

Effects of Martial Arts Participation among College Students Psychological Stress

Jun Liu^{1,*}

¹ D Graduate School, Adamson University, CO 1000, Philippines

* Corresponding author: Liu Jun (Email: 1938820669@qq.com)

Abstract: In modern society, college students are facing more and more psychological pressure, which has a negative impact on their physical and mental health. However, martial arts, as an ancient and comprehensive form of physical activity, has been shown to have positive effects on mental health. Therefore, it is of great practical value to study the influence of wushu participation on the psychological stress of college students. In this study, 388 students were randomly selected and the collected data were analyzed by descriptive correlation design and SPSS (Statistical Package for Social Sciences) software. Overall, participants experienced some level of stress in all three areas, with slightly higher stress in their academic life, lower stress in their social life, and moderate stress in their family life. This highlights the importance of providing comprehensive support, including resources and assistance in academic, social and family matters, to promote the overall well-being and mental health of students. Through the study of the influence of Wushu participation on the psychological pressure of college students, it is found that improving physical fitness, releasing pressure, cultivating concentration and self-discipline ability, and providing social support are of great significance to alleviate the psychological pressure of college students.

Keywords: Martial Arts Participation; Psychological Stress; College Students.

1. Introduction

College students are a group with great psychological pressure. Due to a wide range of external pressures such as academics, emotions, life, employment, etc., some college students in our country have been in a sub-healthy psychological and physiological state for a long time. This sub-health state is related to the psychological stress of college students. There are countless cases of illness and suicide due to excessive stress. Therefore, many experts and scholars are working hard to find ways and means to reduce and improve psychological stress. Although they have explored various active therapies to reduce psychological stress, among which physical exercise therapy is one of the effective methods to solve psychological stress, many studies are still insufficient. It just clarifies the logical connection between the two, that is, the path research on how to reduce and improve psychological stress. As a martial arts practitioner and a college physical education teacher, one interesting thing I've discovered in my teaching career is that many students who don't like to exercise present more psychological stress issues than students who like to exercise. Secondly, in the martial arts class I teach, according to the results of the psychological survey of Chinese college students, the psychological stress of students studying martial arts is healthier than that of students studying other sports. So from the perspective of martial arts, we find that, quote It is of great significance for Chinese medicine to transfer the sub-health theory proposed by Zheng Guoguang and pay attention to the study of martial arts in relieving the psychological stress of college students.

Martial arts training (Han Zheng, 2023) is an ancient practice method that has been passed down for thousands of years. It is the crystallization of the wisdom of the Chinese nation. It is rich in content and has profound cultural value, health value and educational value. (Cai Gang, 2007 & Li Yanan 2019) On the basis of reviewing the traditional and

modern classification of Chinese martial arts, this paper classifies Chinese martial arts from the perspective of value. It is believed that under the current social background, the value formation of Chinese martial arts is mainly reflected in striking martial arts, artistic martial arts and health-preserving martial arts. Depending on the purpose and application: Military Martial Arts: These martial arts styles emphasize practicality and combat skills and often include sparring, fighting, and combat techniques. Performance Martial Arts: These martial arts styles focus on artistry and performance values and include Tai Chi, dance-style martial arts, and instrument performance. Fitness Martial Arts: These martial arts styles focus on physical fitness, flexibility, and internal and external balance, such as Tai Chi, Qigong, and Baduanjin. This article mainly studies the mental health of college students. Therefore, this article points out that value classification provides a sustainable development space for Chinese martial arts based on fitness martial arts. The main martial arts are Tai Chi, Baduanjin and Wing Chun. It enables people around the world to have a clearer understanding of Chinese martial arts, which is conducive to the popularization and spread of Chinese martial arts.

In summary, there is a close relationship between psychological stress and martial arts exercise, because martial arts exercise can serve as an effective way to reduce and manage psychological stress.

Release Tension and Stress: Martial arts exercises usually involve body movements and high-intensity physical training, which help release tension and accumulated stress. Through exercise, people can transform negative emotions and tension into positive physical activities, thereby reducing psychological stress.

Meditation and Introspection: Many martial arts forms include elements of meditation, introspection, and concentration. This helps develop focus, increase self-awareness and calm the mind, helping people better deal with stress and anxiety.

Physical health and immune system: Martial arts exercise helps improve physical fitness, strengthen the immune system, and reduce the chance of illness, thus reducing the psychological stress related to health problems.

Self-confidence and sense of control: Through continuous practice and improvement of skills, martial arts exercise can enhance an individual's self-confidence and sense of control over oneself. This is helpful for psychological resilience when dealing with challenging and stressful situations.

Social support: During martial arts exercise, people are often able to establish social connections and friendships, which provide a channel for social support to seek support and share experiences when facing difficulties.

Time management: Participating in martial arts requires time and commitment. This may help everyone manage their time better and avoid overbusy and stress accumulation.

However, it is important to note that martial arts exercise is not suitable for everyone, and an individual's health and fitness level should be considered before participating. Martial arts exercises should also be performed under the guidance of professional coaches to ensure safety and effectiveness. Overall, martial arts exercise is a beneficial way to help people reduce psychological stress, improve mental health, and provide a positive way to manage stress. Therefore, combined with the theory of psychological sub-health and through relevant questionnaire surveys, we can understand the unique mechanism by which martial arts relieves the psychological stress of college students. Using martial arts practice as an intervention measure, study the impact of martial arts teaching content, frequency, time period and form on college students' psychological stress, find out the martial arts factors that can moderately regulate mental health, and provide theoretical and practical guidance for sports to regulate college students' psychological stress.

2. Statement of the Problem

The purpose of this study was to determine the relationship between students' levels of psychological stress and martial arts participation, and to help students address stress-related issues.

Specifically, the study will seek answer to the following questions.

2.1 What is the profile of the students in terms of:

2.1.1 sex;

2.1.2 age; and

2.1.3 major?

2.2 What is the level of psychological stress do the respondents had experienced in terms of:

2.2.1 Academic Life

2.2.2 Family Life

2.2.3 Social Life

2.3 Is there a significant difference between the assessed level of psychological stress when the respondents' profile is used as a test factor?

2.4 What is the effect of the respondents' martial arts participation on their psychological stress?

2.4.1 Academic Stress

2.4.2 Family Stress

2.4.3 Social Stress

2.5 Is there a significant difference between the effects of martial arts participation on the respondents psychological stress when their profile is used as a test factor?

2.6 Based on the results, what after-school program may be proposed to promote martial arts in alleviating stress among

college students?

3. Scope and Delimitation of the Study

This study will explore the relevant mechanisms of martial arts in relieving psychological stress among college students, including research on three aspects of psychological stress sources for college students.

Data collection included the use of questionnaires and experimental methods. Questionnaires were distributed or sent to students through Questionnaire Star to collect data. The experimental process will require multiple tests to support the findings.

The survey subjects of this study will be 203 students from the Clinical School of Wuzhou Medical College. By distributing relevant questionnaires and respecting the students' opinions, we will establish relevant databases and establish WeChat groups, QQ groups, etc. with relevant respondents to provide for multiple tests. Provide facilities to ensure data accuracy.

4. Theoretical Framework

Based on relevant research information and data, this study is anchored on sub-health theory proposed by Chinese medical expert Zheng Guoguang. The sub-health theory is a theory he proposed in the 1990s, which emphasizes the continuity of human health. Between health and disease. This theory focuses on the situation where the human body has no obvious disease, but long-term chronic stress and inappropriate lifestyle lead to impaired physical and mental functions. Sub-health status manifests as symptoms such as lack of physical strength, lack of energy, mood swings, and decreased immunity, but is not sufficient to clearly diagnose a certain disease.

By reviewing relevant literature, it can be concluded that martial arts exercise has certain potential benefits in relieving psychological stress and improving sub-health conditions. However, martial arts includes elements such as physical exercise, meditation and breathing regulation, so research on psychological stress relief mechanisms is still in an incomplete stage, although martial arts exercise does help improve the body's adaptability, enhance immune system function, and reduce stress and anxiety, and improve mental health, however, specific effects will vary based on individual differences and practice. Therefore, in real life, people often use martial arts as a means of physical and mental health cultivation.

Combining the research on the relationship between sub-health theory and martial arts exercise, the study shall explore the impact of martial arts exercise on sub-health status and whether martial arts exercise can help improve psychological stress in sub-health status. Proving that research in this area can help better understand the mechanisms of sub-health states and the role of martial arts exercise in promoting health and reducing psychological stress is the significance of this research.

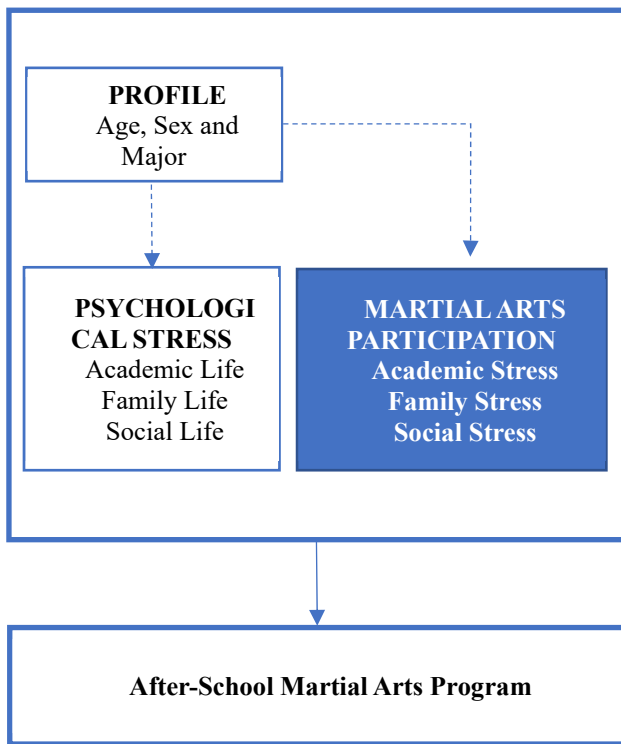


Figure 1. Research Paradigm

The research framework presents the age, gender, and major. Age may affect a college student's life experience and ability to cope with stress. Generally speaking, people of different ages may face different types of stress.

Gender may also have an impact on psychological stress, as men and women typically experience different stressors in society, family, and school. Grade level (freshman, sophomore, junior, senior, etc.) may impact a student's academic load, social pressures, and future plans and is therefore an important factor.

The framework also include the sources of psychological stress:

Academic life: Academic demands, test pressure, assignments, projects, and academic performance can cause psychological stress for college students. Social life: Social pressures, relationships, club activities, and adjusting to college life may also add to the stress. Family life: Relationships with family, family financial status, and family expectations may have an impact on college students' mental health.

Healthy Martial Arts: Engaging in a healthy martial art such as Tai Chi, Baduanjin, or Wing Chun can provide a way to reduce stress because these martial arts emphasize physical health and mental balance to help cope with other stressors.

5. Related Factors and Influences

College students of different ages, genders and majors may have different sensitivities and coping strategies to psychological stress. College students who participate in healthy martial arts may have better abilities to cope with stress because these martial arts can help them practice calmness, relaxation, and concentration skills to lessen the effects of other life stressors.

In short, the psychological stress of college students is a complex problem that is affected The purpose of this study was to determine the relationship between students' levels of psychological stress and martial arts participation, and to help students address stress-related issues. tegies should be

developed based on individual circumstances.

6. Hypothesis

Ho1 There is no significant difference between the assessed level of psychological stress when the respondents' profile is used as a test factor.

Ho2 There is no significant difference between the effects of martial arts participation on the respondents psychological stress when their profile is used as a test factor.

7. Research Design

The study will employ the descriptive comparative research design. The study will use descriptive research methods to interpret the data collected from the questionnaire and describe the interrelationships of the variables used in the study. From the comprehensive assessment, the researchers identified the correlation between psychological stress and martial arts participation among college students and proposed an intervention plan. Descriptive research is a study that describes the characteristics of the population or subjects being investigated. Descriptive research is a type of quantitative research designed to collect measurable data for statistical analysis of a population sample. The purpose of descriptive research is to map and classify phenomena. Furthermore, this study adopted a descriptive research method as it is suitable to answer the questions posed by the researcher. This design was chosen to meet the purpose of this study, which is that participation in martial arts is beneficial to the alleviation of psychological stress among college students.

8. Research Locale

Wuzhou Medical College is located in Wuzhou City, Guangxi Zhuang Autonomous Region, founded in April 2020, is approved by the People's Government of the Guangxi Zhuang Autonomous Region to formally establish the specialized level of higher education and the Ministry of Education approved full-time ordinary higher education, is the first private medical higher education in Gui Dong, the school is located in the historical and cultural city of Wuzhou, the green city of the city of water, the east of Canghai Lake, the west of Xijiang Airport, the north of the high-speed rail south station, the environment is very convenient transportation, the school is located in Wuzhou City, Longxu District, College North Road No. 1, the north. Xijiang Airport in the east and the high-speed southern railway station in the north, with a beautiful environment and very convenient transportation, the school is located at No. 1 College North Road, Longwei District, Wuzhou City. The school covers an area of 1,165 acres, with a building area of more than 250,000 square meters; the total number of existing teachers is 640, with more than 10,000 students; 17 majors are offered. There are 5 affiliated hospitals, 86 teaching internship hospitals

9. Data Gathering

Pre-gathering Phase: Permission will be sought for the approval to conduct the study from the Schools Division Superintendent to administer the survey questionnaire.

During gathering Phase: Questionnaires will be randomly distributed to students at the School of Clinical Medicine, Wuzhou Medical College, Guangxi Province, China. Select valid questionnaires from the questionnaires and number

them, and finally conduct a comparative study from the valid questionnaire fillers.

Post-gathering Phase: The questionnaire will be retrieved and data will be tabulated, analyzed, treated, and interpreted with the assistance of a statistician and the adviser. The data will be presented in tabular and textual form.

10. Research Instrument

This study will utilize a researcher-made questionnaire using a four-point Likert scale. The instrument has three parts: the profile; the psychologic stress of students; and the effect of Martial Arts on psychological stress.

The research instrument will undergo testing for validity and reliability to ensure the quality of the data collected. To assess the reliability of the questionnaire, Using a commonly used measure known as Cronbach's alpha to help determine the internal consistency of a set of items or questions in a questionnaire.

The researcher will review and analyze the data gathered through the survey questionnaire in order to determine the level of psychological stress of the respondents. The mean score shall indicate the following description:

11. Results and Discussion

This chapter presents the results, analysis and interpretation of the following data: profiles of students, such as their gender, age, major, and the level psychological stress and the effect of the respondents' martial arts participation on their psychological stress.

Table 1. The Profile of The Students

	frequency	percentage
Male	156	40.2
Female	232	59.8
Total	388	100.0
Under the age of 18	23	5.9
18-20 Years old	342	88.1
21-22	22	5.7
Over 26 years old	1	.3
Total	388	100.0
Eye optic technology	142	36.6
Medical beauty	38	9.8
Oral medicine technology	195	50.3
other	13	3.4
Total	388	100.0

Table 1 presents the frequency and percentage distribution of participants grouped by profile. As indicated in the table, females constituted the majority, accounting for 59.8%. This indicated that the majority of participants were female. The study revealed that the majority of student participants were aged 18-20 years, comprising 88.1%, followed by those under the age of 18 at 5.9%, and lastly, individuals over 26 years old at 0.3%. Additionally, the majority of students were enrolled in Oral Medicine Technology, making up 50.3%, followed by Eye Optic Technology at 36.6%, and lastly, Medical Beauty at 9.8%.

Table 2. Assessment on Academic Life

	Mean	SD	Description	Interpretation	Rank
1. I feel that academic courses and assignments gives me psychological stress.	2.19	0.88	Less Effective	Low Level of Stress	
2. I feel a lot of pressure during exams	2.40	0.93	Less Effective	Low Level of Stress	
3. I feel like I don't meet the academic expectations of my school and family	2.30	0.94	Less Effective	Low Level of Stress	
4. I feel the study burden is heavy	2.24	0.88	Less Effective	Low Level of Stress	
5. I feel disgusted with academic exams	1.88	0.80	Less Effective	Low Level of Stress	
6. I feel like I can't balance my study life with my personal life	1.87	0.85	Less Effective	Low Level of Stress	
7. I feel like I'm not interested in my current major at all	1.84	0.79	Less Effective	Low Level of Stress	
Overall	w	0.68	Less Effective	Low Level of Stress	

Table 2 illustrates participants' evaluations of The Level of Psychological Stress Do The Respondents Had Experienced in Terms Of Academic Life. Regarding the perception of psychological stress and academic burdens, the aspect with the highest stress was feeling significant pressure during exams (with the highest score of 2.40). Conversely, the lowest feelings were associated with a lack of interest in the current major (with the lowest score of 1.84). Overall, participants obtained an average score of 2.10 in these areas, indicating a moderate overall level of psychological stress. These results suggest that participants generally experience certain academic pressures, particularly during exams. However, overall, they show relatively less interest in their current major, indicating a need for attention and support to promote active engagement and involvement in academic pursuits.

Franks (2023) pointed out in the study that feeling significant stress during exams is due to the unreasonable

arrangement of academic courses and assignments, resulting in students lacking sufficient time for preparation. Additionally, feelings of not meeting academic expectations are influenced by both academic pressure and family expectations, necessitating a better support system to help students balance these sources of stress.

Franklin (2023) indicated in the study that a lack of interest in the current major reflects insufficient attractiveness of the teaching content or a mismatch between subject choice and individual interests, requiring further career planning and counseling. Addressing these issues requires comprehensive support measures from schools and educational institutions, including improving curriculum design, providing better academic guidance, and offering career counseling.

Table 3. Assessment on Family Life

	Mean	SD	Description	Interpretation	Rank
1.I feel pressured by family expectations	1.97	0.92	Less Effective	Low Level of Stress	
2.I feel worried about your family's financial situation	2.41	0.98	Less Effective	Low Level of Stress	
3.I feel like I have enough family support	2.29	0.95	Less Effective	Low Level of Stress	
4.I feel that I can cope effectively with the stress of family life	2.21	0.85	Less Effective	Low Level of Stress	
5.I feel that the pressure in family life has affected my happiness	1.82	0.88	Less Effective	Low Level of Stress	
6.I feel that family conflicts have affected my mental health	1.91	0.88	Less Effective	Low Level of Stress	
7.I feel that family affairs (such as household chores, taking care of family, etc.) have affected my studies	1.61	0.81	Less Effective	Low Level of Stress	
Overall	2.03	0.62	Less Effective	Low Level of Stress	

Table 3 presents participants' evaluations of The Level of Psychological Stress Do The Respondents Had Experienced in Terms Of Family Life. The data analysis above indicates that participants overall experience a moderate level of feelings of family stress and support. The highest score was obtained for concerns about the family's economic situation (2.41), while the lowest score was associated with the perception that family affairs impact academic performance (1.61). Overall, participants felt slightly higher than a moderate level of family stress, requiring more attention and support to facilitate a balance between academic and mental health. This suggests that participants generally experience a certain degree of family pressure, particularly concerning higher worries about economic aspects. Despite an overall moderate level of family support, the impact of family affairs on academic performance is relatively low. This indicates that, alongside providing financial support, organizing and sharing family responsibilities helps alleviate students' pressure in terms of academics and mental health.

Razlighi (2023) pointed out in the study that the high score

for concerns about the family's economic situation reflects the direct pressure on students' psychology arising from economic instability. This involves real concerns about tuition, living expenses, or family financial difficulties, requiring schools to provide more financial assistance or resource support to alleviate students' concerns in this regard.

Ye (2024) noted in the study that the relatively low score for the perception that family affairs impact academic performance indicates that participants feel less pressure in family affairs, suggesting that family members are relatively good at sharing responsibilities and collaborating. However, it also reflects lower expectations among students regarding family affairs, highlighting the need to raise awareness of its importance to better balance academic and family life.

In summary, these results underscore the importance of focusing on students' family economic conditions while providing financial support, offering mental health support, and advocating for a balanced sharing of family affairs. This is crucial for promoting students' overall well-being and academic success.

Table 4. Assessment on Social Life

	Mean	SD	Description	Interpretation	Rank
1.I feel like social pressure is taking a toll on my mental health	1.90	0.87	Less Effective	Low Level of Stress	
2.I feel pressure to compete in my social circle	1.94	0.89	Less Effective	Low Level of Stress	
3.I feel uncomfortable in social events and situations	1.96	0.88	Less Effective	Low Level of Stress	
4.I feel like social media is stressing me out.	1.96	0.89	Less Effective	Low Level of Stress	
5.I feel like I have to constantly stay socially active and socially connected.	1.97	0.95	Less Effective	Low Level of Stress	
6.I feel like my social life is having a negative impact on my academic and personal life	1.85	0.88	Less Effective	Low Level of Stress	
7.I feel that I can effectively cope with the pressures of social life.	2.13	0.92	Less Effective	Low Level of Stress	
Overall	1.96	0.70	Less Effective	Low Level of Stress	

Table 4 presents participants' evaluations of The Level of Psychological Stress Do The Respondents Had Experienced in Terms Of Social Life. The data analysis above shows that

participants overall experience a certain level of pressure in their social lives, with an overall mean of 1.96. The highest score was obtained for the belief that "I can effectively cope

with the stress of social life" (2.13), while the lowest score was associated with the belief that "My social life negatively affects my academic and personal life" (1.85). This indicates that social life has a certain negative impact on participants' mental health, requiring attention and support to promote a healthier, more balanced social experience. The data results suggest that participants feel some pressure in their social lives, particularly in the need to constantly maintain social activity and a sense of competition. This leads to discomfort in social life, affecting mental health. Although overall participants believe they can effectively cope with the stress of social life, it is still necessary to focus on how to provide support and resources to help them better deal with social pressure and maintain mental health.

Mao-Sheng (2024) pointed out in the study that the high score for the belief "feeling the need to constantly maintain social activity and connections" is related to modern social expectations and the prevalence of social media. This makes

individuals feel the need to stay highly active in their social circles to meet societal expectations. This leads to excessive focus and anxiety about social interactions, negatively impacting mental health.

Moshfeghinia (2023) noted in the study that the high score for the belief "feeling the need to compete in social circles" also reflects the competitive pressure in the social environment. This competition arises from self-comparison and competition within schools, workplaces, or social circles. This competitive pressure causes individuals to feel uncomfortable in social activities, increasing psychological burden.

Overall, these results stem from the continuous evolution of social expectations and the complexity of the social environment, emphasizing the importance of providing mental health support, promoting positive social experiences, and improving social expectations to alleviate individuals' perceived pressure in social life.

Table 5. Summary of Assessed The Level of Psychological Stress

	Mean	SD	Description	Interpretation	Rank
Academic life	2.10	0.68	Less Effective	Low Level of Stress	
Family life	2.03	0.62	Less Effective	Low Level of Stress	
Social Life	1.96	0.70	Less Effective	Low Level of Stress	
Overall	2.03	0.60	Less Effective	Low Level of Stress	

Table 5 displays participants' scores on The Level of Psychological Stress in terms of overall level and three dimensions. Comparing the means across the three domains (academic life, family life, social life), the academic life score is the highest (2.10), social life score is the lowest (1.96), and family life score is in the middle (2.03). This suggests that participants, overall, have relatively higher perceptions of academic life, lower perceptions of social life, and moderate perceptions of family life. Considering the overall mean and scores in each domain, participants, overall, experience a certain level of stress in these three aspects, with slightly higher stress in academic life, lower stress in social life, and moderate stress in family life. This emphasizes the importance of providing comprehensive support, including resources and assistance in academics, social interactions, and family matters, to promote students' overall well-being and mental health.

Bardach (2023) pointed out in the study that the high score

in academic life is due to the competitive, high-pressure academic environment and expectations for academic performance, leading students to experience significant stress in academic aspects. This involves factors such as academic workload, exam pressure, and concerns about future careers.

Potts (2023) indicated in the study that the low score in social life reflects the pressure and discomfort in the social environment, related to the continuous increase in social expectations, competition within social circles, and anxiety about individual performance on social media. This results in students experiencing certain negative emotions in their social lives.

Overall, these results highlight the different challenges students face in academic, social, and family life. Comprehensive support measures need to provide assistance in academic tutoring, social skills development, and family support to enhance students' adaptability and well-being in these areas.

Table 6. Test of Significant Different Between The Assessed Level of Psychological Stress When The Respondents Are Grouped According To Gender

	Gender	N	Mean	SD	t	Sig	Decision
Academic life	male	156	2.03	0.71	-1.75	0.08	Accepted H0
	female	232	2.15	0.65			
Family life	male	156	2.04	0.69	0.22	0.82	Accepted H0
	female	232	2.03	0.58			
Social Life	male	156	2.01	0.79	1.30	0.20	Accepted
	female	232	1.92	0.64			

Table 6 presents the results of t-test analyses, determining significant differences in the assessed levels of Psychological Stress dimensions when participants are grouped by gender. As mentioned earlier, the Level of Psychological Stress includes Academic Life, Family Life, and Social Life. In the dimension of academic life, there was a difference between males (Mean = 2.03, SD = 0.71) and females (Mean = 2.15, SD = 0.65), but the difference did not reach a significant level (t = -1.75, Sig = 0.08). This suggests differences in

perceptions between males and females in academic life, although statistically, the significance of this difference was not conclusively established. The reasons for the difference involve individual variations in gender regarding academic stress, expectations, and views on academic success.

In the dimension of family life, there was no significant difference between males (Mean = 2.04, SD = 0.69) and females (Mean = 2.03, SD = 0.58) (t = 0.22, Sig = 0.82). This indicates relatively consistent perceptions of family life

between males and females, with no significant gender differences. In the dimension of social life, there was a certain difference between males (Mean = 2.01, SD = 0.79) and females (Mean = 2.15, SD = 0.65), but it also did not reach a significant level ($t = 1.30$, Sig = 0.20). This suggests some differences in social life perceptions between males and females, although statistically not significant. This difference originates from individual variations in gender regarding social expectations, competition within social circles, and views on social media. Overall, although there were gender trends in certain dimensions, these differences were not statistically significant in this sample, requiring further research for a deeper understanding of the impact of gender on academic, family, and social life.

Yao (2023) pointed out in the study that in the academic field, gender differences are influenced by cultural and societal expectations, including expectations and evaluations of academic performance for males and females. This leads to differences in experiencing academic stress, expectations, and defining success, but due to the complexity of individual differences and sample limitations, these differences did not significantly emerge in this study.

Yan (2023) indicated in the study that in family life, the non-significant difference between males and females reflects the evolution of gender roles in modern society, making family responsibilities and expectations tend towards more equal sharing. This is also related to the characteristics and backgrounds of the study sample, as cultural and family structural differences influence gender perceptions of family life.

Huldi (2023) pointed out in the study that in social life, although there were some trend differences, they did not reach a significant level. This is influenced by social expectations, competition within social circles, and the impact of social media, where individual experiences and views on these aspects differ between genders, but due to the limitations of the study design, these differences did not significantly manifest in the statistical data.

In summary, these results emphasize the trend differences in gender perceptions in different life domains while highlighting the complexity and diversity of gender differences. Further research is needed to comprehensively understand the role of gender in individual psychological experiences.

Table 7. Test of Significant Different Between The Assessed Level of Psychological Stress When The Respondents Are Grouped According To Age

		N	Mean	SD	F	Sig	Decision
Academic Life	Under the age of 18	23	2.30	0.69	1.25	0.29	Accepted H0
	18-20 Years old	342	2.10	0.67			
	21-22	22	1.92	0.72			
	Over 26 years old	1	2.00	.			
	Total	388	2.10	0.68			
Family Life	Under the age of 18	23	2.21	0.50	1.25	0.29	Accepted H0
	18-20 Years old	342	2.03	0.63			
	21-22	22	1.84	0.58			
	Over 26 years old	1	2.00	.			
	Total	388	2.03	0.62			
Social Life	Under the age of 18	23	1.93	0.72	0.92	0.43	Accepted H0
	18-20 Years old	342	1.98	0.70			
	21-22	22	1.72	0.71			
	Over 26 years old	1	2.00	.			
	Total	388	1.96	0.70			

Table 7 presents the results of the F-test analyses, determining significant differences in the assessed levels of Psychological Stress dimensions when participants are grouped by age. In the dimension of academic life, there were some differences among different age groups. Specifically, the group under 18 years old (Mean = 2.30, SD = 0.69) showed a higher tendency compared to other age groups, but the analysis of variance results did not reach a significant level ($F = 1.25$, Sig = 0.29). This suggests that the younger age group has a higher tendency in academic life perceptions, but due to the relatively small sample size, this trend could not be statistically confirmed. In the dimension of family life, age differences were also present, with the under 18 group (Mean = 2.21, SD = 0.50) showing relatively higher scores, but again, the analysis of variance results did not reach significance ($F = 1.25$, Sig = 0.29). This indicates some differences in family life perceptions among the younger age group, but statistically, it could not be conclusively confirmed. In the dimension of social life, age differences in perceptions did not reach a significant level ($F = 0.92$, Sig = 0.43). The 18-20 age group (Mean = 1.98, SD = 0.70) had slightly higher scores compared to other age groups, but this trend also could

not be statistically confirmed. Overall, these results suggest some trend differences in perceptions of academic, family, and social life among different age groups, although these differences did not reach a significant level statistically. The reasons include the relatively small sample size, diversity in individual differences, and other factors not considered, affecting the statistical results. Further research is needed to comprehensively understand the psychological experiences of different age groups in these life domains.

Zhang (2023) pointed out in the study that in academic and family life, the group under 18 faces greater academic pressure and family expectations, leading to relatively higher perception scores. However, due to the relatively small sample size, this trend could not be statistically validated, requiring larger-scale studies to confirm the universality of this trend.

Twohey (2023) indicated in the study that in social life, the 18-20 age group had slightly higher scores compared to other age groups, reflecting the trend of individuals in this age group being more actively engaged in social activities and more concerned about social relationships. However, despite the relatively large sample size, this trend still could not be

statistically confirmed. The differences in social life are influenced by individual variations in social expectations and circle pressures within the age group.

Overall, these differences partially stem from the life stage characteristics of different age groups and the diversity of

individual experiences. However, due to sample limitations and other unconsidered factors, further research is needed to fully understand the impact of age on individual psychological experiences.

Table 8. Test of Significant Different Between The Assessed Level of Psychological Stress When The Respondents Are Grouped According To Major

		N	Mean	SD	F	Sig	Decision
Academic life	Eye optic technology	142	2.11	0.68	2.61	0.05	Accepted H0
	Medical beauty	38	1.83	0.63			
	Oral medicine technology	195	2.13	0.67			
	other	13	2.32	0.74			
	Total	388	2.10	0.68			
Family life	Eye optic technology	142	2.02	0.62	0.93	0.43	Accepted H0
	Medical beauty	38	1.89	0.66			
	Oral medicine technology	195	2.07	0.61			
	other	13	2.02	0.74			
	Total	388	2.03	0.62			
Social Life	Eye optic technology	142	1.92	0.65	1.58	0.20	Accepted H0
	Medical beauty	38	1.78	0.67			
	Oral medicine technology	195	2.02	0.73			
	other	13	1.99	0.84			
	Total	388	1.96	0.70			

Table 8 presents the results of the F-test analyses, determining significant differences in the assessed levels of Psychological Stress dimensions when participants are grouped by major. In the dimension of academic life, there were significant differences among different majors ($F = 2.61$, $Sig = 0.05$). Specifically, students in Eye Optic Technology (Mean = 2.11, SD = 0.68) and Oral Medicine Technology (Mean = 2.13, SD = 0.67) had relatively higher scores, while students in Medical Beauty (Mean = 1.83, SD = 0.63) had lower scores. This reflects differences in perceptions of academic life among students in different majors, with students in Eye Optic Technology and Oral Medicine Technology facing higher academic pressure or expectations. In the dimensions of family life and social life, differences among majors did not reach a significant level (Family life: $F = 0.93$, $Sig = 0.43$; Social Life: $F = 1.58$, $Sig = 0.20$). This indicates that, in terms of family and social aspects, students across majors had relatively consistent perceptions, and the impact of major on these two life domains was not significant. The reason is that pressures and expectations in family and social aspects are relatively common across different majors, and the differences in majors did not lead to significant variations. Overall, these results emphasize that students in different majors have different perceptions in academic life, but the impact on family and social life is relatively small. This is because academic aspects are more easily influenced by the characteristics of the major, while pressures in family and social aspects are more universal among students in various majors.

Deuter (2023) pointed out in the study that this is attributed to the nature of different majors, the difficulty of courses, and specific expectations for future careers. Majors such as Eye Optic Technology and Oral Medicine Technology have higher disciplinary requirements, leading to greater academic

pressure.

Geng (2023) indicated in the study that the differences among majors in family and social life aspects are relatively small. This reflects that pressures and expectations in family and social aspects are more universal across different majors, not significantly influenced by the nature of disciplines and course requirements. Family and social life involve broader social and cultural factors, and these factors have similar effects on students in different majors, making the differences statistically insignificant.

In general, these differences are influenced by the nature of majors and specific disciplinary requirements, highlighting the need to pay more attention to individual differences among students in academic life when providing support and resources. In family and social life aspects, more comprehensive support helps meet the diverse needs of students.

12. Conclusion

Based on the indicating findings, the following conclusions were drawn from the results of the study:

The study primarily involved female participants, comprising 59.8% of the total sample, with the majority falling within the 18-20 age range (88.1%) and a significant portion being students in the Oral Medicine Technology major (50.3%). Overall, participants were predominantly young females, specifically 18-20-year-old students majoring in Oral Medicine Technology.

Participants' evaluations of their psychological stress levels indicated an overall lower level, with average scores of 2.10, 2.03, and 1.96 for academic life, family life, and social life, respectively—reflecting low levels of psychological stress. Additionally, participants perceived limited effects of martial arts participation on psychological stress, with overall mean

scores of 2.45, 2.39, and 2.49 for academic, family, and social stress, suggesting that martial arts activities had no significant impact in these areas. Overall, participants reported a relatively low level of psychological stress, and martial arts activities were considered to have limited effects on their psychological stress.

Analyses based on participants' demographic information, including gender, age, and major, revealed no significant differences in psychological stress levels across gender, age, or major in academic, family, and social life. However, within the academic life domain, significant differences were observed among students majoring in "other" disciplines, indicating higher psychological stress levels in this group.

Regarding the impact of martial arts participation on psychological stress, no significant differences were found in academic, family, or social stress when participants were grouped by gender, age, or major. This suggests that the influence of martial arts activities on psychological stress levels remained relatively consistent across different demographic groups, without significant variations based on basic demographic information.

13. Recommendation

Based on the results, the researcher provides the following recommendations

It is recommended to further expand sample diversity, considering the participants mainly young women, 18-20 years old oral medicine technology students, research can increase other age and professional background participants to improve the diversity of the sample, to ensure that the results more widely representative.

Explore the causes of the low psychological stress level and the actual impact of martial arts activities. In view of the overall participants showing a low level of psychological stress, it is suggested that research further explore the causes of this phenomenon, including individual psychological quality, social support and other aspects. At the same time, for the impact of martial arts activities, more detailed investigation and qualitative research can be conducted to understand the participants' real feelings about why martial arts activities have a limited impact on psychological stress.

Focus on the mental health of "other" students: Due to the significant differences in "other" students in academic life, it is recommended to further understand the special challenges and stressors of students in the major, and provide professional-specific support measures to improve their mental health. This may involve more precise mental health services and guidance.

14. Proposed Nurturance Program

14.1. Rationale

The core goal of the research conducted is to evaluate and improve the ability of college students to resist psychological stress in an educational context. By carefully assessing the psychological stress levels of college students in academic, family, and social life dimensions, it provides useful insights for improving college students' mental health. The observed differences in scores in these dimensions identified specific areas for attention and improvement. Moreover, research extends attention to the effects of martial arts activities on psychological stress, including three aspects: academic, family and social stress. Deeply realize the relationship between the psychological pressure of college students and

the martial arts participation. The absence of significant differences between gender, age, and specialties underscore the wide applicability of these findings. With the increasing emphasis on comprehensive development in education, the findings advocate for the implementation of targeted interventions, including tailored training programs and comprehensive teaching methods. Furthermore, the emphasis on cross-grade collaboration suggests the need to create a supportive learning environment that transcends academic boundaries and foster a comprehensive approach to social and emotional learning. Overall, the basic principles of research is based on improving educational strategies, fostering emotional intelligence and promoting a beneficial learning environment to promote the overall social and emotional development of students.

14.2. General Objectives:

14.2.1 Strengthen the anti-psychological pressure level of college students

14.2.2 To weaken the relevant factors affecting the psychological stress of college students

14.2.3 Design rich martial arts courses to strengthen the intervention curriculum of martial arts courses involved in the promotion of college students' psychological ability.

References

- [1] Abid, F., Ahmed, S., Noushad, S., Farhat, S., & Fatima, S. S. (2023). Relationship Between Genetic Variant Of OXTR (Rs53576) And MTNR1B (Rs1387153) And Symptoms Of Psychological Stress In Females With Gestational Diabetes Mellitus. *J.P.M.A. The Journal of the Pakistan Medical Association*, 2209-2213.
- [2] Ai, Y., Hummel, T., Nie, H., Yang, J., & Han, P. (2023). Reduced neural responses to pleasant odor stimuli after acute psychological stress is associated with cortisol reactivity. *NeuroImage*, 120474-120474.
- [3] Bardach, L., Huang, Y., Richter, E., Klassen, R. M., Kleickmann, T., & Richter, D. (2023). Revisiting effects of teacher characteristics on physiological and psychological stress: a virtual reality study. *Scientific Reports*, 1.
- [4] Beevor, H. J., Ginty, A. T., Veldhuijzen van Zanten, J. J. C. S., & Williams, S. E. (2023). Mastery imagery ability moderates the relationship between heart rate reactivity to acute psychological stress and perceptions of stress and physiological arousal. *Psychophysiology*, e14486-e14486.
- [5] Cai, Zang & Ding, Liping. (2007). Classification of Chinese martial arts. *Journal of Shanghai Institute of Physical Education* (05), 65-68. doi:10.16099/j.cnki.jsus.2007.05.015.
- [6] Caldonazo, T., Kirov, H., Schneider, U., Beckmann, A. W. K., Weber, G., ... & Doenst, T. (2023). Impact of a 36-hour Nonstop Training Course on Academic, Physical, and Mental Skills as well as Psychological Stress Perception in Cardiac Surgery Residents. *The Thoracic and Cardiovascular Surgeon*.
- [7] Chaudhuri, S., Jögi, A. L., Pakarinen, E., & Lerkkanen, M. K. (2023). Teaching practices mediating the effect of teachers' psychological stress, and not physiological on their visual focus of attention. *Frontiers in Education*.
- [8] Deuter, C. E., Kaczmarczyk, M., Hellmann-Regen, J., Kuehl, L. K., Wingenfeld, K., & Otte, C. (2023). The influence of pharmacological mineralocorticoid and glucocorticoid receptor blockade on the cortisol response to psychological stress. *Progress in neuro-psychopharmacology & biological psychiatry*, 110905-110905.

- [9] Dragano Nico & Lunau Thorsten.(2020).Technostress at work and mental health:concepts and research results. *Current opinion in psychiatry*(4). doi:10.1097/YCO.0000000000000613.
- [10] Franks, K. H., Bransby, L., Buckley, R. F., Yassi, N., Chong, T. T. J., Lim, Y. Y., & Pase, M. P. (2023). Associations of self-reported psychological stress with memory and cerebrospinal fluid biomarkers of Alzheimer's disease in middle-aged adults. *Alzheimer's & Dementia*, S22.
- [11] Franklin, T. C., Goodson, M., Gajelli, T., Rutledge, C., Tharayil, J., Pennebaker, S., ... & Singer, A. C. (2023). Non-invasive Flicker Neurostimulation Boosts Resilience to Psychological Stress. *Alzheimer's & Dementia*, S11.
- [12] Geißler, C., Knoerlein, J., Bohlmann, M. K. K., Brandt, A., Guluzade, D., Gerber, M., ... & Kunze, M. (2023). [Evaluation of Psychological Distress in Obstetric Patients during the Visit Ban in Hospitals in the SARS-CoV-2 Pandemic: A Prospective, Multicentre, Controlled Study]. *Zeitschrift für Geburtshilfe und Neonatologie*.
- [13] Geng, S., Zhang, X., Zhu, X., Wang, Y., Wang, Y., & Sun, Y. (2023). Psychological factors increase the risk of ovarian cancer. *Journal of obstetrics and gynaecology*, 1, 2187573-2187573.
- [14] Gearhart, C. A., McCarthy, C. J., & Lambert, R. G. (2023). Teachers' psychological stress and wellbeing during a pandemic: Exploring latent profiles. *School Psychology* (Washington, D.C.).
- [15] Guo, Y. C.. (2018). The construction of oral history research paradigm of martial artists. *Journal of Wuhan Institute of Physical Education* (01), 63-67. doi:10.15930/j.cnki.wtxb.2018.01.010.
- [16] Han Z, Wang GZ & Zhang ZH. (2023). Explanation of "forced interpretation" in the study of Chinese martial arts. *Journal of Wuhan Institute of Physical Education* (08), 54-61. doi:10.15930/j.cnki.wtxb.2023.08.004.
- [17] Huldi, F. J., & Cisar, C. J. (2023). Developing an Annual Training Program for the Mixed Martial Arts Athlete. *Strength and Conditioning Journal*, 6, 745-753.
- [18] H. Xue, G. Zheng & H. Yu. (2022). From narrative history to structural history: reflection and turn in the study of the history of Chinese martial arts since modern times. *Journal of Shanghai Institute of Physical Education* (09), 73-89. doi:10.16099/j.sus.2021.01.28.0002.