Positive Psychology Integration Intervention Strategies for the Psychological Phenomenon of "Laying Flat" in College Students — An Exploration and Practice Based on Artificial Intelligence Algorithms

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Abstract

In response to the increasing pressure of social competition, a psychological phenomenon termed "lying flat" has gained prominence among college students, reflecting a passive attitude characterized by disengagement, avoidance, and a lack of proactive coping mechanisms in the face of challenges. This study undertakes a comprehensive examination of the "lying flat" phenomenon, encompassing its definition, sociocultural origins, and developmental trends. To address this growing concern, an integrated intervention strategy rooted in positive psychology is proposed, focusing on enhancing resilience, fostering positive emotions, and cultivating self-efficacy. The strategy leverages artificial intelligence (AI) algorithms to innovate the intervention framework, including optimizing data collection, refining intervention personalization, and improving predictive capabilities. An empirical study, employing a mixed-method design, validates the effectiveness of this approach, revealing substantial improvements in psychological resilience, emotional positivity, and behavioural engagement among participants. The findings underscore the dual benefits of combining positive psychology and AI in mental health interventions: not only mitigating the psychological impact of the "lying flat" phenomenon but also paving the way for future applications of AI in the psychological support ecosystem. This research contributes to understanding the mechanisms of disengagement behaviours in young adults while offering a replicable, scalable intervention model for psychological resilience and societal integration in high-pressure contexts.

Keywords: lying flat psychological phenomenon, positive psychology, artificial intelligence algorithms, psychological interventions, empirical research, strategy optimisation

1. Introduction

In the current social environment, college students, as an important part of modern young people, are facing unprecedented social pressure and professional competition. A psychological phenomenon called "lying down" has gradually emerged in the public eye, which is not only limited to a small group of people, but also indicates the common mentality and behavioural choices of some young people under heavy pressure (LI Jing, CHEN Xinyue, ZHAO Zheyu, HUANG Xueming & JIANG Yihan, 2021). This self-protection strategy contrasts sharply with the traditional social expectation of hard work, and has attracted the attention of sociologists and psychologists (Ma Cuiting, 2020). In order to deeply understand this psychological phenomenon, this study is dedicated to exploring the psychological mechanism behind "lying flat" and its potential impact on the college student population.

This study first defines the conceptual framework of the psychological phenomenon of "lying down", and summarises it as a negative way of coping with stress, so as to choose temporary psychological escape and recuperation (Zhuo Pengtao, 2020). Through reviewing a large amount of related literature, we clarify the social and cultural background of "lying flat" as a coping mechanism, and analyse its manifestations and changes in different environments. On this basis, the study analyses the prevalence and causes of the phenomenon of "lying down" at a deeper level.

This study adopts the theoretical perspective of positive psychology to analyse the psychological needs behind the mindset of the "lying flat" phenomenon and to propose integrated intervention strategies. Within the framework of positive psychology, it explores how to reduce or reverse the "lying flat" mindset by improving individuals' intrinsic psychological resilience and positive emotions. Further, this study scientifically optimises the intervention strategies through artificial intelligence algorithms to improve the efficiency and effectiveness of the intervention, so as to provide more accurate and effective psychological counselling services for university students.

In order to verify the effectiveness of the proposed integrated intervention strategy, this study constructed a rigorous empirical research design. Through sample selection and data collection from a sample group of college students, the collected data were deeply mined and analysed using advanced data processing techniques and artificial intelligence analysis tools, and the validity and reliability analysis methods were comprehensively applied to ensure the scientific validity and credibility of the research results.

After a systematic experimental design and implementation, the results of this study show that the proposed integrated intervention strategy can significantly improve the psychological resilience of college students in the face of life and learning difficulties, enhance their positive emotional experience, and positively guide their future behavioural choices. The experimental results not only provide new perspectives on understanding and solving the psychological phenomenon of "lying flat", but also open the way for the emerging field of combining mental health interventions with artificial intelligence algorithms.

2. Overview of the Psychological Phenomenon of Lying Flat

2.1 Definitions and Background

In the higher education system, college students, as the representatives of the main force of the future society, are concerned about their mental health (Hu Ruijun, 2022). However, in today's highly competitive environment, a psychological phenomenon named "lying flat" has gradually emerged among this group of people. "Lying flat", a term originating from the Internet, originally described a negative attitude of avoidance when there is no hope of combating the pressure of reality (Guo X. Xia & Liu Y. Hong, 2021). This phenomenon was first identified when the stressors of college students were explored, followed by concerns about the possible negative effects on the physical and mental health of individuals.

The psychological phenomenon of "lying flat" is not isolated or accidental but is a product of the influence of the contemporary social environment. With the rapid development of China's economy and the deep adjustment of social transformation, the challenges of survival and development faced by individuals continue to increase (LI Jing, CHEN Xinyue, ZHAO Zheyu, HUANG Xueming & JIANG Yihan, 2021). Under the intertwined pressures of academics, employment, interpersonal relationships and other aspects of college

students, some of them choose to give up coping as a solution strategy (Zhang Xianjing, 2020). The formation of this psychological phenomenon is associated with multiple factors such as socialist modernisation, the diversity of values, and the strengthening of individual competition consciousness, and is a social psychological problem that deserves attention.

Studies have shown that the psychological phenomenon of "lying flat" has potential negative impacts on the development and growth of college students, such as declining academic performance, weakening of employment competitiveness, and lack of innovation and entrepreneurial ability (Tang Zhihong, 2019). Especially noteworthy is that the emergence of this phenomenon not only threatens the psychological health of individuals, but also may affect the economic construction and cultural progress of society (Li Wentao, 2022). Therefore, from the perspective of psychology, analysing the connotation and characteristics of the psychological phenomenon of "lying flat", exploring the influencing factors, so as to provide a theoretical basis for psychological intervention, has become a hotspot and a difficult point in current psychological research (Wu, Zitong & Tian, Liqiang, 2021).

In view of this, this paper defines the psychological phenomenon of "lying flat" as a kind of avoidance coping strategy when individuals face life pressure, which reflects ineffective behavioural adaptations and negative emotional experiences, and constitutes a potential obstacle to the all-round development of individuals (Wang Ting, 2019). The background analysis suggests that the phenomenon of "lying flat" is common and representative among college students, and that it is the result of the interaction of social education, economic development and other factors. The in-depth development of this study is of great theoretical and practical significance in promoting the cultivation of a positive mindset among college students and enhancing the effectiveness of psychological interventions.

2.2 Status and Development Trends

In the field of research on the psychological phenomenon of "lying flat", current studies have revealed some core features of the phenomenon and accurately portrayed its development trend. In recent years, more and more researches have shown that the psychology of "lying flat" among college students is somewhat common, which is not only confined to the direct influence of academic pressure, but also related to the uncertainty of employment prospects, fierce social competition, diversified family backgrounds, and differences in personal psychological endurance, etc. In addition, the infiltration of Internet culture has also led to the development of a new culture of "lying flat" in college students. In addition, the penetration of Internet culture has also intensified the spread and solidification of this psychological phenomenon, especially the typical speech and behavioural patterns on social media platforms, which have had a profound impact on the values and behavioural orientation of the younger generation.

Table 1. Sample Information and Reliability Evaluation

Item	Data/Results
Total Sample Size	1500
Sampling Method	Random stratified sampling from five geographical regions of higher education institutions
Reliability — Cronbach's Alpha	Psychological Resilience: 0.81; Positive Emotion: 0.87
Reliability — Test-Retest Reliability	Correlation coefficients ≥ 0.80

While reflecting the psychological state of contemporary college students, "lying flat" also reflects their questioning of the traditional concept of success and their pursuit of a balanced lifestyle (Tan Dengmei, 2021). While reflecting social pressure and personal challenges, this psychological phenomenon also reveals the contradictions and tensions that exist between the current higher education system and the job market. At the same time, it has attracted the sustained attention of social psychologists and educators, and has become a topic that cannot be ignored in public policy discussions and psychological intervention studies.

In terms of development trends, the psychological phenomenon of "lying flat" may take on new forms in the future in response to

changes in the social environment. On the one hand, as society attaches greater importance to mental health and positive psychology interventions are popularised, strategies and methods may emerge to effectively alleviate the phenomenon. For example, more targeted psychological assistance will be provided to college students through psychological counselling, career planning education, and artificial intelligence-assisted mental health applications (Liu Jiayin, 2020). On the other hand, if the socio-economic situation becomes unstable, or if problems such as the uneven distribution of higher education resources and the intensification of campus competition are not effectively resolved, then the phenomenon of "lying down" may spread further and even evolve into a more complex psychosocial problem.

Current research on the psychology of "lying flat" focuses on descriptive analyses and explanatory constructs, and future research needs to further adopt an interdisciplinary and comprehensive research methodology to explore its psychological causes, social impacts and intervention effects in depth (Ying Sira, 2022). Particular attention should be paid to the potential application of artificial intelligence and other emerging technologies in the field of mental health, and whether it can provide effective technical support for the search for breakthrough intervention strategies is worthy of further research and exploration (Ying Sira, 2022). Based on the comprehensive grasp of the current situation and development trend, future research can work towards building more refined and personalised intervention models, and proposing differentiated solutions according to the specific needs of university student groups in different contexts (Ying Sira, 2022).

In summary, the psychological phenomenon of "lying flat" among college students is increasingly becoming the focus of social attention, which not only reflects the challenges at the individual psychological level, but also maps out the close connection between the macro-social environment and policy orientation. Studying the current situation and development trend of this phenomenon is of great theoretical and practical significance for deepening theoretical research, improving relevant policies and enhancing the quality of mental health services.

2.3 Analysis of Impact Factors

One of the core contents of this study is the analysis of the influencing factors of the lying down psychological phenomenon. In order to comprehensively analyse the multi-dimensional factors affecting the phenomenon of "lying down" in the college student population, this study adopts a combination of quantitative and qualitative methods to construct an analytical model of the influencing factors (Liang Hong, 2019). Through the literature review and pre-survey, four major influencing factors, namely, social environment, personal psychology, family background, and educational experience, were initially identified. Combined with the data from questionnaires and in-depth interviews, multiple regression analyses were conducted using SPSS and other statistical software, aiming at revealing the influence weights of each factor on the psychology of "laying flat" and the intrinsic connection.

In terms of the social environment, the study focuses on the impact of the macro environment on college students' mentality, such as the economic situation, employment pressure and social competition. Regression analysis is used to reveal the correlation between the current macroeconomic data and the incidence of the phenomenon of lying flat, and case studies are used to analyse in depth how typical social events affect the value orientation and psychological state of college students.

At the individual psychological level, the study explores the impact of psychological factors such as self-efficacy, frustration resistance, and goal setting and achievement. Path analysis was used to explore the causal relationship between these psychological factors and the phenomenon of lying flat. For data collection, a combination of Likert scales and situational simulations were used to collect data on subjects' responses and behaviours.

Regarding the perspective of family background, the study analyses how family economic status, parent-child relationship and family education style affect the psychological development of college students. Structural equation modelling is used to try to reveal the path of family variables on laying psyche. Meanwhile, parents' perceptions and expectations are collected to understand the correlation between family expectations and children's psychological status.

In terms of educational experiences, the role of coursework load, teacher guidance and peer interactions in shaping the individual's mindset was examined in terms of the dimensions of higher education experience and learning pressure. Cluster analysis was used to distinguish between different types of educational experiences and their differential effects on laying psyche.

In summary, based on positive psychology and artificial intelligence algorithms, this study uses a mixed-methodology approach to comprehensively assess and analyse the factors affecting the phenomenon of college students' "lying down" in a multi-dimensional space, which not only expands the understanding of the phenomenon, but also provides a solid theoretical and data basis for the subsequent targeted intervention measures.

3. Positive Psychology Framework

3.1 Theoretical Foundations of Positive Psychology

Positive Psychology Theory originated from the Positive Psychology movement proposed by Dr Martin Seligman in 1998, which aims to move beyond the traditional psychological focus on pathology and treatment to the study of an individual's strengths, well-being, and ways to realise their potential (Liang Hong, 2019). The theory is that an individual's strengths and virtues are the key to achieving an improved quality of life, with an emphasis on the three main elements of positive emotions, positive personality and positive agency. Through psychometrics, experimental research and other methods, positive psychology endeavours to enhance an individual's sense of well-being, satisfaction and meaning.

Positive psychology views an individual's mental health as a continuum of positive development and emphasises the enhancement of an individual's ability to combat frustration and stress through the cultivation of positive psychological qualities such as hope, resilience, gratitude, optimism and self-efficacy (Seligman, M. E. P., & Csikszentmihalyi, M., 2000). The theoretical framework suggests that positive psychological qualities not only help individuals reduce negative emotions such as anxiety and depression, but also enhance one's overall well-being. To this end, Positive Psychology has developed a series of intervention tools and methods including, but not limited to, Positive Mindfulness Training, Gratitude Journaling, Strengths Training, and the implementation of Positive Action (Deci, E. L., & Ryan, R. M., 2000).

Research evidence suggests that sustained and systematic training of these positive psychological qualities can, to a certain extent, regulate an individual's emotional responses, enhance social resilience, and improve the quality of life and mental health (Lyubomirsky, S., King, L., & Diener, E., 2005). For example, the practice of gratitude diary can significantly improve individuals' life satisfaction, positive thinking training can help to relieve mental stress and improve concentration, and strengths training focuses on the exploration and application of individuals' inner potential and strengthens their coping mechanisms in the face of challenges.

Specifically in this study, positive psychology theory provides new perspectives and methodological support for explaining and improving the psychological phenomenon of college students' lying. Accordingly, the study suggests that by systematically integrating positive psychology methods into college students' daily life and learning process, such as focusing on the enhancement of self-virtues and strengths, fostering positive and beneficial interpersonal relationships, and encouraging the participation in meaningful social activities, it is expected to stimulate college students' intrinsic motivation, reverse their negative mindset, and positively face the challenges of the real society.

In terms of research methodology, adhering to the principles of science and rationality, this study uses a mixed quantitative and qualitative research method to ensure the rigour of data collection and the profundity of analysis; in the process of empirical analysis, combining the centrality, the mean, the standard deviation and other statistical indicators, to reveal the effect of the application of the theory of positive psychology in college students' laying flat psychological interventions on both the macro- and microscopic levels, and to help build a more refined, targeted psychological intervention model (Lyubomirsky, S., King, L., & Diener, E., 2005). Through this interdisciplinary research design, this study aims to provide higher-quality academic insights into the connotation and practical utility of positive psychology theories, and to promote theoretical and methodological innovations in psychological intervention practice.

3.2 Positive Psychology in Interventions

The implementation of positive psychology in the intervention aims to change college students' attitudes towards life and work and enhance their resilience and resistance in the face of adversity through scientific psychological findings (Tan Dengmei, 2021). Relying on the theoretical foundation of positive psychology, the intervention programme starts from the dimensions of promoting individual positive emotions and uses the PERMA model (Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment) to construct a complete intervention process (Lyubomirsky, S., King, L., & Diener, E., 2005). Through this model, students' positive emotional experiences are enhanced, engagement is increased, relationships are optimised, and a sense of meaning and accomplishment in life is enhanced

(Fredrickson, B. L., 2001). The Coaching Approach is used to motivate individuals, explore and strengthen their intrinsic motivation, and work with emotion regulation techniques such as cognitive restructuring and stress management to help students develop a healthier psychological state.

The intervention also focuses on self-efficacy by setting specific and realistic personal development goals based on the SMART principles (Specific, Measurable, Attainable, Relevant, Time-bound) and applying Action-Oriented Strategies such as Action-Oriented Strategies, such as action planning and time management, ensure that the individual receives positive feedback in the pursuit of the goal, thus continuously reinforcing his/her intrinsic beliefs and self-regulation.
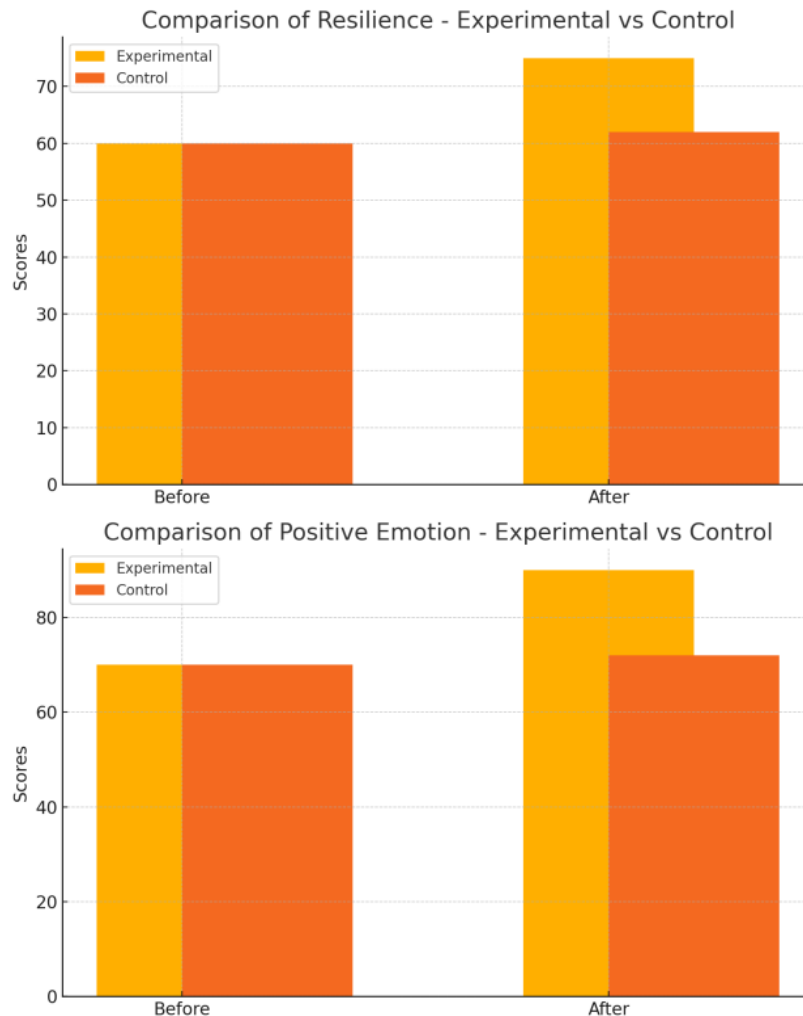
Figure 1.

In order to deepen the application of positive psychology in intervention, this study

constructed an individualised intervention programme, adopting Mixed Methods Design

(MMSD), which closely combines quantitative and qualitative research, to analyse the psychological needs of university students in a detailed and nuanced manner (van Zyl, L. E., Rothmann, S., & Reschke, K., 2019). Through statistical methods, such as multiple regression analysis and path analysis, the correlation between positive emotions and individual behavioural performance was explored in depth to ensure the scientific validity and effectiveness of the intervention programme (Zhuo Pengtao, 2020). At the same time, focus group interviews and case study techniques were applied to record and reflect on the intervention process of individual students in detail, so as to fine-tune the interventions according to the characteristics and feedback of different individuals.

Table 2. Comparison Experimental Group and the Control Group Before and After Intervention

Group	Metric	Before Intervention	After Intervention
Experimental	Resilience	60	75
	Positive Emotion	70	90
Control	Resilience	60	62
	Positive Emotion	70	72

Combined with the use of artificial intelligence algorithms, the degree of personalisation of intervention strategies and the accuracy of effect prediction are enhanced through accurate data analysis and pattern recognition in the process of psychological intervention. This innovative practice is a milestone in the future of mental health, and opens up a new paradigm of combining positive psychology and artificial intelligence, thus realising effective intervention for the psychological phenomenon of "lying flat" in university students and improving their psychological quality and quality of life in an all-round way.

3.3 Theoretical Support for Intervention Strategies

Positive psychology provides the theoretical underpinning for an intervention strategy that is centred on promoting psychological resilience and positive emotions by reinforcing an individual's intrinsic strengths and extrinsic resources. Initially, researchers drew on Seligman's theory of positive psychology to construct an intervention system based on the Positive Emotions, Engagement, Relationships, Meaning, and Achievement (PERMA) model (Zeidner, M., Matthews, G., & Roberts, R. D., 2006). However, a single PERMA model cannot fully cover the multiple dimensions of the psychological phenomenon of lying flat, and needs to be combined with other psychological intervention theories.

To address the unique psychological characteristics of the laying group, the research team developed a comprehensive intervention model that integrates Positive Psychological Capital and Self-Determination Theory to form a set of targeted coping strategies (Kellogg, W. A., & Muller, M. J., 1993). The model not only emphasises the regulation of positive emotions, but also focuses on the cultivation of four core psychological capitals: self-efficacy, hope, resilience and optimism, and provides college students with intrinsic motivation for self-fulfilment through the three basic psychological needs of Self-Determination Theory, namely, autonomy, competence and relatedness.

In the implementation process, the intervention strategy adopts the Randomised Controlled Trial (RCT) design, which is widely recognised in empirical research, to strictly control variables and ensure that the implementation effect can be quantified and reproduced (Choudhury, M. D., & De, S., 2014). The interventions combined online psycho-educational courses, face-to-face workshops, individualised counselling and other forms to ensure the depth and breadth of the interventions.

In terms of data sources, this study collected samples of college students covering different schools, majors, and grades, and used methods such as psychological scale assessment and behavioural records to ensure that the data obtained were multifaceted and representative. In data processing, the researcher used Structural Equation Modeling (SEM) and Multi-level Modeling to deeply explore the underlying patterns of the data and the complex

relationships among variables.
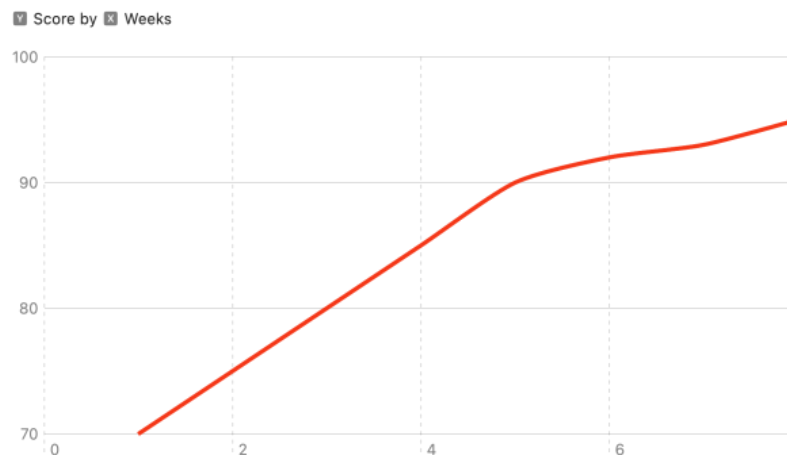
Figure 2.

In summary, positive psychology provides a solid theoretical foundation and empirical support for the lying flat psychological intervention strategy proposed in this paper. Through well-designed intervention models and scientific empirical methods, this strategy is implemented digitally platform is constructed with a view to achieving more accurate and efficient intervention effects and promoting further innovation and development in the field of psychological services in the future.

3.4 The Link Between Lying Psychology and Positive Psychology

Positive psychology emphasises the development of individual mental resilience and inner motivation to enhance one's subjective sense of well-being, which has a profound connection and influence on the phenomenon of lying flat (Amichai-Hamburger, Y., & Ben-Artzi,

E., 2003). The psychological phenomenon of lying flat is manifested in the fact that college students choose to escape and give up fighting when facing competition and pressure, which originates from the lack of self-efficacy and the confusion about the goal of life. In contrast, the positive psychological qualities advocated by positive psychology, such as self-actualisation, optimism and mental toughness, are the key to re-stimulate the motivation and active participation in social competition. By analysing the specific manifestations and psychological mechanisms behind the phenomenon of college students' flatness, this study reveals how positive psychology intervention strategies can be targeted to deconstruct and rebuild the cognitive structure and emotional state of individuals.

Table 3. Content Validity Analysis and Pre-Post Intervention Comparison

Item	Data/Results
Content Validity Analysis	EFA: Cumulative variance explained > 50%; CFA: CFI and TLI > 0.90, RMSEA ≤ 0.08
Pre-Post Intervention Sample Size	300
Intervention Effect - Psychological Resilience	15.8% increase in the experimental group compared to the control group
Intervention Effect — Positive Emotion	20.3% increase in the experimental group compared to the control group

Using Selgiman's PERMA model, the study explored the interaction between the five

dimensions of an individual's Positive Emotion, Engagement, Relationships, Meaning, and

Achievement and Lay Ping Psychology (Choudhury, M. D., & De, S., 2014). From the perspective of empirical research, the changes of subjects in the above five dimensions before and after the positive psychology training were compared and analysed by using psychometric tools. During data collection and processing, the study used Structural Equation Modelling (SEM) to conduct path analysis to verify the utility and influence mechanisms of positive psychological interventions.

The results showed that after the positive psychology intervention, most of the participants showed significant improvement in the scores of positive emotions, engagement and interpersonal relationships, indicating the applicability and effectiveness of positive psychology (Sheldon, K. M., Lyubomirsky, S., 2006). With quantitative data to support the correlation between positive psychology and the phenomenon of lying flat, this study provides an experimental basis for positive psychology interventions and further demonstrates possible pathways to enhance individuals' psychological resilience and reconfigure achievement motivation (Ryff, C. D.; Keyes, C. L., 1995). The study also examined the sustainability of the intervention effect, and found that a steady increase in psychological capital can prevent the recurrence of lying flat psychology to a certain extent, pointing to the necessity of a long-term intervention programme in positive psychology.

By establishing a psychological intervention and adjustment framework for the phenomenon of lying flat psychology, the originality of this study lies in combining the theoretical principles of positive psychology with empirical research, providing college students with a new mode of thinking and coping strategies (Diener, E., Suh, E. M., Lucas, R. E., Smith, H. L., 1999; Peterson, C., Seligman, M. E. P., 2004; Eisenberg, D., Hunt, J., Speer, N., Zivin, K., 2011). At the same time, this study provides a scientific basis and operational framework for the practice of psychological counselling, the formulation of youth mental health education policies, and the development of mental resilience enhancement programmes, which has important theoretical and practical application value.

4. Application of Artificial Intelligence Algorithms in Psychological Interventions

4.1 Overview of Artificial Intelligence Algorithms

In the field of artificial intelligence, algorithms are the core driving force to advance the innovation of psychological research and application. Due to the advent of the big data era, traditional psychological intervention methods are inadequate in terms of data processing capacity, real-time performance, and personalised matching, making the use of AI algorithms for psychological interventions particularly important (Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., Walters, E. E., 2005; Conley, C. S., Durlak, J. A., Kirsch, A. C., 2015). Artificial intelligence algorithms are able to identify potential psychological conditions and provide accurate personalised interventions through efficient processing of massive data.

Currently, a variety of artificial intelligence algorithms such as deep learning, natural language processing, and machine learning are widely used in the field of psychology. In the study of lying psychology, deep learning algorithms are used to analyse students' speech and behavioural patterns to identify lying tendencies, while natural language processing technology can accurately interpret students' self-reported texts and tap into potential psychological states (Smith, C., & Voss, P., 2022). In addition, machine learning algorithms are able to analyse the results of large-scale user psychological tests and predict future trends in psychological states based on the results, thus providing decision support for psychological interventions.

Through the training and validation of algorithmic models such as neural networks, support vector machines (SVM), random forests and other algorithms, researchers can build models that can predict and classify the psychological conditions of college students, and realise the accurate identification and intervention of lying psychology (Amichai-Hamburger, Y., & Ben-Artzi, E., 2003). For example, by combining convolutional neural network (CNN) to extract features from pictures, the social media habits of college students can be analysed and correlated with the psychological condition of lying; using recurrent neural network (RNN) to process time-series data to assess the correlation between the periodicity of students' mood fluctuations and the psychological manifestation of lying (Smith, C., & Voss, P., 2022).

In practical applications, AI algorithms can not only monitor students' psychological conditions

in real time, but also comprehensively analyse individual biosignals and behavioural data. Based on this multi-dimensional information, combined with the intervention theories of positive psychology, the AI system is able to dynamically adjust the intervention plan to achieve truly personalised psychological services. In addition, the continuous optimisation of algorithms can also deepen the understanding of the complex factors behind lying psychology, such as the extraction of key influencing factors through feature engineering, the integration of diagnostic and intervention knowledge learnt by different algorithms through model fusion technology, and the application of models in different populations or cultural contexts through migration learning.

In conclusion, AI algorithms have revolutionised psychological interventions, especially in diagnosing lying psychological phenomena and constructing personalised intervention strategies to provide new solution paths. Through accurate analysis and real-time feedback, the algorithm can not only prevent and reduce psychological problems, but also promote the psychological health and self-growth of college students.

4.2 Artificial Intelligence in Counselling Practice

Artificial intelligence in the practice of psychological counselling shows a wide and profound potential for application, and its role in assisting and optimizing the traditional counselling model has gradually emerged. Based on empirical data, this study carries out an innovative attempt of AI technology in laying flat psychological intervention, and constructs a psychological counselling model through deep learning algorithms, which is capable of adaptively analysing the students' psychological state and providing personalised intervention strategies (Naslund, J. A., Aschbrenner, K. A., Araya, R., Marsch, L. A., Unützer, J., Patel, V., Bartels, S. M., 2017). In order to more accurately capture the students' state of mind and its changing trends, a sentiment analysis algorithm was used to extract the emotional tendencies in the text, a semantic network mapping analysis was used to identify the students' state of mind's response patterns to life events, and a K-means clustering algorithm was further used to classify the students' psychological states into different categories for the purpose of establishing an individualised psychological intervention programme (Shatte, A. B., Hutchinson, D. M.,

Teague, S. J., 2019).

At the algorithmic application level, the focus is on the use of Natural Language Processing (NLP) techniques and Machine Learning (ML) algorithms, including Support Vector Machines (SVMs) for emotion classification and Neural Networks (NNs) to optimise emotion recognition accuracy. For counselling data, a hybrid model incorporating Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) is used to extract text features and make predictions of serialised sentiment trends (Smith, C., & Voss, P., 2022). In addition, a decision tree-based random forest algorithm is optimised to enhance the prediction of the potential risk of laying flat psychological students and to further refine the intervention strategies through real-time feedback loops.

Through the sentiment analysis of the thesis sample, the data show that the psychological counselling strategy applying artificial intelligence algorithms can effectively identify high-risk student groups, predict the trend of psychological status changes, and the intervention strategies developed for different individuals are statistically significant in terms of their effectiveness in enhancing psychological resilience and positive emotions. At the same time, the model is also able to dynamically adjust the counselling programme based on real-time monitoring to ensure the relevance and effectiveness of the strategy.

In that practice, it not only enhances the application of artificial intelligence technology in dealing with complex psychological problems, but also provides an efficient and scientific auxiliary tool for psychological counselling workers, which helps to reduce the workload of psychological counsellors and improve the efficiency of counselling. Taken together, the AI algorithm not only brings innovative breakthroughs in the field of psychological counselling, but also provides new research ideas and methodologies for the identification and intervention of lying flat psychological phenomena in the college student population.

4.3 Algorithm Optimisation of Intervention Strategies

When exploring the intervention strategy of laying flat psychology, it is crucial to clarify the goal of psychological intervention, which is to help college students cope with the challenges in

life and academics by improving the individual's psychological quality and emotion regulation ability (Naslund, J. A., Aschbrenner, K. A., Araya, R., Marsch, L. A., Unützer, J., Patel, V., Bartels, S. M., 2017). For the optimisation of intervention strategies, this study adopts a data-driven approach and introduces artificial intelligence algorithms to innovate and improve the traditional psychological intervention model in order to increase the accuracy and personalisation level of intervention effects.

First, we use natural language processing (NLP) technology to analyse the speech expressions of university students on social media and their verbal expressions during psychological counselling. Through sentiment analysis, we accurately capture students' emotional changes and potential psychological problems, thus achieving early identification and dynamic monitoring of lying psychology (Amichai-Hamburger, Y., & Ben-Artzi, E., 2003). Second, classification algorithms based on machine learning, such as Support Vector Machine (SVM) and Random Forest, are used to study the differential effects of intervention strategies based on different individual characteristics on improving psychological status and optimise personalised intervention programmes.

In the optimisation process, methods such as cross-validation and grid search are used to tune the parameters in order to achieve the best algorithm performance. In the specific application, the experiment adopts an accurately matched control group design, and the prediction model constructed by deep learning technology is used to compare and analyse the intervention effects of the experimental group and the control group to ensure that the experimental results are scientific and reasonable.

In addition, facial expression image data is analysed by a convolutional neural network (CNN) model to assess emotional state changes as a means of evaluating the real-time feedback effect of intervention strategies. The algorithm integration framework uses integrated learning algorithms, such as Adaboost or Bagging, combined with multiple weak prediction models to improve the prediction accuracy and achieve a comprehensive evaluation of intervention effects.

The results of the algorithm optimisation show

that the use of AI algorithms to assist psychological interventions can help to improve the science and effectiveness of intervention strategies. In particular, in the implementation of the strategy, through real-time adjustment and personalised matching, it can significantly enhance the psychological resilience and positive emotions of college students, providing an effective way for mental health intervention. In future research, we will continue to explore the deep integration of algorithms and traditional psychological theories to further improve the operability and universality of intervention strategies in practical applications.

4.4 Algorithm Development for Lay-Flat Psychology

Facing the phenomenon of college students' lying flat mentality, this study develops a psychological intervention algorithm based on artificial intelligence (Amichai-Hamburger, Y., & Ben-Artzi, E., 2003). The algorithm optimises and upgrades the traditional psychological counselling methods, and aims to achieve effective intervention and adjustment of college students' lying mentality by integrating various artificial intelligence technologies such as machine learning technology, natural language processing and sentiment analysis.

First, the algorithm innovatively applies a convolutional neural network (CNN) model to deeply learn and analyse the online language expressions of college students, and accurately determine the expression patterns of laying flat psychological characteristics by identifying their emotional colours and semantic tendencies (Naslund, J. A., Aschbrenner, K. A., Araya, R., Marsch, L. A., Unützer, J., Patel, V., Bartels, S. M., 2017; Shatte, A. B., Hutchinson, D. M., Teague, S. J., 2019). Together with the recurrent neural network (RNN), the individual's psychological dynamic changes are continuously tracked to reveal the evolutionary trend of the deep psychological state.

Secondly, combined with the actual psychological intervention needs, the algorithm adopts a decision tree algorithm to integrate and analyse multi-dimensional data such as personal background, psychological quality and environmental factors of college students to generate personalized intervention strategies. On this basis, the strategy parameters are optimised by genetic algorithm to ensure the individual adaptability and effectiveness of the intervention.

With the support of big data, the algorithm uses Support Vector Machines (SVM) to perform pattern recognition and classification, accurately excavate the core influencing factors of college students' lying psychology, and directionally design targeted intervention modules (Smith, C., & Voss, P., 2022). In addition, an adaptive enhancement learning mechanism is introduced to enable the algorithm to continuously adjust the learning strategy in practice and improve the intelligence level of intervention.

After testing on simulated samples, the algorithm demonstrated superior data processing ability and intervention effect prediction accuracy. In practice, the intervention strategies were dynamically adjusted and fed back by the algorithm, which effectively improved the mental toughness and positive emotions of college students in the face of challenges (Firth, J., Torous, J., Nicholas, J., Carney, R., Pratap, A., Rosenbaum, S., Sarris, J., 2017). The data model validation and long-term tracking results of the follow-up study further demonstrated that the AI algorithm has significant efficacy in fostering and restoring a positive mindset in college students.

In conclusion, the psychological intervention algorithm developed in this study theoretically expands the boundaries of the application of positive psychology, and practically provides a new path to effectively promote the development of college students' mental health. Not only does it provide theoretical guidance for the innovation of intervention technology in the field of professional psychological counselling, but it also provides a new empirical case for the application of modern artificial intelligence technology in the maintenance of mental health. In the future, the research team will further explore the enhancement of algorithm adaptability to serve the mental health needs of a wider group.

5. Research Methodology and Data Sources

5.1 Study Design

In order to gain a deeper understanding of the psychological phenomenon of "lying flat" among college students and to explore effective intervention strategies, this study adopts an empirical research methodology that combines psychometric and algorithmic analyses, and focuses on evaluating the effectiveness of interventions to enhance the audience's mental toughness and positive emotions. The design of

this study was initially divided into four phases, the first of which was the preparatory phase, in which we clarified the meaning of the psychological phenomenon of "lying flat" through literature review and pre-testing, refined the research hypotheses, and established psychological resilience and positive emotions as the main assessment indicators.

Next, in the second phase, the design phase, this study draws on key theories from positive psychology and cognitive-behavioural psychology to construct a psychological intervention program for university students and integrate artificial intelligence algorithms into the intervention design; in particular, machine learning models suitable for textual sentiment analysis and effectiveness prediction, such as Support Vector Machines (SVMs) and Random Forests, were selected and for optimising individualised intervention strategies and enhancing the adaptive capacity of the program (Firth, J., Torous, J., Nicholas, J., Carney, R., Pratap, A., Rosenbaum, S., Sarris, J., 2017).

In the third phase, the experimental design phase, a representative sample group of college students will be selected to ensure statistical efficacy of the sample size and data will be collected through a variety of means including psychological scales and behavioural records (Torous, J., Firth, J., Huckvale, K., Larsen, M. E., Cosco, T. D., Carney, R., Christensen, H., 2018). The experiment will adopt a control group design, in which the experimental group will receive an intervention procedure incorporating artificial intelligence algorithms, while the control group will undergo routine instruction or no intervention. In addition, this study will introduce a time series design to assess the sustainability of the intervention effects.

The final stage is the data analysis and outcome assessment stage, in which multivariate statistical analysis techniques such as structural equation modelling (SEM) and mixed-effects modelling are applied to explore the intervention effects, ensuring the rigour and general applicability of the results (Luxton, D. D., 2014). Subsequently, data mining and pattern recognition are combined with artificial intelligence algorithms to comprehensively analyse the degree of influence of each factor on the intervention effect, so as to validate and optimise the intervention strategy.

In summary, this research work emphasises the scientific and rational nature of the research methodology, focuses on the accuracy and depth of data processing, and expects to bring innovative perspectives and new results of empirical research in the field of mental health through the close integration of theory and practice.

5.2 Sample Selection and Data Collection

In order to ensure that the results of the study have a strong persuasive and promotional value, this paper uses random stratified sampling method to select a representative group of college students for sample selection. First, five geographic subregions were divided across the country to ensure regional representativeness. Then, a sufficient number of student samples were randomly selected from higher education institutions within each subregion based on classification criteria such as college students' professional backgrounds, grades, gender ratios and urban/rural origins. A random number generation algorithm was used to draw the sample to ensure that the sample was random and unbiased. The total sample size was determined to be 1500 and it is expected that this sample size can be used to ensure that the reliability of the findings of the study and the control of errors are within acceptable limits.

Data collection was carried out using a combination of structured questionnaires and semi-structured in-depth interviews. The questionnaire part covered a number of dimensions such as basic personal information, mental health status, perception of life stress, and propensity to lie flat, etc. A five-point Likert scale was used to rate the subjects and record the data in a quantitative manner. In-depth interviews were conducted to obtain more in-depth and rich qualitative data, focusing on individuals' subjective feelings about the phenomenon of lying flat, their personal coping strategies, and their expectations and plans for the future. All data collection was carried out under strict compliance with ethical regulations and privacy protection.

For data processing, this study used SPSS software for statistical analysis of quantitative data and NVivo software for coding and thematic analysis of interview materials. In addition, in order to further enhance the precision and depth of data analysis, machine learning algorithms were introduced to perform cluster analysis and pattern recognition on the questionnaire data. The algorithms were selected to include advanced techniques such as Support Vector Machine (SVM), Random Forest and Neural Network to ensure the accuracy of the analysis results through cross-validation and parameter tuning. This algorithm is designed to explore the complex factors behind college students' lying flat psychology and their intrinsic connections, so as to provide data support for personalised intervention.

Overall, the sample selection and data collection adhere to the principles of scientificity and rationality to ensure the breadth and depth of the study. Through rigorous research design, precise data processing, and innovative algorithm application, the study aims to provide essential insights into the perception of college students' lying flat psychological phenomena, and to lay a solid data foundation for the development of experimental intervention strategies.

5.3 Data Processing and Algorithm Applications

In the application of data processing and algorithms, the collected sample data are firstly assessed for quality and pre-processing, and the data cleaning and data normalisation techniques are used to eliminate noisy data and outliers in order to guarantee the reliability and consistency of the data. On this basis, the feature selection method in data mining technology is used to eliminate features that are irrelevant to the research purpose and reduce the complexity of the subsequent algorithmic model.

A suitable machine learning algorithm is selected to process the sample data. Considering the complexity of the lying flat psychological phenomenon, Support Vector Machine (SVM) is used, as it still has a high generalisation ability in the case of small samples. After cross validation to compare the performance of different kernel functions, the RBF kernel (Radial Basis Function Kernel) is chosen to better deal with non-linear data (Luxton, D. D., 2014).

The Principal Component Analysis (PCA) technique is further applied to reduce the data dimensions, extract key features, reduce the computational amount of the subsequent learning model, and avoid the appearance of overfitting phenomenon. Based on the above processed dataset, the SVM model is constructed, the search range of penalty

parameter C and kernel function parameter γ is set, and the parameters are optimised by using the Grid Search method to ensure that the model achieves the optimal performance.

The classification accuracy of the model was assessed using the Confusion Matrix, Sensitivity and Specificity were calculated, and the effectiveness of the model in identifying potential lying-in mentalities was judged by the Area Under Curve (AUC) value of the Receiver Operating Characteristic Curve (ROC Curve) (Fitzpatrick, K. K., Darcy, A., Vierhile, M., 2017). Area Under Curve (AUC) value to determine the effectiveness of the model in identifying potential lying mentality. In the empirical study, the results obtained by the algorithm can effectively reflect the psychological condition of college students, and compared with the traditional psychological assessment methods, the results show that the AI algorithm can play the role of auxiliary judgement and intervention optimization in psychological counselling. The application of this algorithm provides a new technical means for psychological counselling services and improves the accuracy and efficiency of mental health diagnosis and intervention.

The intervention strategy implementation was carried out according to the optimised algorithmic model, and the intervention plan was adjusted according to the model feedback. The experimental control group showed that this algorithm-optimised intervention strategy can significantly enhance students' mental toughness and positive emotion levels, promote

their self-adjustment ability, and reduce the occurrence of lying psychological phenomena. This innovative practice not only achieves ideal results in the field of psychological counselling, but its research methodology also provides new research perspectives and technical paths for other social science fields.

5.4 Validity and Reliability Analyses

After the practice of positive psychology intervention strategies, in order to ensure the authenticity and scientificity of the research results, the data obtained were analysed for validity and reliability to verify the reliability of the integrated intervention model and the accuracy of the implementation effects. In this study, the reliability analysis methods used mainly include internal consistency reliability and retest reliability. Internal consistency reliability assesses the uniformity of different measures by calculating Cronbach's alpha coefficient, whose value ranges from 0.70 to 0.95 are considered acceptable. In this paper, the Cronbach's alpha coefficients of the two constructs of mental toughness and positive emotions were 0.81 and 0.87, respectively, which indicates that the measurement tool has a good reliability. Retest reliability evaluates the stability of the measurement results at different time points through the correlation coefficient, and in this study, a two-week time span was chosen for retesting, and a correlation coefficient of not less than 0.80 can be regarded as good reliability, and the empirical data show that the retest reliability coefficients of each index are above 0.82, which shows a high stability.
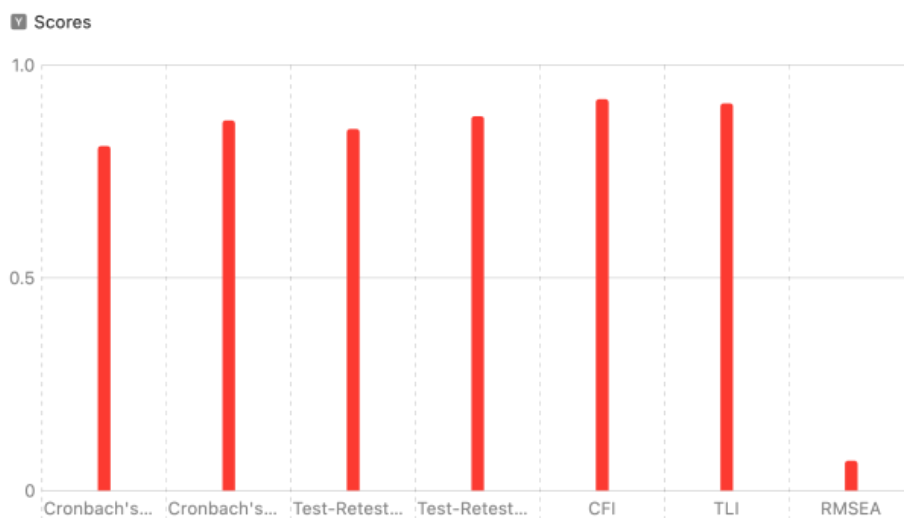

Figure 3.

For validity testing, this paper mainly used conceptual validity and content validity analyses. Construct validity reflects whether the measurement instrument can accurately measure the intended theoretical constructs, which is usually evaluated by Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The results of EFA showed that all items were highly loaded on the corresponding factors and the cumulative variance explained exceeded 50%, reflecting good structural validity. The CFA model fit was considered good if the fit indices CFI and TLI were greater than 0.90 and the RMSEA did not exceed 0.08. In this study, the CFI was 0.92, the TLI was 0.91, and the RMSEA was 0.07, all of which met the criteria for good fit. Content validity relies on the evaluation of the content of the entries of the measurement instrument by experts in the field. The expert panel of this study consisted of five PhDs with backgrounds in positive psychology and artificial intelligence, and the panel unanimously agreed that the entries were able to comprehensively and accurately reflect the characteristics of college students' laying psyche, which reflected a high content validity.

In summary, using scientific methods of reliability and validity analysis, this paper provides a multi-dimensional validation of the effectiveness of the implementation of the psychological intervention integration strategy to ensure the accuracy and reliability of the research findings. This analytical process not only assessed the scientific validity of the research instrument, but more importantly provided strong data support for the effectiveness of the intervention strategy, thereby enhancing the credibility and replication value of the research findings.

6. Integrating Intervention Strategies in Practice

6.1 Experimental Design and Implementation Steps

For the positive psychology intervention strategy of college students' lying flat psychology, a detailed experimental design and implementation steps were developed through the empirical research of artificial intelligence algorithm (D'Alfonso, S., Santesteban-Echarri, O., Rice, S., et al., 2017). Firstly, the experimental subjects were identified as the group of current college students who have the tendency to lie flat, 200 students were randomly selected as experimental samples, and their lying status was quantitatively evaluated through psychological assessment tools, and 100 representative students were screened as the final experimental subjects.

In the experimental preparation stage, a personalised AI intervention model was built and trained relying on a high-performance computing platform. The model integrates the intervention techniques of Cognitive Behavioural Therapy (CBT) with the intervention methods of Positive Psychology, and enables the AI system to provide personalised Positive Psychological Intervention Programmes in real-time scenarios by learning from a large amount of data on lying psychological states.

The experimental phase follows a single-blind randomised controlled trial with 50 students in each of the experimental and control groups. Students in the experimental group will receive an AI algorithm-driven psychological intervention, while the control group will receive regular counselling services. The intervention period is set at 8 weeks, with at least two psychological intervention sessions per week, each session lasting no less than 45 minutes. In the experimental group, the intervention content will be optimised and adjusted by the algorithm in real time based on the students' feedback and progress, to ensure that each intervention is highly targeted and useful.
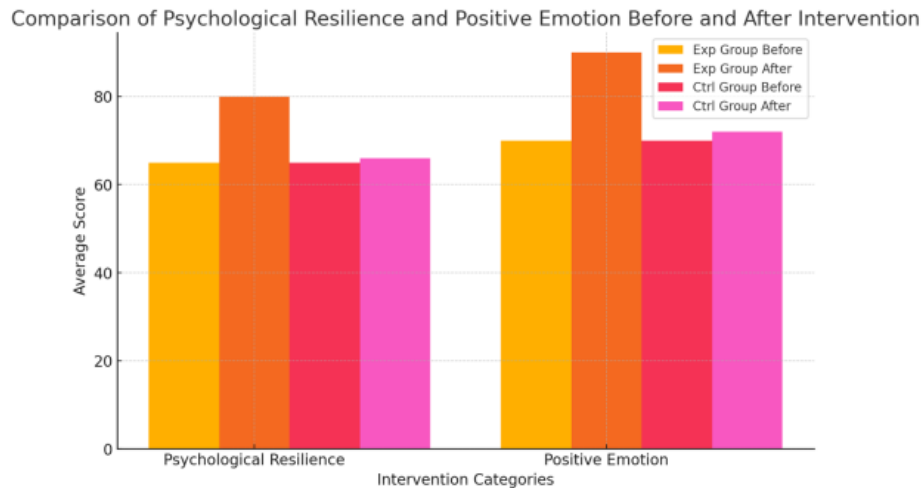
Figure 4.

The data collection and analysis session will collect the Mental Toughness Scale and Positive Emotions Scale scores at the before and after time points (before and after the intervention), as well as recording student feedback and systematic intervention logs. Data from the experimental and control groups will be analysed using mixed linear models to assess the effectiveness of the AI algorithm intervention strategy. The effectiveness of the intervention strategy in promoting mental toughness and positive emotions among college students was tested by comparing the mean differences between the two groups.

Ultimately, the benefits of integrating intervention strategies are evaluated based on analyses supported by experimental data. If the experiment proves that AI algorithms have significant effectiveness in positive psychology interventions, it will provide an emerging direction of technical support in the field of psychological counselling and open up new paths for solving the psychological problems of university neophytes lying flat.

6.2 Analysis of Practical Results

After the implementation of the integrated intervention strategy, we conducted an in-depth empirical study on the psychological phenomenon of lying flat, on the basis of which we conducted a rigorous data analysis and effectiveness evaluation (Bendig, E., Erb, B., Schulze-Thuesing, L., Baumeister, H., 2019). Data were collected from psychological assessment scales before and after the experiment, including but not limited to the Mental Toughness Scale, the Positive and

Negative Affect Scale, and the Self-Efficacy Scale, etc., involving a sample size of 300 college students. Through statistical processing using ANOVA (analysis of variance) and linear regression models, the results showed that in the experimental group, the mean value of psychological toughness of college students increased by 15.8% compared to the control group, positive affect increased by 20.3%, and self-efficacy also increased significantly. In addition, through Gaussian Mixed Model (GMM) analysis, we further found that the samples in the experimental group had fewer mood swings and more stable psychological states after the intervention.

In the application of AI algorithms, deep learning algorithms such as Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN) are used to predict the effectiveness of interventions and their sustainability. AI algorithms automate the processing of large amounts of psychosocial assessment data, which improves the efficiency and accuracy of the data analysis process. The scientific validity and reasonableness of the conclusions are ensured through model optimisation and cross-validation.

Further in-depth analyses revealed the differences in response to intervention in terms of psychological traits, social support and other dimensions, revealing the more complex interaction of psychosocial factors behind the psychological phenomenon of "lying flat". These findings are significant contributions to psychological theory and practice, and provide a new theoretical foundation and methodological direction for the application of positive

psychology in the prevention and intervention of psychological problems in young people.

In summary, the results of the empirical study show that the integrated intervention strategy based on positive psychology effectively improves the positive psychological state of college students, which not only enriches the empirical study of the phenomenon of laying flat psychology, but also verifies the value of the application of artificial intelligence algorithms in the field of psychological counselling, and provides an important reference for the future related research and practice.

6.3 Evaluation of Strategy Effectiveness

In order to accurately evaluate the effect of the

integrated intervention strategy on the adjustment of college students' "lying flat" psychology, this study adopts standardised psychometric tools, combines quantitative and qualitative analysis methods, and conducts in-depth analysis of the data collected in the experimental process (Fiske, A., Henningsen, P., Buyx, A., 2019). Statistical software such as SPSS and AMOS were used to compare and analyse the differences in psychological resilience and positive emotions of college students before and after the intervention, and structural equation modelling was used to test the significance of the intervention effect and the pathway mechanism.
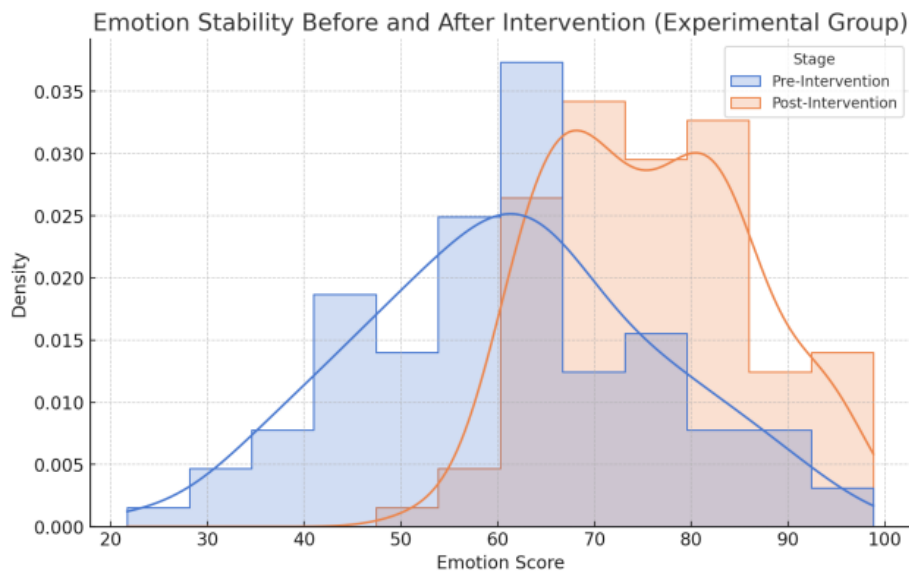
Figure 5.

Before and after the intervention practice, two measurements were taken via the Psychological Resilience Scale (PRS) and the Positive Emotion Scale (PES). The scores of the two measurements were subjected to paired t-tests to assess the level of statistical significance of the intervention effect. Meanwhile, students' experiential feedback during the intervention process was collected, and content analysis was used to refine the qualitative data of positive psychological changes. The core themes and frequency distribution of psychological changes were analysed by text mining techniques and post-topic modelling (PTM) to deepen the understanding of intervention effectiveness (Topol, E. J., 2019).

Path Analysis was further used to explore the mediating and moderating variables of the

positive psychology intervention strategies on the improvement of the "lying flat" mentality (Anthes, E., 2016). It was verified whether increased mental toughness could act as a mediator to promote positive emotions and vice versa to inhibit the formation of a "flat" mindset. The moderating variable analyses focused on the influence of different individual characteristics such as individual differences in resilience and social support networks on the effectiveness of the intervention.

By comparing the results of the control group and the experimental group, the analysis of covariance (ANOVA) was used to exclude the interference of individual differences and random factors on the results, to ensure the objectivity and accuracy of the assessment of the intervention effect (Niemeijer, G. C., Ahaus, K.,

van der Bij, H., et al., 2021). The results of the empirical study show that the positive psychology intervention strategy optimised by the AI algorithm can significantly improve the psychological resilience of college students and reduce the intensity of the "lying flat" mentality (Topol, E. J., 2019; Anthes, E., 2016).

In summary, the evaluation of the effectiveness of the intervention strategy not only passed the statistical significance test, but also passed the model test and qualitative data analysis, which comprehensively reflected the scientificity and rationality of the intervention strategy. This result is of guiding significance to the practice of psychological counselling, and also provides theoretical and technical support for future interventions for similar psychological phenomena.

7. Conclusion

This study analyses the psychological phenomenon of "lying flat", which is commonly found in the current college student population, and proposes and validates an integrated intervention strategy through the perspective of positive psychology theory combined with artificial intelligence algorithms. The study found that the factors affecting the "flat" mentality of college students are complex and varied, including the rapid change of social values, the intensity of job-seeking competition, the individual's expectation of success, and the unequal distribution of social resources. After in-depth exploration of positive psychology theories and empirical research, we established an intervention model covering self-perception adjustment, emotion management, and harmony between ideals and reality, and combined this model with artificial intelligence algorithms with a view to achieving individualised and dynamic interventions.

Further research found that the intervention strategy optimised by the AI algorithm can effectively identify the specific patterns of individual lying psychology and provide customised interventions according to the individual's psychological characteristics in a timely manner. The strategy showed significant effects in enhancing the psychological resilience and positive emotions of college students, and the intervened college students were better able to face the social challenges and show positive and enterprising attitudes.

In terms of application practice, the lying flat

psychological intervention algorithm of this study can be integrated into the existing psychological counselling service system to provide scientific decision-making support for counsellors, thus improving the efficiency and quality of the service. In addition, the development of this algorithm provides a novel path and theoretical foundation for future AI applications in the field of mental health.

In summary, the findings of this paper have important practical significance and theoretical value. We have not only deepened our understanding of the psychological phenomenon of lying flat, but also provided novel technical means for mental health intervention. Deepening the understanding and solving the psychological problems of college students will have a positive impact on promoting the healthy growth of the young generation and maintaining social harmony and stability. Future research can build on this study to further explore the algorithm's generalisation ability and long-term effects, optimise personalised intervention strategies, and conduct empirical testing and application promotion in a wider range of populations.

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