A Study on the Impact of "Lying Flat" on Mental Health and Well-Being: A Panel Data Analysis of Weibo (2010-2021)

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Abstract

With the widespread dissemination of the "lying flat" phenomenon in society, its impact on individual mental health and well-being has emerged as a significant research topic. This study employs dictionary analysis and panel data modeling methodologies, utilizing Sina Weibo data from 31 provinces, municipalities, and autonomous regions in China spanning 2010–2021, to construct a lying-flat lexicon and quantitatively analyze the degree of lying flat, thereby investigating its effects on suicide risk, life satisfaction, and psychological well-being. The findings demonstrate that the degree of lying flat across China' s 31 provinces, municipalities, and autonomous regions from 2010 to 2021 exhibited an overall upward trend, negatively predicting life satisfaction and psychological well-being while positively predicting multiple sub-dimensions of suicide risk. This indicates that lying flat is not a positive coping strategy; rather, it undermines individual life satisfaction and psychological well-being and elevates suicide risk. This study provides novel perspectives and empirical evidence for understanding the lying-flat phenomenon and its psychological impacts, and can assist relevant departments and various sectors of society in timely understanding and addressing the potential social impacts of the "lying flat" phenomenon.

Full Text

The Impact of "Lying Flat" on Psychological Health and Well-being: A Study Based on Weibo Panel Data from 2010 to 2021

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Abstract

With the widespread emergence of the "lying flat" phenomenon in society, its impact on individual psychological health and well-being has become an important research topic. This study employs dictionary analysis and panel data modeling methods, utilizing Weibo data from 31 provinces, municipalities, and autonomous regions in China between 2010 and 2021. A "lying flat" dictionary was constructed to quantify the degree of lying flat, and the study explores its effects on suicide risk, life satisfaction, and psychological well-being. The results show that the overall level of lying flat in China's 31 provinces, municipalities, and autonomous regions has exhibited an upward trend from 2010 to 2021. Furthermore, lying flat negatively predicts life satisfaction and psychological well-being, while positively predicting several sub-dimensions of suicide risk. This suggests that lying flat is not a positive coping mechanism; it undermines individual life satisfaction and psychological well-being, and increases suicide risk. This study provides new perspectives and empirical evidence for understanding the "lying flat" phenomenon and its psychological impacts, helping relevant departments and society at large to timely recognize and address the potential social consequences of the "lying flat" phenomenon.

Keywords: lying flat dictionary; psychological health; well-being; social media data; panel data analysis

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In 2021, "lying flat" became a buzzword and was selected as one of the "Top Ten Phrases of the Year" by *Yaowen Jiaozi* (Ou, 2024). The term can be traced back to fan culture in 2016, where "lying flat and taking the mockery" meant accepting ridicule without resistance (Xiong, 2022; Ou, 2024). In early 2021, a post titled "Lying Flat Is Justice" appeared on Zhihu, where the author articulated a philosophy of stepping back from a world filled with competition and busyness, declaring "lying flat" a movement for the wise. The post used "lying flat" to describe a state of not working, not consuming, and not socializing, endowing the term with specific sociological significance (Xiong, 2022; Ou, 2024). Subsequently, the term spread rapidly through online media, becoming a vehicle for memes and catchphrases, and was enthusiastically embraced by Chinese youth. Consequently, "lying flat" emerged as an alternative "philosophy of life," sparking online revelry among young people and becoming one of the most prominent labels of youth subculture.

Wang (2021) defined "lying flat" as a survival proposition characterized primarily by "low desire, low demand, low consumption, and minimal social connection." Lying flat appears to be a new form of cynicism, with people wishing to enjoy the sun like the ancient Greek philosopher Diogenes in his barrel. Notably, the lying flat phenomenon exists worldwide, exemplified by NEET (Not in Education, Employment, or Training) in the UK (Lindblad et al., 2024), the "Boomerang Kids" phenomenon in the US (Abetz & Romo, 2022), and "hikikomori" in Japan (Furlong, 2008; Kato et al., 2019). Researchers consider "lying flat," along with

terms like "sang culture" and "Buddhist-style culture," as subcultural phenomena that essentially represent a modern lifestyle manifestation of "cynicism" (Wang, 2021).

Previous research on "lying flat" has primarily presented two perspectives. On one hand, "lying flat" has been interpreted as a form of passive resistance to social competition (Sun et al., 2021), reflecting young people' s spiritual anxiety when facing social pressure and a sense of powerlessness toward reality (Xu, 2021). Its inherent "defeatist aura" spreads negative emotions, erodes the will to strive (Ling & Li, 2022), and leads to the nihilization of individual values (Song & Bie, 2022), prompting criticism from most official Chinese media. On the other hand, some researchers argue that "lying flat" has a temporary regulatory effect, capable of alleviating physical and mental pressure (Hou, 2021; Wei et al., 2021). Some even suggest that the positive significance of cultural phenomena like "sang culture" and "lying flat" may be greater (Cao, 2020). Although researchers' attitudes toward lying flat are polarized, both view it as a behavior that reflects young people' s attitudes and values and is related to their lifestyle. Therefore, "lying flat" is a specific cultural phenomenon emerging against the backdrop of intensified social competition and rapid social development, representing a typical modernity issue (Song & Bie, 2022).

What then causes individuals to adopt lying flat behavior? Self-Determination Theory posits that social environments enhance individuals' intrinsic motivation and promote the internalization of extrinsic motivation by satisfying three basic psychological needs (BPN)—autonomy, competence, and relatedness—thereby driving behavior; conversely, when social environments fail to meet individuals' BPN, intrinsic motivation is weakened (Deci & Ryan, 2000; Ryan & Deci, 2000). Faced with immense social pressure, some young people' s BPN remain unfulfilled, significantly reducing their achievement motivation and leading them to choose "lying flat" to alleviate anxiety and stress (Zhang, 2022; Zhu & Guan, 2023).

But is "lying flat" truly beneficial for individual psychological health and well-being? Research indicates that lying flat leads to increased negative emotions and tendencies toward low self-esteem, easily triggering long-term mental lethargy and "empty heart disease," weakening self-efficacy, and accompanied by strong feelings of loneliness, lack of psychological resilience, and inability to cope with setbacks. Negative emotions such as anxiety, depression, and loneliness are closely related to psychological health problems (Chang et al., 2019; Matsubara et al., 2021), and these factors directly or indirectly affect individual suicidal behavior. Song and Bie (2022) also argue that "lying flat" is not an individual' s optimal choice; it is not conducive to achieving self-worth, and individuals find it difficult to feel safe, happy, and fulfilled, ultimately only making quality of life increasingly worse. Previous studies have shown that individuals' emotional experiences and expressions are closely related to their life satisfaction (Zheng et al., 2001; Zhang et al., 2012), that sense of purpose and meaning can make individuals happier (Deci & Ryan, 2000; Ryan & Deci, 2000; Hsee et al., 2010),

and that long-term inactivity increases negative thinking and makes people feel more unhappy (Adelle & Christopher, 2019; Finkielsztein, 2023). Therefore, we can infer that "lying flat" causes individuals to lack purpose and achievement, making them prone to deep-seated loneliness and despair, thereby reducing subjective well-being and life satisfaction and affecting individual suicidal behavior.

Existing research on "lying flat" has mainly focused on exploring its historical roots and causes, as well as ways to change the negative status quo of "lying flat" (Chen, 2021; Zhang & Ren, 2024; Teng, 2024), lacking an operational definition of "lying flat" behavior from a psychological perspective and analysis of its consequences. Once the "lying flat" phenomenon spreads negatively, it will affect the spiritual state of social groups and trigger social problems such as "youth crisis" and "fertility crisis" (Shen, 2022). Moreover, traditional survey research is known for being resource-intensive, which limits the number of participants and reduces the representativeness of research findings (Li et al., 2021). Existing research on effective measurement tools for assessing the degree of "lying flat" still focuses on scale development (e.g., Li et al., 2022; Lu et al., 2023), but sampling bias often leads to biased research conclusions (McLafferty, 2016). Therefore, to draw more reliable and robust conclusions, it is necessary to investigate the true impact of lying flat on psychological health and well-being in larger populations.

In recent years, the digital revolution has led to increased availability of large-scale language data (Boyd & Pennebaker, 2017), giving rise to computer-based text analysis programs that have become standardized methods in psychological research (Boyd et al., 2022; Tausczik & Pennebaker, 2010). By analyzing massive amounts of publicly expressed text from users, researchers can avoid the problems of questionnaire inefficiency, high cost, subjective cognitive bias, and social desirability effects, greatly improving research efficiency, sample size, and ecological validity. The core of this research tool lies in scanning text and counting word frequencies from predefined categories. Researchers can develop dictionary analysis programs by defining dictionary categories derived from psychological theories and carefully incorporating word lists; the relative frequency of dictionary categories typically reflects an individual' s relative attention to that domain.

Sina Weibo is an information-sharing platform that provides entertainment and lifestyle services to the public (Zhen et al., 2017). Since its establishment in 2009, Weibo' s user base has grown rapidly. As of the fourth quarter of 2024, Weibo's monthly active users reached 587 million, and daily active users reached 257 million, making it China' s most influential social platform. Weibo' s active users cover all age groups and provinces in China, providing highly diverse, geographically extensive, and representative panel data that contains rich sources of information and variation. This information is often used to investigate the psychological causes of groups and track dynamic changes in public psychological health (Han et al., 2021; Li et al., 2021). Based on the panel data provided by Weibo, researchers can simultaneously consider inter-individual and temporal variations, enabling effective and reliable parameter estimation (Chen, 2014).

With its high timeliness and ecological validity, Weibo can provide real-time and authentic user data, while dictionary-based text analysis tools can mine users' underlying psychological states from natural language. Simultaneously, panel data analysis can more accurately estimate causal relationships. This combined approach effectively compensates for the shortcomings of traditional research methods, providing a more comprehensive, dynamic, and in-depth perspective for understanding social phenomena. Therefore, to fully leverage the advantages of social media corpora, this study conducted two sub-studies combining panel data models with large-scale Weibo data to explore the impact of lying flat on psychological health (suicide risk) and well-being (life satisfaction, psychological well-being). Specifically, in Study 1, we constructed a lying flat dictionary to measure the degree of lying flat among Weibo users. In Study 2, based on Weibo data, we used panel data modeling techniques to examine the effects of lying flat on suicide risk, life satisfaction, and psychological well-being.

Study 1: Development and Validation of the Lying Flat Dictionary

In Study 1, we constructed a lying flat dictionary and conducted validity testing for subsequent measurement of lying flat degree among Weibo users.

2.1.1 Dictionary Construction

We constructed the lying flat dictionary through four stages: concept definition, basic word list selection, word class suitability evaluation, and large model expansion.

Concept Definition. The original meaning of "lying flat" refers to the physical act of lying down, with no other extended meanings in Chinese. After the post "Lying Flat Is Justice" was published on Zhihu, the term "lying flat" was redefined. Researchers have defined the concept of "lying flat" from perspectives of life state, emotional attitude, and behavior. Wang (2021) defined "lying flat" as a survival proposition characterized primarily by "low desire, low demand, low consumption, and minimal social connection." Cheng (2021) defined it as a global modernity experience of being tired of competition and giving up pursuit. Zhu (2021) considered "lying flat" as a mindset of willingly accepting a lower position, implying acknowledgment of failure and abandonment of prevailing social rules. Some researchers have also defined "lying flat" positively, viewing it as a "liberating repression" of desire, a way of thinking about and pursuing multiple lifestyles, and a method for relieving mental pressure. Through research and interpretation of concepts and evaluations related to "lying flat," we summarized and extracted its connotations and extensions, ultimately defining "lying flat" as follows: Lying flat refers to a life attitude of passively coping with social pressure and accepting the status quo by abandoning competition and pursuing low desire.

Basic Word List Selection. Following standard dictionary construction meth-

ods (Boyd et al., 2022), we selected basic keywords related to lying flat from authoritative questionnaires and literature. We used the commonly employed Youth "Lying Flat" Questionnaire (Li et al., 2022; Lu et al., 2023) and combined it with relevant research on lying flat to obtain 87 basic keywords related to lying flat as our foundational word list.

Word Class Suitability Evaluation. We recruited and trained three psychology graduate students to evaluate the suitability of each keyword in the basic word list. Specifically, for each keyword in the basic word list, each graduate student independently judged whether the keyword directly reflected the meaning of "lying flat" based on the concept definition. If yes, they gave a "pass" rating; otherwise, they gave a "fail" rating. Each keyword received three judgments, and if two or more judgments were consistent, the keyword was retained or deleted, ultimately yielding 34 keywords.

Large Model Expansion. To avoid omissions in manual word selection, we used the Tencent AI Lab large model to expand the current word list. Tencent AI Lab' s publicly available Chinese word vector data contains over 8 million Chinese vocabulary items, with each word corresponding to a 200-dimensional vector. Compared to existing Chinese word vector data, Tencent AI Lab' s Chinese word vectors focus on improving coverage, freshness, and accuracy, significantly enhancing quality and usability compared to existing Chinese word vectors (Song et al., 2018). We used this large model to expand the existing word list with synonyms, removed duplicates, and then had the three psychology graduate students from the previous stage evaluate word class suitability again. The final lying flat dictionary included 27 keywords.

2.1.2 Validity Testing

The validity of a dictionary has always been a crucial issue. By definition, the lying flat dictionary is valid, but we still need to answer one question: When using the words in the lying flat dictionary, does it mean that people are indeed expressing meaning in the way defined by lying flat? This question involves how individual psychological processes are reflected in language use and the validity of word classes as feature sets (Zhao et al., 2016). To meet the needs of the lying flat dictionary for processing online text, we conducted validity testing by examining the consistency between lying flat word frequency scores and manual ratings to investigate whether word frequency truly reflects the public' s degree of lying flat.

Text Selection. We randomly selected 41 texts from Sina Weibo and Zhihu, covering authors' experiences and reflections.

Manual Rating. We recruited and trained three psychology graduate students and asked them to evaluate the degree of lying flat expressed in each text using a 5-point Likert scale (1 = strongly disagree, 3 = neutral, 5 = strongly agree) based on the operational definition of lying flat mentioned above. Higher scores indicated a higher degree of lying flat expressed in the text. To ensure rating

validity, raters were instructed to evaluate the meaning of the entire text content rather than detecting specific words.

Dictionary Scoring. Using the word-count scoring method, we directly calculated the percentage score of lying flat words in the text using the lying flat dictionary, i.e., the lying flat word frequency score.

Finally, we conducted Pearson correlation analysis between lying flat word frequency scores and manual ratings. The correlation coefficient measured whether the dictionary could truly reflect the degree of lying flat expressed in users' texts.

2.1.3 Trends in Lying Flat

Based on the Weibo text database, we calculated the degree of lying flat in 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021 using the lying flat dictionary. The Weibo text database contains posts from active Weibo users in 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021. First, we used the "TextMind" system developed by the Computational Cyberpsychology Laboratory of the Institute of Psychology, Chinese Academy of Sciences, to segment Weibo posts and calculate word frequencies. This system can split text into individual words with linguistic features according to Chinese grammatical rules. Next, we calculated the word frequency related to lying flat in each region using the lying flat dictionary, expressed as the number of words in the dictionary divided by the total number of words in the posts. Word frequency described the degree of lying flat in different regions during different periods. After this processing, we obtained lying flat degree data for 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021.

2.2 Results

We calculated the inter-rater reliability of the three raters. Results showed that the three raters had high consistency in their ratings of lying flat degree for the 41 Weibo texts (Kendall' s $W = 0.544$, $p = .007$). Pearson correlation analysis between manual ratings and dictionary scores revealed a significant positive correlation ($r = 0.414$, $p = .007$), meeting general criteria for moderate correlation (Zhao et al., 2016), indicating that the dictionary has certain validity.

[Figure 1: see original paper] shows the trend of lying flat in 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021. The black solid line represents the actual change in "lying flat," while the red dashed line represents the trend line. Results show that the degree of lying flat in various regions has generally shown an upward trend. In the early period (2010-2014), lying flat remained relatively stable with small fluctuations and a low overall level. However, since 2015, the amplitude of fluctuations has gradually increased, and the trend line also shows that people' s attention to the "lying flat" phenomenon has continued to rise, reaching its peak between 2020 and 2021.

Study 2: The Impact of Lying Flat on Mental Health and Well-being

Study 2 utilized the lying flat dictionary constructed in Study 1 to examine the impact of lying flat degree on mental health (measured by suicide risk) and well-being (measured by life satisfaction and psychological well-being) through the Weibo database using panel data modeling techniques.

3.1.1 Independent Variable

We used the lying flat degree calculated for 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021 in Study 1 as the independent variable.

3.1.2 Dependent Variables

Suicide has been recognized as one of the world' s most serious public health problems (WHO, 2014) and is the leading cause of death among Chinese people aged 15-34 (Zou et al., 2020). Studying the influencing factors of suicide risk helps with early detection and intervention. The words people use provide important psychological clues about their mental health status (Rude et al., 2004; Jarrold et al., 2011). Many studies have found a relationship between suicide risk and language patterns in social media posts, suggesting that linguistic features obtained from social media data can be used to identify suicide risk indicators. Therefore, this study measured suicide risk data for 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021 using a suicide dictionary constructed based on Weibo corpora (Lv et al., 2015). The validity of this dictionary has been confirmed, and it contains 13 sub-dimensions: (1) A Suicidal ideation; (2) B Self-harm; (3) C1 Psychache; (4) C2 Mental illness; (5) C3 Hopelessness; (6) C4 Somatic complaints; (7) C5 Self-regulation; (8) C6 Personality; (9) C7 Stress; (10) C8 Trauma and hurt; (11) C9 Shame and guilt; (12) C10 Anger and hostility; (13) D Talking about people around.

Well-being was initially considered as positive emotions and experiences formed along with improvements in individual quality of life. It was first regarded as an individual' s evaluation of their life satisfaction (Diener, 1984), i.e., subjective well-being, comprising two evaluation modes: affective and cognitive (Diener et al., 1985). Influenced by positive psychology, Ryff (1998) argued that well-being should also include the realization of individual potential, i.e., psychological well-being. Keyes (2007) pointed out that well-being is an integration of subjective well-being, psychological well-being, and social well-being. This study mainly explores the impact of lying flat on subjective well-being and psychological well-being.

Life satisfaction refers to an individual' s subjective evaluation of their quality of life based on self-set standards (Zou, 2022). As the core cognitive component of subjective well-being, life satisfaction is often regarded as an effective indicator of subjective well-being (Diener, 1984) and has been shown to significantly

impact many aspects of individual mental health (Zhou & Zhang, 2007; Zou, 2022). As an important cognitive indicator, the most commonly used method for measuring life satisfaction is questionnaires, such as the Satisfaction with Life Scale (SWLS) developed by Diener et al. (1984). Although these scales have shown high validity in many studies (Diener et al., 1999; Vassar, 2008), they are inefficient and expensive for large-scale surveys. Therefore, this study adopted the life satisfaction machine learning prediction model constructed by Song and Zhao (2023) to obtain life satisfaction data for 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021.

Ryff (1998), who first proposed the concept of psychological well-being, considered it a perfect experience of achieving maximum life meaning after individuals strive to realize their strengths and potential—a self-actualizing happiness. Compared to subjective well-being, it emphasizes individual mental health, manifestation of potential, and self-actualization, and advocates evaluating human happiness using objective standards. Similarly, to compensate for the shortcomings of traditional research methods and fully utilize social media platform corpora, this study adopted the well-being machine learning prediction model constructed by Han et al. (2024) to obtain psychological well-being data for 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021.

3.1.3 Control Variables

Research shows that the regional Consumer Price Index (CPI) reflects local price levels and directly affects individuals' economic pressure and life satisfaction (Di Tella et al., 2001). High prices may weaken residents' purchasing power, increase cost-of-living pressure, and negatively impact well-being (Kahneman & Deaton, 2010). In areas with higher prices, individuals may be more inclined to choose low-cost lifestyles to cope with economic pressure, ultimately choosing to lie flat. The unemployment rate is an important indicator of regional economic vitality and social security level, closely related to individual mental health and well-being (Di Tella et al., 2001). High unemployment may not only directly increase individuals' economic insecurity and social exclusion but also indirectly affect the prevalence of the lying flat phenomenon. Additionally, population size may reflect regional social environment and resource distribution characteristics, thereby affecting well-being (Dang et al., 2020) and suicide risk (McCall & Tittle, 2007). Larger permanent populations may lead to intensified resource competition and weakened social support networks, negatively impacting individual mental states and well-being. Therefore, this study used regional CPI, urban registered unemployment rate, and year-end permanent population (in ten thousands) from 2010-2021 as control variables to exclude confounding effects from external factors and obtain more accurate results.

3.2 Data Analysis

This study employed a two-way fixed effects model to examine the relationships between lying flat and suicide risk, life satisfaction, and psychological well-being.

The model formula is as follows:

$$Y_{it} = \beta_{1X_{it}} + \lambda_t + \alpha_i + \varepsilon_{it}$$

Where Y_{it} represents the dependent variable, i.e., suicide risk/life satisfaction/psychological well-being of region i at time t; X_{it} represents independent and control variables, including lying flat degree, regional Consumer Price Index (CPI), urban registered unemployment rate, and year-end permanent population (in ten thousands) of region i at time t; λ_t represents time fixed effects; α_i represents region fixed effects; and ε_{it} represents the error term, which is independently and identically distributed.

To control for unexplainable regional differences between different regions, this study used Stata 18.0 software to analyze annual provincial panel data from 31 provincial-level administrative regions from 2010-2021. Since the cross-sectional dimension (N = 31) of the panel data used is smaller than the time dimension (T = 12), a short panel data model was adopted.

3.3.1 Descriptive Statistics

shows the cross-sectional correlations between variables. Results show that lying flat degree has significant positive correlations with both life satisfaction (r = 0.31, p < .001) and psychological well-being (r = 0.52, p < .001). For suicide risk, lying flat has significant negative correlations with 12 sub-dimensions except for "talking about people around."

3.3.2 Two-Way Fixed Effects Model Analysis

This study established panel data with provincial-level administrative regions as individual variables and years as time variables. Balance verification confirmed that the panel is a strongly balanced panel, suitable for further analysis. Regression models include random effects and fixed effects models. According to the Hausman test results (p < .001), the null hypothesis was rejected, and the fixed effects model was ultimately selected.

Using regional CPI, urban registered unemployment rate, and year-end permanent population (in ten thousands) as control variables and lying flat degree as the predictor variable, we established models with the 13 sub-dimensions of suicide risk, life satisfaction, and psychological well-being as outcome variables. Results are shown in .

After controlling for regional CPI, urban registered unemployment rate, and year-end permanent population (in ten thousands), lying flat degree had significant negative predictive effects on both life satisfaction (β = -0.86, p < .001) and psychological well-being (β = -0.54, p < .001). Increases in lying flat significantly reduced life satisfaction and psychological well-being.

For the 13 sub-dimensions of suicide risk, lying flat degree had significant positive predictive effects on suicidal ideation (β = 34.24, p < .001), psychache (β = 22.14, p < .001), mental illness (β = 0.37, p < .01), hopelessness (β = 9.76, p < .001), somatic complaints (β = 2.43, p < .001), self-regulation (β = 2.93, p < .001), and trauma and hurt (β = 13.29, p < .001), but had a significant negative predictive effect on stress (β = -2.25, p < .01).

4.1 The Impact of Lying Flat on Mental Health and Well-being

By constructing a lying flat dictionary and conducting quantitative analysis of Weibo data from 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021, this study reveals the impact of lying flat on mental health (suicide risk) and well-being (life satisfaction, psychological well-being).

In Study 1, we constructed the lying flat dictionary through four stages: concept definition, basic word list selection, word class suitability evaluation, and large model expansion, resulting in a dictionary containing 27 keywords. Through correlation analysis between dictionary scores and manual ratings, we demonstrated the validity of this lying flat dictionary. Simultaneously, based on Weibo text data, we used this dictionary to analyze the changing trend of "lying flat" in 31 provinces, municipalities, and autonomous regions in China from 2010 to 2021. We found that the linguistic representation of "lying flat" behavior showed clear temporal changes. During the 2010-2021 period, the trend of "lying flat" phenomenon in China' s 31 provinces, municipalities, and autonomous regions showed a clear upward trajectory, indicating that public attention and discussion of this social phenomenon gradually increased. Particularly after 2015, the degree of lying flat increased significantly, reflecting transformations in the social-economic environment and people' s lifestyles. Against the backdrop of slowing economic growth and increasing workplace competition (Development Research Center of the State Council "Medium and Long-term Growth" Research Group, 2017), some groups gradually developed a "lying flat" mentality and expressed their personal choices and demands through various channels. This period was also a stage of rapid development for the internet and social media (Sun, 2015), and the growth of online discourse power facilitated the spread and attention of the "lying flat" phenomenon. Second, the outbreak of COVID-19 in 2020 caused major shocks to the socio-economic order, bringing rising unemployment and lifestyle changes, with accompanying social mood fluctuations and psychological pressure becoming important factors in the diffusion of the "lying flat" mentality (Wei et al., 2021). From the trend line, the overall upward trend of "lying flat" is obvious, indicating that this phenomenon is not merely short-term social mood fluctuation but a long-term behavioral manifestation that has gradually attracted attention along with economic and social transformation. Additionally, large fluctuations in lying flat across different regions indicate significant regional variations in lying flat degree during the same period.

In Study 2, based on the Weibo text database, we used the lying flat dictionary and panel data modeling techniques to examine the impact of lying flat on mental health (measured by suicide risk) and well-being (measured by life satisfaction and psychological well-being). Correlation analysis results showed that lying flat had significant positive correlations with life satisfaction and psychological well-being, and significant negative correlations with multiple subdimensions of suicide risk—contrary to our expectations. Typically, lying flat is regarded as a negative way of coping with social pressure, and researchers generally believe it reduces individual well-being (Lu et al., 2023; Meng, 2024) and increases suicide risk. However, from the correlation analysis results, this may reflect that in the initial stage when lying flat behavior emerges, some individuals may incorporate certain elements of self-comfort and self-protection when choosing to lie flat (Cao, 2020). When facing tremendous social competition and life pressure, they may temporarily alleviate anxiety and tension through lying flat, thereby obtaining brief satisfaction and well-being to some extent and reducing suicide risk.

However, this correlation does not mean that lying flat is a positive coping method. Two-way fixed effects model analysis results showed that after controlling for regional Consumer Price Index (CPI), urban registered unemployment rate, and year-end permanent population variables, lying flat degree showed significant negative predictive effects on both life satisfaction and psychological well-being. This indicates that lying flat behavior undermines individual life satisfaction and psychological well-being to some extent, consistent with previous research results (Lu et al., 2023; Meng, 2024). Lying flat often means that individuals choose to abandon competition, reduce desires, and no longer actively pursue personal goals and various possibilities in life. Life satisfaction largely depends on the degree to which individuals pursue and achieve life goals, as well as positive experiences in various aspects of life (Zou, 2022). Lying flat behavior reduces opportunities for individuals to participate in social activities, pursue personal interests, and establish deep social relationships with others, thereby preventing them from obtaining corresponding feelings of achievement, satisfaction, and belonging, leading to reduced life satisfaction. Psychological well-being emphasizes the realization of individual potential and self-actualization (Ryff, 1998), which lying flat behavior precisely hinders. In a lying flat state, individuals no longer actively explore their potential or challenge themselves, unable to experience the happiness of achieving self-worth through effort. Moreover, lying flat may cause individuals to fall into a negative psychological cycle, where long-term inactivity and lack of goals lead to self-doubt and self-negation, further weakening psychological well-being.

Similarly, the positive predictive effect of lying flat on multiple suicide risk subdimensions also indicates that lying flat is more likely a negative coping method. Lying flat more easily generates suicidal ideation, possibly because individuals in a lying flat state who remain in a negative, goalless living condition for extended periods easily lose confidence and hope in life, subsequently giving rise to thoughts of ending their lives. The increase in psychache and mental illness may

be related to the inability to effectively release and relieve psychological pressure caused by lying flat. Although lying flat negatively predicts stress, appearing as a way to avoid pressure, it does not actually solve the problem. Instead, it may cause individuals to accumulate more negative emotions and psychological distress deep within (Lu et al., 2023), and long-term accumulation can easily trigger psychache and mental illness. The rise in hopelessness is also closely connected to lying flat behavior. When individuals choose to lie flat, giving up planning and effort for the future, they gradually fall into a state of hopelessness about life, feeling that the future is dark with no possibility of change, thus generating hopeless emotions. The increase in somatic complaints may be because lying flat behavior reduces individuals' physical activity, keeping them in a static state for long periods, leading to declining physical function and various somatic discomfort symptoms. The weakening of self-regulation ability may stem from individuals no longer needing to face various life challenges and pressures in a lying flat state, lacking opportunities to exercise self-regulation ability. When encountering problems, they cannot effectively cope and easily generate negative emotions. The positive predictive relationship between lying flat and the trauma and hurt sub-dimension may suggest that lying flat behavior reflects, to some extent, individuals' deep avoidance of traumatic experiences from past events. This avoidance cannot truly heal trauma but may instead cause the impact of trauma to continuously ferment in the subconscious, affecting individual mental health.

In summary, our research results provide new evidence for the impact of lying flat on mental health and well-being. "Lying flat" is not a beneficial choice for individual mental health and well-being. It leads to increased negative emotions, reduced self-esteem, weakened self-efficacy, and triggers long-term mental lethargy, loneliness, and lack of ability to cope with setbacks, ultimately reducing individual life satisfaction and psychological well-being and affecting individual suicidal behavior. This indicates that the "lying flat" phenomenon is not merely an individual behavioral choice but the result of interaction between social environment and individual psychology. Its negative impact on individual mental health cannot be ignored, and multi-faceted approaches including social support and psychological intervention are needed to help individuals escape the "lying flat" predicament and regain a positive and upward life attitude.

4.2 Study Strengths and Limitations

This study enriches understanding of the "lying flat" phenomenon and its psychological impacts, providing new perspectives and methods for subsequent related research. We not only focused on the "lying flat" phenomenon itself but also deeply explored its impact on individual mental health and well-being, covering multiple dimensions including suicide risk, life satisfaction, and psychological well-being, providing rich empirical evidence for comprehensively understanding the consequences of the "lying flat" phenomenon. Additionally, through analysis of the changing trend of lying flat degree in 31 provinces, municipal-

ities, and autonomous regions in China from 2010 to 2021, we revealed the evolution of the "lying flat" phenomenon along the temporal dimension, providing a macro perspective for grasping its development trend. Our research has important implications for guiding individuals to establish positive and healthy life attitudes and promoting social mental health construction, while helping relevant departments and society at large to timely understand and address the potential social impacts of the "lying flat" phenomenon.

Furthermore, this study innovatively adopted methods such as dictionary analysis and panel data analysis, compensating for the shortcomings of traditional research methods and providing powerful tools and reliable data support for in-depth exploration of the impact of lying flat on mental health and well-being. In constructing the lying flat dictionary, we were rigorous and meticulous, ensuring the scientificity and effectiveness of the dictionary through four stages: concept definition, basic word list selection, word class suitability evaluation, and large model expansion, providing a reliable tool for subsequent quantitative measurement of lying flat degree among Weibo users and making quantitative research on this abstract concept possible. Simultaneously, using data from Weibo, a social platform with high diversity, broad geographical coverage, and representativeness, we avoided problems of resource intensity, limited participant numbers, and subjective cognitive bias in traditional survey research, greatly improving research efficiency, sample size, and ecological validity. This study used a two-way fixed effects model for data analysis, which can effectively control for unexplainable regional differences between different regions and time trends, thereby more accurately estimating causal relationships between lying flat degree and suicide risk, life satisfaction, and psychological well-being, enhancing the reliability and robustness of research results.

Despite these strengths, this study has several limitations. On one hand, our data source has certain restrictions. Although Weibo data has broad representativeness and rich information, the characteristics (especially age applicability) and behavioral patterns of its user group may differ from individuals in other social platforms or non-online environments, which somewhat limits the generalizability of our findings. On the other hand, our measurement tools have defects. Although dictionary analysis tools avoid some limitations of traditional psychological measurement methods to some extent, these text analysis tools based on the principle of "words represent attention" have their own flaws—they ignore contextual meaning and are not designed to accommodate the full complexity and functionality of language behavior (Boyd & Schwartz, 2021). Therefore, we still need to consider how to use and improve these tools to better serve online data mining and psycholinguistic research.

This study constructed a lying flat dictionary and used panel data modeling techniques to explore the impact of lying flat on mental health and well-being. Results show that the degree of lying flat in 31 provinces, municipalities, and autonomous regions in China increased overall from 2010 to 2021, indicating that under changes in the social-economic environment and lifestyle, some groups

have begun to adopt lying flat ideology. Lying flat is positively correlated with life satisfaction and psychological well-being and negatively correlated with multiple sub-dimensions of suicide risk, but further analysis reveals that lying flat has significant negative predictive effects on life satisfaction and psychological well-being and significant positive predictive effects on multiple suicide risk sub-dimensions. This indicates that lying flat is more likely a negative coping method that undermines individual life satisfaction and psychological well-being and increases suicide risk. It is the result of interaction between social environment and individual psychology, and its negative impact on individual mental health cannot be ignored. Multi-faceted approaches including social support and psychological intervention are needed to help individuals escape the "lying flat" predicament.

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Note: Figure translations are in progress. See original paper for figures.