

# *Research on the Intervention of Swimming Training on College Students' Psychological Resilience*

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**Abstract:** Through literature data, questionnaire survey, mathematical statistics, logical reasoning and other research methods, the influence of swimming training on the psychological elasticity of college students is analyzed. The results show that the psychological resilience of college students is generally at a relatively high level, and there are significant differences in gender and grade variables. Introduce controlled swimming training activities as psychological training methods into psychological flexible counseling. In order to improve the psychological elasticity training effect, at the same time, the swimming instructor should have a certain psychological counseling ability in the swimming training instruction process, so as to improve the overall psychological elasticity level of college students and achieve a good swimming training instruction effect.

## **1. Introduction**

Swimming training holds an important position in college teaching and is a form of sports that students love. Swimming training not only allows students to strengthen their thinking on lifelong sports, but also allows students to exercise their bodies and release their psychology. Therefore, college students should not ignore swimming training.[1] They should actively participate in swimming training. Through swimming training, they can enhance their physique, find confidence, and relieve their mental burden. The purpose of this research is to let college students have a deep understanding of the value of swimming training and fitness, make college students' extracurricular life more colorful and more entertaining, and guide more students to actively participate in swimming training teams, and truly improve college students' body and mind Quality and taste of life.[2]

## **2. Theoretical Model of Psychological Elasticity**

Regarding the formation and development mechanism of psychological elasticity, researchers have formed corresponding psychological elasticity models through analysis from different perspectives. Among them, the most representative ones are the compensation model, challenge model and condition model proposed by Garmezy, Marten and Tellegen (1984) (Xi Juzhe, 2006). o Kumpfer proposed an integrated flexible framework based on previous research results, taking into account the external environment, individual internal and interaction issues, and well explained the causes, results and process of the adaptation results, which is very important for the psychological

Research in the field of resilience has had a great impact.<sup>[3-4]</sup>

### 3. Research Design

#### 3.1 Research Objects

Take a certain first-year and second-year college students who offer swimming training courses as the research object. Investigate their demographic characteristics, swimming training conditions and individual psychological elasticity, analyze the differences in the psychological elasticity of college students with different demographic characteristics and swimming training participation characteristics, and explore the impact of swimming training participation on the psychological elasticity of college students, in order to explore swimming training Means to interfere with the psychological resilience of college students provide the necessary basis.

#### 3.2 Research Tools

The Adolescent Mental Resilience Scale compiled by previous studies is used as a tool to measure the psychological resilience of college students. There are 27 items in the Adolescent Mental Resilience Scale, including five factors including goal focus, emotional control, positive cognition, family support, and interpersonal assistance. The internal consistency coefficient of the scale is 0.85. Self-compiled college student swimming training participation questionnaire, combined into “University Swimming Training Participation and Psychological Resilience Questionnaire”.

### 4. Results and Analysis

#### 4.1 Descriptive Statistics of College Students' Mental Resilience

According to statistics, it is found that the average score of psychological resilience of college students is 3.63, which is in a relatively high level. Among the five levels, the score of “positive cognition” (M=4.081 5) is the highest; followed by “family support” (M = 3.846 5) and “target focus” (M=3.653 9); The control score (M = 3. 286 5) was the lowest.

*Table 1 Psychological Resilience And Dimensional Scores of College Students*

dimension	average	Number of items	Average score of each question
Goal focused	18.271	5	3.655
Emotion control	19.720	6	3.288
Positive cognition	16.327	4	4.082
Family support	23.081	6	3.841
Interpersonal assistance	20.733	6	3.457
Resilience Scale	98.125	27	3.636

#### 4.2 Differences of Different Swimming Training Participation Characteristics on the Psychological Resilience of College Students

According to the homogeneity test of the variance, the homogeneity test has not reached significance, which is in line with the important assumption of the variance analysis-the homogeneity of the variance. It can be found from Table 2 that there is no significant difference in the psychological resilience of college students with different swimming training times and activity

intensity ( $P>0.05$ ); while there are very significant differences in different activity durations and selection of activity items ( $P<0.01$ ). After comparative analysis (see Table 4), the 95% confidence interval indicates that the difference between the two is significant (not including 0). The results show that: in the activity duration\_L, the group within half an hour, the group between half an hour and one hour are significantly better than the group over one hour, the group within half an hour and the group between half an hour and one hour There is no significant difference; in the selection of activity items, the net confrontation group and the contact confrontation group are significantly better than the individual project group, and there is no significant difference between the net confrontation group and the contact confrontation group.

*Table 2 Analysis of Variance of College Students' Psychological Elasticity*

Source of variation	SS	DF	MS	F 值	Sig.
Training times	144.448	2	72223	0.419	0.659
Training intensity	497.292	2	248.649	1.451	0.267
Participation time	2944.608	2	1472.308	8.938	0.001
Project selection	2583.039	2	1291.520	7.794	0.000

### 4.3 Correlation Analysis of Psychological Resilience

Correlation analysis shows that although psychological resilience is very significantly related to college students' gender, grade, swimming training time, and swimming training options, the correlation coefficient values of students' gender, grade and their psychological resilience are all less than 0.40. It shows that there is a low degree of correlation; while the correlation coefficients in swimming training participation time and swimming training item selection are both  $> 0.40$  and  $< 0.70$ . It shows that swimming training time, selection of swimming training items and mental flexibility are moderately related.

*Table 3 Correlation Matrix Between Psychological Resilience and College students' Gender, Age, Training Participation Time, and Project Selection*

relevance	Gender	Age	Participation time	Project selection	Resilience
Gender	1.001	/	/	/	/
Age	0.205	1.000	/	/	/
Participation time	0.267	0.113	1.002	/	/
Project selection	0.619	0.324	0.215	1.008	/
Resilience	-0.193	-0.223	-0.452	0.594	1.000

## 5. Conclusions and Recommendations

### 5.1 Conclusion

(1) The psychological resilience of college students is generally at a relatively high level. On its five levels, the level of "positive cognition" and "family support" is high, and the score of "emotional control" is low.

(2) There is no significant difference in the psychological resilience of college students with different swimming training times and activity intensity, but there are very significant differences in activity duration and activity item selection; in terms of activity duration, the group within one hour is significantly better. For the group of more than one hour, the group project group is obviously better than the individual project group in the selection of activity items.

(3) The swimming training duration and item selection of college students have no significant interaction effect on their psychological resilience. Undergraduates' psychological resilience is significantly lowly correlated with their gender and grade variables; there is a significant moderately correlated with swimming training time and swimming training selection variables.

## 5.2 Suggestions

(1) In terms of gender and grade, the psychological elasticity of college students is better than boys in the first grade, and better than in the second grade. This interesting research result is basically consistent at home and abroad. To explain this phenomenon, from the perspective of my country's traditional cultural background, the physiological characteristics of gender determine the disadvantaged status of girls, and girls must seek more social support to gain a foothold in society. This undoubtedly has a certain impact on the formation of girls' patience and toughness higher than boys' character characteristics; while the psychological flexibility of first grade students is better than that of second grade students[5]. A reasonable explanation should be that the first-year students have just graduated from middle school to college, and the enthusiasm and excitement in middle school has not diminished, and they still maintain a positive attitude toward things. They often see things positive, so its psychological flexibility is strong.

(2) In terms of swimming training time and swimming training selection variables, the group within one hour is better than the group over one hour, and the group event group is better than the individual event group. The reason for the analysis may be that within one hour of participating in swimming training, the students' mentality changes are not obvious, and the handling of incidents is normal. After one hour, as physical consumption increases, the emotional changes have occurred. Insufficient judgment and estimation of changes will easily lead to emotional imbalances, which will affect the results of dealing with difficulties; and the collective project team is better than the individual project team, perhaps because the collective project emphasizes communication and collaboration with peers, which helps to strengthen the individual Psychological resilience.

(3) The mental flexibility of college students is moderately correlated with swimming training time and swimming training selection variables. This research conclusion has positive significance for the exploration of using swimming training to participate in enhancing the psychological resilience of college students. Based on the conclusion that the participation time should be controlled within one hour; in the selection of items, more group sports events will have a positive impact on the psychological flexibility of college students. It is recommended to control the content and time of swimming training during psychological flexibility counseling and training. Ways, use swimming training participation as a means of psychological counseling to get better results. At the same time, in the swimming training instruction, the physical education teacher should master certain psychological counseling theoretical knowledge and methods, and apply it flexibly to the daily swimming training instruction practice. This is useful for enhancing the psychological flexibility of ordinary college students and realizing the teaching of physical education courses. The goal will play a positive role.

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