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ENHANCING PSYCHOLOGICAL FLEXIBILITY AND MENTAL HEALTH OF CHINESE UNIVERSITY STUDENTS THROUGH CURRICULUM-BASED INTERVENTIONS

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Abstract:

This study aims to explore integrating new teaching methods and interventions from acceptance-commitment therapy designed to improve the psychological flexibility of Chinese university students through a required university student mental health education course. Psychological flexibility is a protective factor for mental health. The low level of psychological flexibility is one of the reasons for the high incidence of depression, anxiety and other psychological problems at university. This longitudinal study used a pre and post-test design to test some freshmen in a particular grade at Huangshan University using the AAQ-II, CFQ-F and SCL-90. Then, a new teaching method was implemented in the courses. Systematic sampling was conducted at the end, with a sample of 287 subjects selected (M = 19 years, SD = 0.73 years; 46.6% male, 53.3% female) and was followed up to analyse the psychological test data before the course teaching and after one year. The results showed that after controlling for gender, there was a significant difference between the pre-test and the posttest, with a substantial increase in the level of psychological flexibility (P<0.001), and essential psychological symptoms were significantly reduced (p<0.001). It is concluded that the new curriculum and teaching methods can dramatically improve psychological flexibility and mental health. Based on the core concept of improving psychological flexibility, reforms should be carried out in the required curriculum of Chinese university students' mental health education, incorporating new teaching methods and interventions to help students solve their psychological distress, alleviate psychological symptoms, and promote mental health.

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Keywords:

Chinese University Student, Mental Health, Education Courses, Psychological Flexibility

Introduction

In recent years, epidemic control has generally been prevalent on university campuses, and the mental health level of university students has been affected to some extent (Ibrahim & Alexcius, 2023; Chang et al., 2020). Research has shown that during the epidemic period, the mental health level of Chinese university students has been declining, and mental health education guidance and intervention are needed (Tu & Cheng, 2021).

As a compulsory course for students, mental health education should play a leading role. Progress in research on psychological flexibility suggests that as psychological flexibility increases, mental health levels will increase (Zhang & Liu, 2019). Therefore, summarise the past teaching methods of university students 'mental health education courses, explore the combination of teaching means and psychological flexibility, and innovate related course teaching to promote the healthy development of Chinese university students' bodies and minds.

Psychological flexibility refers to the individual being able to fully perceive the current external environment and, at the same time, consciously perceive and accept the inner mood of the external environment (Hayes, 2019) so that the inner value direction becomes clear and takes action under the guidance of the value direction (Liu et al., 2021). Individual psychological flexibility is mainly reflected in two aspects: cognitive fusion and empirical avoidance (Hayes & Pierson, 2005), which have a high correlation with anxiety, depression and other psychological symptoms prevalent among university students(Yang et al., 2019)

Studies have shown that self-awareness and mindfulness can improve psychological flexibility (Hayes et al., 2023). Group psychological counselling can improve individual psychological flexibility in the curriculum education of Chinese university students (Xu, 2018). Therefore, it can be combined with the characteristics of university students to design a teaching scheme based on psychological flexibility to improve students 'psychological flexibility as the teaching goal in the teaching process through psychological testing and confusion, group counselling, psychological experience, and comprehension communication. Using the teaching method designed based on psychological flexibility to improve the students' mental health education level, carry on the thorough study, thus better playing the role of classroom education's main channel.

Methodology

Research Design

In China, university students are required to receive mental health education. Students need to complete this course in batches during the first academic year of enrollment. Therefore, we randomly selected a batch and included the students who attended this course as participants. After asking in class, those with substantial mindfulness competence or those who have taken part in programmes akin to the research were not allowed to attend. Because the research is



Volume 9 Issue 54 (June 2024) PP. 613-623 DOI 10.35631/IJEPC.953047 conducted almost in the course of teaching and in a natural environment, every student participates until the end.

Before the start of this study, consent was obtained from the Student Affairs Office and the Ethics Committee of Huangshan University. Students signed the informed consent form before the start of the course and the implementation of the psychological test. During the course teaching process, we will fully explain the content and purpose of this research to them, promise to keep their information confidential and abide by ethical norms in the process of analysing the data.

This study adopted the method of longitudinal quantitative research and Pre and Post design. The subjects of this study are university students who have participated in the required mental health education courses and are located in Huangshan University, Anhui Province, China. Our research group improved the course and incorporated specific techniques of acceptance and commitment therapy with the purpose of improving students' psychological flexibility. This course is divided into four parts: psychological testing and puzzle-solving, psychological experience (including specific techniques of acceptance and commitment therapy such as mindfulness and meditation), group counselling, and sharing of insights.

During this study, students from three faculties and six majors took required courses during their freshman year. For pre-teaching, We collected students' psychological test data to know their mental health status. In the course, we implemented a four-part teaching course with the purpose of improving psychological flexibility. For post-teaching, We tested their mental health again a year later to test the lasting effects of the courses on improving mental flexibility and to prove that psychological flexibility can permanently improve an individual's mental health.

For data collection, The psychological testing part of the entire study was conducted in the Huangshan University Student Mental Health Management System, the official software of the government and the school. This system can import the psychological test scales that we want students to fill in and automatically calculate the standard score results. Students can log in using the website address and complete the process. Then, we can export the data that we need in the background of the system.

In order to ensure the validity of the entire psychological testing process and results, we first selected psychological test scales that currently have good reliability and validity both internationally and in China. Its versions were translated into Chinese by authoritative Chinese institutions, and it was widely tested and used. Secondly, the author invited an evaluation team composed of three Chinese experts to evaluate the content validity of the measurement tool and the process of psychological testing, as well as the four processes of course implementation. According to the unanimous opinions of three experts, all items of the scale were reviewed and deemed suitable for use in this study. The process of administering the psychological test conforms to standard specifications. The course content and implementation methods are conducive to improving individual psychological flexibility. Finally, participants were informed that their participation was voluntary, anonymous, and had no bearing on their course grade.



Pre-test

Before the mental health education class, the participants were asked to complete the psychological flexibility-related questionnaire and symptom self-test form for evaluation.

Curriculum Teaching

The course was formed by a team of psychology experts from Huangshan University, who incorporated specific techniques of Acceptance Commitment Therapy (e.g., Positive Thinking, Meditation, etc.) into the course syllabus and innovative teaching methods. One of the aims of this study was to test the effectiveness of these creative methods. Before implementing the course, we also invited three Chinese experts to evaluate the course content. The three experts agreed that the purpose of the course teaching is clear. From a theoretical perspective, innovative teaching methods can improve individual psychological flexibility.

These new teaching methods and interventions are based on past research on psychological flexibility among Chinese university students and have been proven effective. For example, University students with significant social avoidance tendencies were the subjects of group intervention trials (Li et al., 2015), so ACT may effectively reduce social avoidance. According to some research (Wu et al.,2019), ACT group therapy can help university students who struggle with social anxiety to experience reduced anxiety and avoidance. Self-viewing and mindfulness recording have been employed by researchers to assist college students in developing more psychological flexibility (Xu, 2022), which can lower stress, anxiety, and depression. According to some academics, music group therapy can improve psychological flexibility and mental health, reduce psychological stress, and help pupils become more mentally adaptable (Xu, 2018). All in all, according to some reports, the psychological flexibility-enhancing classroom teaching intervention was a huge success(Xu, 2022).

One semester of mental health education courses for the participants. The course is divided into two parts: Theoretical knowledge and practical activities, and rotating. Subjects receive counselling once a week for 16 weeks. Theoretical knowledge is mainly related to psychological flexibility and mental health knowledge. In practice activities, based on previous methods to improve psychological flexibility, the design includes group self-cognition, praising us, drawing psychological hand-copy newspapers, psychological debate competitions, meditation and relaxation experiences, mindfulness experiences, group counselling, group training, watching psychological films, sharing perceptions, exchanging experiences, arranging campus psychological drama, etc., some new methods of teaching, and so on. The specific course design and course content will be presented in the form of publications in the future.

Post-test

In the year after the end of the teaching activity, all participants were re-evaluated using the psychological flexibility-related questionnaire and symptom self-test scale.

Sampling and Population

According to official data from the Huangshan University Student Affairs Office and the University Student Mental Health Education Center, the total target population is 1020. According to the formula(Cochran, 1977), the minimum sample size for this is 280. We conducted mental health tests on 1,020 students who participated in the courses during the psychological testing and puzzle-solving part of the course. One hundred fifty-nine test results



were eliminated due to invalid responses or incomplete completion. Finally, 861 university students made up the study's whole sample.

In the process of sampling, demographic heterogeneity was addressed using systematic random sampling. We shall compile an extensive list that proves a direct match between the student card numbers at Huangshan University and the numbers from the psychological tests. By dividing the estimated population size (N=861) by the computed sample size (n=287), we will get the interval (k). The interval (k) in this instance will be 3. We made use of a random number generator to provide the beginning point for choosing.

Through the mental health test software for university students at Huangshan University, 287 questionnaires were acquired for students of six majors at Huangshan University, among which 134 were boys, 46.6%, and 153 were girls, accounting for 53.3%. The scope of the questionnaire included the majors of science, technology, and liberal arts.

Instrumentation

The Acceptance and Action Questionnaire (Cao et al., 2013) and The cognitive fusion Questionnaire (Zhang et al., 2013) were used in this study. The 90 Symptom Checklist Form (SCL-90) was performed (Jin et al., 1984).

The Acceptance and Action Questionnaire (AAQ-II)

The scale used in this study was developed by Zhu Zhuohong's team at the Institute of Psychology, Chinese Academy of Sciences. The Chinese-language version of the scale was translated in 2013. The scale consists of seven-point scoring, including the dimension of empirical avoidance, which comprises seven items ranging from "never" (1 point) to "always" (7 points). Higher total scores on the scale indicate a greater degree of empirical avoidance and lower psychological flexibility. Previous research has demonstrated that this scale has good internal consistency, with a coefficient α of 0.883, and satisfactory test-retest reliability, with a coefficient α of 0.800 in China. (Cao et al., 2013).

Cognitive Fusion Questionaire (CFQ-F)

The scale used in this study was developed by Zhu Zhuohong's team at the Institute of Psychology, Chinese Academy of Sciences. The scale was translated into Chinese and compiled in 2014. Each was scored on a seven-point scale, ranging from "never" (1 point) to "always" (7 points). Higher total scores on the scale indicate greater cognitive fusion and lower psychological flexibility. Relevant studies have shown that the questionnaire has good internal consistency with an α coefficient of 0.86 in non-clinical samples and a one-month retest reliability of 0.82 in China. (Zhang et al., 2013)

90 Symptom Checklist (SCL-90)

The most widely used tool in China to assess a person's mental health is one that the Chinese government has acknowledged and approved. The scale consists of 10 factors, including somatisation and comprises 90 items, each rated on a scale from "no" (1 point) to "severe" (5 points). During the test, the primary statistical criteria utilised are the total and factor scores, which can explain different components of an individual's mental health. Each factor within the scale reflects a specific aspect of an individual's symptom distress. Based on the demographic survey and Chinese norm data, the total score has a coefficient of 0.975(Jin et al., 1984).

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Data Analysis

Excel and SPSS, v.24.0, were used in this longitudinal quantitative research sectional design study for descriptive statistics and inferential statistics. A statistically significant difference will be indicated by an alpha value of less than 0.05 ($\alpha < 0.05$)

Descriptive analysis: Trends in concentration and dispersion, as well as the general state of the sample, may be understood by utilising descriptive statistics like mean and variance. Thanks to this study, we can summarise each sample element's features and evaluate the mental health status of university students. The continuous variable histogram and Kolmogorov-Smirnov's test will also analyse the data's normality. Using a box plot will assist in locating outliers, missing values, and possible causes of anomalies. It will also direct the selection of relevant statistical procedures. The production of the study's results will take into account the findings of the descriptive statistics.

Independent T-test: It was employed to examine the potential impact of control factors, such as gender, on the variation in the means of the relevant continuous variables. Prior to doing the statistical test, the normality of the continuous variables of interest will be evaluated. Levene's test will be employed to ascertain the level of chi-squareness of the continuous variables. Every statistical analysis's findings will be shown as means with matching standard deviations.

Paired samples t-test: This is the most important statistical method in this study. It is a statistical method for comparing the means of two related groups or circumstances(Coman et al., 2013). It is sometimes referred to as dependent samples analysis or paired-sample t-test. When you have two pieces of data that are paired or matched in some way, you usually use it. Every data point in one set is directly connected to or related to every other data point in the other set, which is one of the main features of paired sample data. A statistical technique for comparing the means of two similar groups or situations is the paired sample t-test. It is usually used in situations when you have two sets of data that are paired or matched in some way, such as matched pairs in before-and-after measurements on the same people. The formula for the paired sample t-test is as follows:

t= $(M-\mu)/(s/n-\sqrt{n})$ where: t is the t-statistic. M is the mean of the differences between the paired observations. μ is the hypothetical population mean , and s is the sample standard deviation of the differences. n is the number of paired observations.

One useful tool is the paired sample t-test to ascertain if there is a statistically significant difference between the means of the two matched groups. It accomplishes this by computing the difference between the pairings, gauging the degree of variability in that difference, and determining whether the observed difference is a genuine, significant difference or just a random variation. Essentially, it serves as a key instrument for measuring and a numerical indication of the efficacy of innovative teaching techniques, and it is mostly employed to assess the efficiency of intervention strategies. Also, The normality of the continuous variables of interest will be assessed before conducting the statistical test. Levene's test will be used to determine the degree of chi-squareness of the continuous variables. The results of each statistical analysis will be displayed as means with corresponding standard deviations.

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Results

Gender Difference Analysis

Table 1 Independent Sample T-test of Psychological Flexibility and Mental Health inGender of University Students							
	Gender	The number of cases	Average value	Standard error	Standard error mean	Τ	Р
AAQ-Pre- test total	man	134	20.47	5.159	.489	3.009	.003**
score	woman	153	22.53	6.093	.484	5.009	.005**
The CFQ-F	man	134	28.85	7.361	.702	2 016	000***
pre-test total score	woman	153	32.18	7.085	.882	3.810	.000***
SCL-90	man woman	134 153	2.06 2.06	.5226 .3693	.0319 .0423	4.41	.000***

Source: * * * p < 0.001, * * p < 0.01, *p < 0.05

An independent sample t-test was conducted to understand the influence of gender on the psychological flexibility and mental health of university students. The study found that boys' and girls' psychological flexibility and mental health were significantly different (p <0.001). The average score of boys was lower than that of girls, indicating that the psychological flexibility and mental health of boys were higher than those of girls in Table 1.

Pre-test and Post-test Analysis Of Psychological Flexibility

Table 2 Paired Sample T-test for Psychological Flexibility of University Students						
	Average value	The number of cases	Standard error	Standard error mean	Т	Р
CFQ-F pre-test total score	30.620	287	7102	.441	17 260	.000***
CFQ-F post-test total score	26.640	287	5.823	.362	17.200	
AAQ-Pre-test total	21.570	287	5.870	.363	10 510	.000***
score AAQ-Post-test total score	18.330	287	4.008	.348	18.510	
Source:* * * p < 0.001. * * p	<0.01. *n <0	.05				

p <0.001, * * p <0.01, *p <0.05 Source:

By teaching courses based on psychological flexibility improvement in 6 different majors, we found significant differences in individual psychological flexibility before and one year after teaching (p <0.01). The paired sample t-test was conducted on the psychological flexibility of 287 subjects. For example, the results in Table 2 showed that after the course teaching, the scores on the relevant scale were significantly lower than the pre-teaching scores, and the psychological flexibility was well improved.



Pre-test and Post-test Analysis Of University Students' Mental Health Level

In different professional classes, the compulsory mental health education was found to differ significantly in the mental health level before and one year after teaching (p < 0.01). The paired sample t-test was conducted on the psychological flexibility of 287 subjects. For example, the results in Table 3 showed that the total average score of the SCL-90 scale was significantly reduced after one year, and the individual mental health level improved.

Table 3 Paired Sample T-tes	st of the Menta	I Health L	evel of Univers	sity Stud	dents
Average	The number	Standard	Standard	_	_

	Average value	of cases	Standard error	Standard error mean	Τ	Р
Total mean score of SCL-90	2.177	287	.506	.047		
Pre-test points					60.21	.000***
Total mean score of					3	
SCL-90	1.666	287	.448	.0216		
After the test points						
<u>C</u> ****	<0.01 *** <0	0.05				

Source: * * * p < 0.001, * * p < 0.01, *p < 0.05

Discussion

In this study, we found that the questionnaire scores of boys were generally low, and the AAQ-II and CFQ-F scores of boys were about 2 and 3 points lower than those of girls, indicating a significant difference in psychological flexibility by gender. This study result was consistent with previous research(Landi et al., 2022). The research, which compared the six majors and 287 subjects in university students' mental health courses before and after the change in psychological flexibility and mental health, found that the degree of change in each class is not the same; the liberal arts major is more obvious in science and technology. The reason is that girls' gender in liberal arts is more than science and technology.

This study found that the total SCL-90 mean score, anxiety and depression scores decreased significantly after teaching university students mental health courses based on improving psychological flexibility. The average scores of SCL-90, AAQ-II, and CFQ-F each show a high state, which indicates that the psychological flexibility and mental health level of Chinese university students can be improved through innovative course teaching. This study result was consistent with previous research(Xu, 2018). On the other hand, we also found that university students face a new environment, with a change of life, study and interpersonal. If the psychological flexibility level is low, they are likely to have different degrees of mental health problems(McCracken et al., 2022). By opening up compulsory courses for university students' mental health education based on improving psychological flexibility and through the innovation of certain course teaching content and teaching methods, the psychological flexibility of university students can be significantly improved.

This study found that after one year, the mean value of the cognitive fusion scale decreased by about 4 points, the empirical avoidance decreased by about 2 points, and the overall psychological flexibility changed from a poor state to a good state. This shows that the change in psychological flexibility for university students is complete and lasting, for their mental health level continues to produce benefits. This study result was consistent with previous research(Steenhaut et al., 2019). So, the required courses in Chinese universities universities



Volume 9 Issue 54 (June 2024) PP. 613-623 DOI 10.35631/IJEPC.953047 he individual psychological flexibility

require goal-oriented reform, determined to improve the individual psychological flexibility for teaching effect evaluation index, which has realistic value.

The findings of this study were that, due to the epidemic (Muniruzzaman & Siddiky, 2021), Before the implementation of the curriculum for education, university students' self-adaptation, learning, interpersonal communication, self-awareness development and other aspects of progress were relatively slow. After experiencing the theoretical study and practice of the curriculum based on improving psychological flexibility, more interaction between teachers and students(Halif et al., 2020), classroom mindfulness, meditation, relaxation, and other psychological training activities can help teachers and students produce more communication and understanding. University students know more about how to understand themselves and respect others. With other students in a harmonious atmosphere, we can avoid the occurrence of contradictions. As a master of interpersonal communication skills, I learned to accept and pass on love. Establish good social relations. Give university students a greater sense of belonging and self-identity. Increase their happiness, Help them accept negative emotions. Live with their feelings and thoughts. Face reality with a more positive attitude. Think about and implement more positive and feasible solutions. The executive function of the behaviour is improved, and the value orientation of life is evident. Therefore, improving the mental health level of university students is beneficial.

Conclusion

This study, through its value-oriented practical activities, analyses the effective principles of improving psychological flexibility and forming a training method for university students' psychological quality and good behaviour; not only can students fully feel the fun brought by learning in the scene, but It also allows students to experience the gains of the required courses fully, helps them better integrate into the group, Cultivate their goodwill and quality, Shaping a healthy personality and an excellent social mentality; university students will get psychological insights from these experiential activities, Deepen the understanding of the knowledge, Knowledge of the methods, Sublimate the original self-concept and emotion, Continuous internalisation to form the correct self-awareness, These will be lasting and effective to help university students improve their psychological flexibility, Promote individual mental health and development.

Suggestion for Future Research

This study, by comparing Chinese university students' mental health levels based on the universities' compulsory courses before and after a year, which is designed for psychological flexibility, shows that curriculum education can effectively improve psychological flexibility, promote university students' mental health levels, for education means and teaching methods, put forward the new ideas, reduce the occurrence of university students' mental health problems, provides a new path, also for psychological flexibility and specific methods, and has carried on the beneficial exploration. However, this study also has some shortcomings, such as the sample size collected on campus is not fully convincing and has limited teaching methods to improve psychological flexibility effectively; a theoretical model of six dimensions, which is only cognitive integration and empirical avoidance, so there is no comprehensive analysis of the improvement of psychological flexibility; and exploring more teaching methods in other dimensions to improve the mental health of university students. In future research, we can work on more comprehensive scales to measure psychological flexibility, discover more ways to



improve students' psychological flexibility and mental health in the classroom, optimise the methods and extend them beyond the classroom and into different social fields.

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