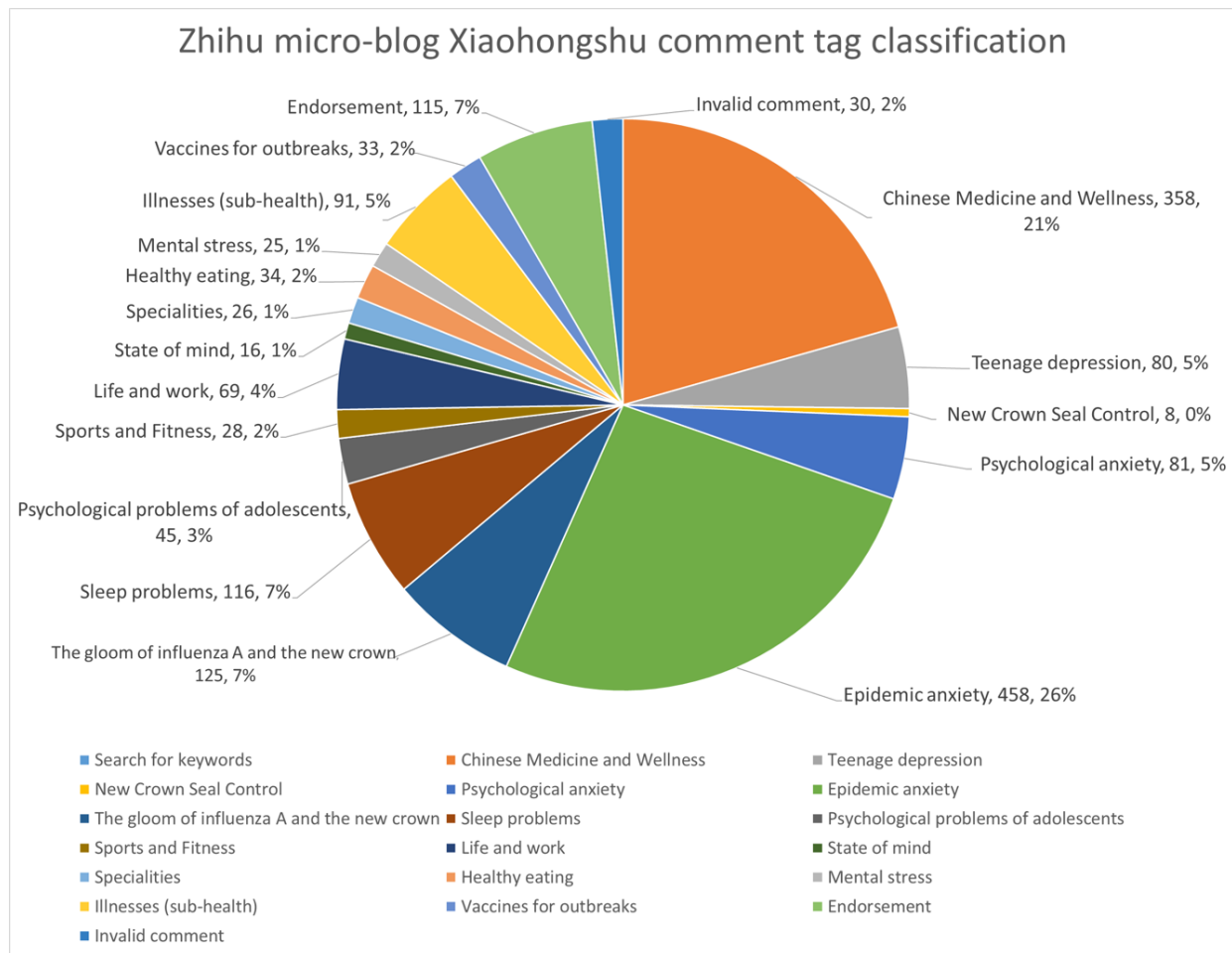


Figure 1: The overview of data analysis.

All the experimental data in this section were obtained from today’s mainstream social media platforms, Zhihu, Weibo, and Xiaohongshu, and all the results were obtained through iterative validation and analysis. This paper uses Python to obtain keywords related to the topic on Zhihu, such as sleep problems, health, Chinese medicine, sports and fitness, life and work, mind professional, diet and health, psychological anxiety, mental stress, sub-health (disease), cancer, suspected disease, epidemic vaccine.

This paper manually selected data from Weibo and Xiaohongshu for relevant comments such as Chinese medicine and health, teenage depression, depression in the peak of the epidemic, epidemic prevention and control of the new crown, teenage psychological anxiety, epidemic anxiety, the gloom of influenza A and the new crown, sleep problems, teenage psychological problems. As shown in Table 1.

As shown in Figure 1, the final result is the classification of Zhihu Weibo Xiaohongshu comment tags. It clearly shows how much attention people are paying to the different categories of tags on this topic. By taking the data this paper obtained and visualizing it as a pie chart, it is clear to see the breakdown of the review hashtags on the Zhihu microblog Xiaohongshu.

With 26% of the tag names being epidemic anxiety, the comment tags elucidate the highest. The following focuses on the two largest tag categories: epidemic anxiety and Chinese medicine and wellness.

An analysis of the comments under the epidemic anxiety label reveals seven main manifestations. First, suspicion of illness and fear of being infected with the disease. Some patients with low fever

were afraid to go to the hospital for fear of being left behind. Some feel surrounded by the “new coronavirus” and are inexplicably nervous when they hear about an epidemic. Some patients with physical or psychological illnesses are aggravated by this—secondly, nervousness and anxiety. The patient often feels disturbed, restless, out of control, prone to temper tantrums, and uncontrollably concerned about information. There is always a fear that “pneumonia” will come to you and your family. Thirdly, there is a tendency to become depressed. Pessimism, lack of energy, crying, unhappiness, loss of appetite, or overeating. Fourth, sleep disorders. The symptoms are difficulty falling asleep and shortening sleep time, disturbance of sleep patterns, and poor sleep quality. Fifthly, compulsive symptoms. The main manifestation is repeated hand washing and difficulty in self-control. Some have compulsive thoughts, repeatedly thinking about the serious consequences of pneumonia caused by the new coronavirus infection, and feel distressed by this—sixth, somatic symptoms. When a person is under greater stress, adverse emotions are often transformed into somatic symptoms that manifest themselves. These symptoms often include somatic pain, dizziness, triple strength, dry mouth, low fever, loss of appetite, indigestion, abdominal discomfort, and other manifestations of plant nervous disorders.

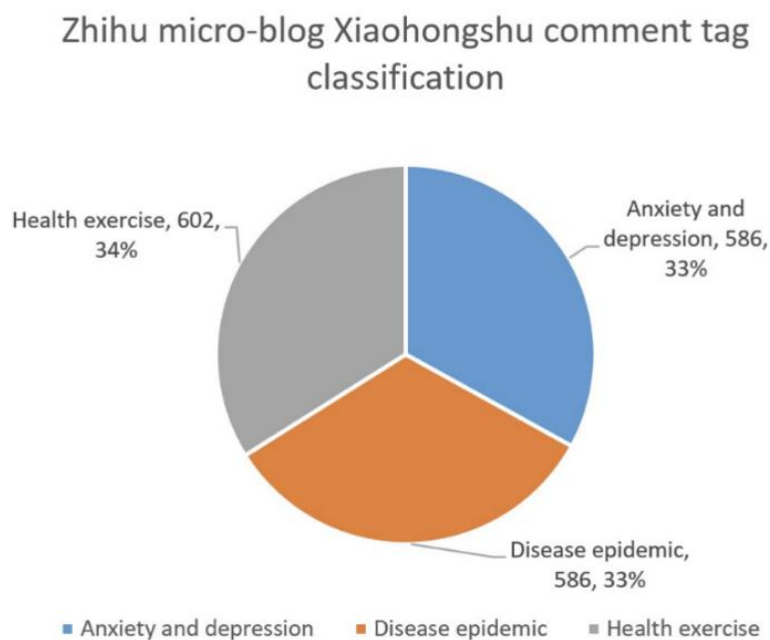


Figure 2: Comment tag classification.

The second highest comment tag category, with 21%, was Chinese medicine for health. With the epidemic, people are becoming increasingly conscious of their health status. There were many keywords in the comments related to keeping warm, herbs, drinking tea, wolfberry, taking care of the spleen, liver, kidney, and ginseng.

To facilitate the establishment of a neural network model, this paper categorizes the data again. Adolescent depression, psychological anxiety, epidemic anxiety, H1N1 and COVID-19 haze, sleep problems, adolescent psychological problems, and mental stress were combined into the depression and anxiety category. COVID-19 containment and control, TCM health preservation, TCM medicine, sub-health problems, and epidemic vaccines were combined into the category of disease outbreaks. Sports and fitness, life and work, mentality, professional diet, and health into the health sports category. The data were reclassified into three groups: 586 comments related to depression and anxiety, 586 comments related to the disease epidemic, and 602 comments related to healthy exercise. The results as shown in Figure 2.



Table 2: Dataset for BERT.

Topic	Anxiety and depression	Disease outbreaks	Health Exercise
Maximum word count	540	509	1040
Minimum word count	2	2	2
Total word count in this category	26801	20007	40785
Average word count in this category	46	34	68

This paper presents the dataset for BERT, as shown in Table 1. The first topic is Anxiety and depression. In this topic, the Maximum word count is 540, and the Minimum word count is 2; the Total word count in this category is 26801, Average word count in this category is 46. The second topic is Disease outbreaks. In this topic, the Maximum word count is 509, and the Minimum word count is 2. The Total word count in this category is 20007. The average word count in this category is 34. The third topic is Health exercise. In this topic, the Maximum word count is 1040, and the Minimum word count is 2. The Total word count in this category is 40785. The average word count in this category is 68. All data sources in this paper apply as in the method section. This paper trains BERT based on the data in the table and finally obtains a model with an accuracy of 91%.

#### 4. Discussion

**Limitations:** 1) Low correlation between data: After obtaining comments from Zhihu, Xiaohongshu, and Weibo, this paper summarized different tags and classified them based on themes. However, this paper only performed basic summarization of the data. Although the data this paper collected was based on the same theme, each comment was independent of the others, and there was a weak correlation between the comments and the pandemic and health. Thus this paper needs more evidence to demonstrate the correlation between the mental state of young people during the pandemic and their attention to health. 2) Limitations of research methodology: This paper's methodology needs to be more complex and limited to data collection and basic processing. There is a large amount of useless data in the raw data collected. Due to the scattering of themes and comments, the preliminary data obtained cannot effectively reflect a certain viewpoint. 3) Limitations in target audience: This paper's target audience for research is contemporary young people, but this paper's survey targets the comments of those active on the internet. This paper cannot determine the age of the commenters through the internet and, therefore, cannot accurately determine this paper's research population. Additionally, this paper did not consider young people who do not like to write comments or those who do not use this software or do not go online. As a result, this paper's sample could be more extensive and represent the true population of young people. The research data may have significant biases. 4) Many variables in research objectives: Through the preliminary classification and processing of the data, this paper found that many factors cause anxiety in young people, including teenage depression, COVID-19 lockdowns, psychological anxiety, sleep, and college students' pandemic anxiety, among others. In this study, this paper did not consider these variables and their impact on college students' attention to health.

**Future studies:** 1) Using a specific research methodology, list the main factors that cause anxiety in contemporary young people and correlate these factors with the pandemic to study the association between the pandemic and anxiety. Consider additional factors for a more comprehensive data analysis and obtain more reliable results. 2) Refine high-attention topics based on the information

already collected and collect more precise data through user surveys, such as designing relevant interview questions or questionnaires. For example, this paper will select specific pandemic and health topics and use some of the data this paper has obtained as topics for discussion or questions. This paper will randomly interview college students on campus, and data collection will include the interviewee's body language, facial expressions, emotions, and specific answers. The questions will include both qualitative and quantitative questions. For example, quantitative questions will set a scale of 1-5 and require the interviewee to describe the degree of their knowledge or interest in a particular topic, such as their understanding of health, whether they are currently engaged in healthy practices and the impact of the pandemic on them. Qualitative questions will be open-ended, allowing for more discussion about the interviewee's thoughts on the topic. 3) In this paper's research on social media, this paper also found the neural network model as a data analysis method. This model could better explain this paper's data and conclusion.

## 5. Conclusion

This paper compiles and examines comments from various online platforms marked with appropriate tags. It explores the mental state of young individuals and their focus on maintaining good health before and after the termination of measures taken to prevent and control the spread of the pandemic. The paper initially analyzed the data and then manually labeled it to prepare it for training a neural network to classify text. After collecting and analyzing data, this paper found on social media that young people experience anxiety about the pandemic becoming normalized. This anxiety towards the pandemic is reflected on social media as skepticism towards the disease, nervousness, depression tendencies, sleep disorders, obsessive-compulsive, and physical symptoms. This matches this paper's hypothesis. On social media, there is indeed a high level of attention towards traditional Chinese medicine and health preservation among young people, reflecting the phenomenon of young people shifting their focus to health preservation after the pandemic.

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