

Physical activities and psychological resilience on employment anxiety among Guangdong university graduates

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Abstract

Objective This study aims to explore the direct impact and interaction between physical activities and psychological resilience on university graduates' employment anxiety from the perspective of clinical psychology, and to examine the mediating effect of psychological resilience in the relationship between physical activities and employment anxiety. **Methods** A cross-sectional survey design was adopted, and a questionnaire survey was conducted on 373 university graduates from Guangdong Province using convenience sampling. Descriptive statistics, correlation analysis, stratified regression analysis, and mediation effect tests were performed using SPSS 26.0 and the PROCESS macro program. **Results** (1) university graduates' physical activities level ($r = -0.45$, $p < 0.001$) and psychological resilience ($r = -0.33$, $p < 0.001$) were both significantly negatively correlated with employment anxiety. (2) Stratified regression analysis showed that physical activities ($\beta = -0.32$, $p < 0.001$) and psychological resilience ($\beta = -0.28$, $p < 0.001$) independently and significantly negatively predicted employment anxiety. (3) Mediation effect analysis showed that psychological resilience played a partial mediating role between physical activities and employment anxiety, with a mediation effect value of -0.15, accounting for 32% of the total effect. **Conclusion** This study indicates that high levels of physical activities and strong psychological resilience are important protective factors for university graduates coping with employment anxiety. Physical activities can not only directly alleviate anxiety symptoms but also indirectly reduce employment anxiety by improving individuals' psychological resilience.

Keywords

University graduates; physical activities; psychological resilience; employment anxiety

1. Introduction

The number of university graduates has reached a high level, and the competition in

the job market is becoming increasingly fierce. As a result, "employment anxiety" has evolved from a situational reaction of individual students to a psychological phenomenon that is highly prevalent among recent graduates. It is usually manifested as persistent and excessive worry about the job search process and results, accompanied by a multidimensional symptom cluster such as autonomic nervous system dysfunction, cognitive impairment and behavioral avoidance [1]. Traditional clinical interventions for anxiety are mostly focused on cognitive behavioral therapy and drug therapy [2]. However, for the widespread employment anxiety at the subclinical level, it is particularly important to seek more universal, low-cost and easy-to-promote preventive intervention strategies. Against this background, physical activities as a healthy behavioral coping mode and psychological resilience as a positive personal trait have entered the research field of clinical psychology. Therefore, incorporating physical activities and psychological resilience into a unified framework and testing the theoretical path of "physical activities → improving resilience → alleviating employment anxiety" can not only fill the above research gaps and deepen the understanding of the formation and relief mechanism of university graduates' employment anxiety, but also provide a direct theoretical blueprint and empirical foundation for developing an efficient, feasible and contemporary university student-friendly "physiological-psychological" dual-module intervention program. This is both a logical extension of academic research and an inevitable choice to address real-world public mental health needs.

2. Research Subjects and Methods

2.1. Research Subjects

Using convenience sampling, from September to November 2025 (the key period for autumn recruitment of graduating students), one university each was selected from eastern, central, western, and northern Guangdong, and questionnaires were distributed to senior graduating students. Inclusion criteria: (1) full-time senior students; (2) actively seeking employment or planning to seek employment; (3) informed consent and voluntary participation. Exclusion criteria: (1) those who did not participate in job hunting due to reasons such as postgraduate entrance examination or going abroad; (2) those with a history of diagnosed mental disorders. A total of 450 questionnaires were distributed, and 373 valid questionnaires were returned, with an effective return rate of 82.9%.

2.2. Research Tools

Demographic variables were collected through questionnaires, which included information such as gender, major, only child status, Census register, and Family economic level. This study also used the PARS-3 Physical Fitness Rating Scale developed by Liang Deqing, the Psychological Resilience Scale translated and

revised by Wang Li et al., and the Employment Anxiety Scale developed by Zhang Yuzhu and Chen Zhongyong.

2.3. Analytical Methods

SPSS 26.0 software was used for data entry and statistical analysis. The relevant programs included descriptive statistics, one-way ANOVA, Pearson correlation analysis, and the SPSS PROCESS macro program (Model 4) developed by Hayes.

3. Results

3.1. Common Method Bias Test

Harman's one-way factorial test was used to conduct an exploratory factor analysis on all questionnaire items without rotation. The results showed that there were 8 factors with eigenvalues greater than 1, and the first factor explained 14.1 % of the variance, which was below the 40% critical threshold, indicating that there was no serious common method bias in this study.

3.2. Characteristics of the demographic distribution within the sample

As shown in Table 1 , the gender ratio of the participants was 34.6% male and 65.4% female. In terms of major, humanities accounted for 12.3%; science for 46.4%; engineering for 27.3%; medicine for 9.4%; and agriculture for 4.6%. Due to the national family planning policy, the proportion of only children was relatively high, with 301 participants (80.7%), and non-only children for 72 participants (19.3%). There were 247 participants with urban Census register (66.2%) and 126 participants with rural Census register (33.8%). Regarding family economic level, 90 participants (24.1%) had average conditions; 254 participants (68.1%) had moderate conditions; and 29 participants (7.8%) had relatively good conditions.

Table 1. Characteristics of the demographic distribution within the sample (N=373)

Items		N	%
Gender	Male	129	34.6%
	Female	244	65.4%
Major	Liberal arts	46	12.3%
	Science	173	46.4%
	Engineering	102	27.3%
	Medicine	35	9.4%
	Agriculture	17	4.6%
Only Child	Yes	301	80.7%
	No	72	19.3%
Census Register	Urban Area	247	66.2%
	Rural Area	126	33.8%
Family Economic Level	General	90	24.1%
	Medium	254	68.1%
	Better	29	7.8%

3.3. The differences evaluated by the Employment Anxiety scale when grouped by characteristic variables

As shown in Table 2, when respondents were grouped by major, Census register, and family economic level, there were significant differences in their assessments of the employment anxiety scale ($p < 0.001$), indicating statistical significance. When respondents were grouped by gender and only child status, there were no significant differences in their assessments of the employment anxiety scale.

Table 2. The differences evaluated by the Employment Anxiety scale when grouped by characteristic variables

Employment	t	p	Cohen's d
Gender	1.615	0.175	0.487
Major	2.746	<0.001	0.165
Only child	2.447	0.084	0.541
Census register	0.865	<0.001	0.706
Family economic level	3.142	<0.001	0.498

3.4. Descriptive statistics and correlation analysis of physical activities, psychological resilience and employment anxiety

Table 3 shows the mean (M), standard deviation (SD), and correlation matrix of physical activities, psychological resilience, and employment anxiety. The descriptive results show that the average amount of physical activities among university graduates is low ($M \pm SD = 22.51 \pm 18.45$). The large standard deviation indicates that the students' physical activities levels vary greatly. Good psychological resilience ($M \pm SD = 25.44 \pm 15.33$) and greater employment anxiety among university graduates ($M \pm SD = 74.75 \pm 26.87$). This study confirms the close relationship between physical activities, psychological resilience, and employment anxiety. First, there is a significant mutual promotion relationship between physical activities and psychological resilience ($r = 0.34, p < 0.001$), and physical activities is an important and effective way to build psychological resilience [3]. Second, there is a significant negative correlation between psychological resilience and employment anxiety ($r = -0.33, p < 0.001$), and students with high psychological resilience tend to have more positive core self-evaluation, thus experiencing lower employment anxiety [4]. Finally, there was also a significant negative correlation between physical activities and employment anxiety ($r = -0.45, p < 0.001$). These three significant correlations together constitute an integrated model for understanding employment anxiety among university graduates.

Table 3. Descriptive statistics and correlation analysis of physical activities, psychological resilience and employment anxiety (r)

Items	M $\pm$ SD	Physical activities	Psychological resilience	Employment anxiety
Physical activities	22.51 $\pm$ 18.45	1		
Psychological resilience	25.44 $\pm$ 15.33	0.34***	1	

Employment anxiety	74.75 ± 26.87	-0.45 ***	-0.33 ***	1
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Legend: **p<0.01, ***p<0.001, the same applies below.

3.5. Testing the Mediating Effect of Psychological Resilience

Using the SPSS PROCESS macro, Model 4 (simple mediation model) was selected. Bootstrap sampling (e.g., 5000 repeated samples) was employed to calculate the confidence interval (95% CI) of the mediation effect. Mediation effect analysis was conducted with physical activities as the independent variable, psychological resilience as the mediating variable, and employment anxiety as the dependent variable. The results are shown in Tables 4 and 5.

In the pathway “Physical activities → Employment anxiety”: The overall effect of physical activities on employment anxiety was examined (without including mediating variables). The direct effect of physical activities on employment anxiety was significant ($\beta = -0.32$, $p < 0.001$).

In the pathway “Physical activities → Psychological resilience”: physical activities has a significant positive predictive effect on psychological resilience ($\beta = 0.34$, $p < 0.001$).

In the pathway “Physical activities → Psychological resilience → Employment anxiety”: Both physical activities and psychological resilience were included in the regression equation to examine the effect of psychological resilience on employment anxiety, and the direct effect of physical activities on employment anxiety after controlling for psychological resilience. When both physical activities and psychological resilience were included in the prediction of employment anxiety, the direct predictive effect of physical activities on employment anxiety remained significant ($\beta = -0.32$, $p < 0.001$). The predictive effect of psychological resilience on employment anxiety was also significant ($\beta = -0.28$, $p < 0.001$).

Table 4. The mediating model test of psychological resilience between physical activities and employment anxiety

Regression equation		Fitting index			Coefficient significance	
Result variable	Predictor variable	R	R-s q	F(df)	β	t
Employment anxiety	Physical activities	0.46	0.32	50.96** *	-0.47	-8.93***
Psychological resilience	Physical activities	0.37	0.28	26.43** *	0.34	6.55***
Employment anxiety	Psychological resilience	0.56	0.47	45.57** *	-0.28	-6.65***
	Physical activities				-0.32	-4.82***

Table 5. Bootstrap analysis of significance test for mediation effect

Path	Non-standardized indirect effects	95%LL CI	95%U LCI
Total effect	-0.47	-0.24	-0.65
Physical activities→Employment anxiety	-0.32	-0.15	-0.53
Physical activities→Psychological resilience→Employment anxiety	-0.15	-0.07	-0.22

Mediating Effect: The Bootstrap test showed that the mediating effect of social support was -0.15, with a 95% bias-corrected confidence interval of [-0.22, -0.07], excluding 0, indicating a significant mediating effect. **Effect Size:** The mediating effect accounted for $-0.15 / -0.47 = 32\%$ of the total effect, as shown in Figure 1. **Conclusion :** Psychological resilience plays a partial mediating role between physical activities and employment anxiety. This means that 32% of the positive effect of physical activities on employment anxiety is achieved through the pathway of "enhancing psychological resilience".

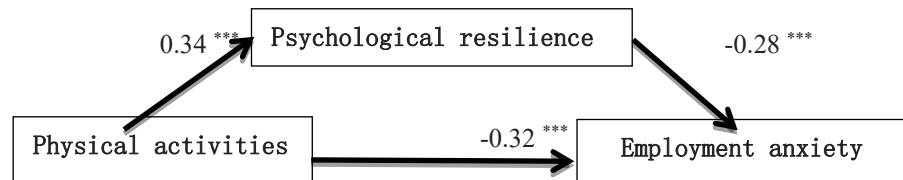


Figure 1. The chain mediating model between physical activities and employment anxiety among university graduates.

4. Discussion

Based on an integrated theoretical framework, this study verified the protective effect of physical activities and psychological resilience on employment anxiety among Chinese university graduates and revealed the partial mediating role of psychological resilience in the relationship between the two. The study found that both physical activities and psychological resilience are strong predictors of employment anxiety. The direct effect of physical activities ($\beta = -0.32$) supports its effectiveness as a tool for behavioral activation and emotion regulation. Maintaining regular exercise during job hunting can provide students with a structured daily schedule and controllable goals, effectively combating the sense of loss of control and meaninglessness brought about by anxiety [5]. Psychological resilience, as the strongest predictor ($\beta = -0.28$), highlights the core position of cultivating intrinsic psychological skills. It enables students to quickly adjust their mindset after being rejected and focus their attention on controllable factors rather than indulging in negative emotions, which reflects the cognitive restructuring skills emphasized in cognitive behavioral therapy [6]. This study reveals the intrinsic mechanism of "physical activities $\rightarrow$ improving psychological resilience $\rightarrow$ alleviating employment anxiety".

Expanding-constructing path: The challenges in physical activities are themselves miniature "adversity exposure training". Successfully coping with these challenges can continuously build a sense of accomplishment and control. These positive experiences gradually construct an individual's resilience, self-confidence, and optimism, namely psychological resilience [7].

Physiological-psychological pathway: In addition to the constructive role at the psychological level, physical activities may also provide underlying support for the improvement of psychological resilience through neurobiological mechanisms. Recent neuroscience

studies have shown that regular physical activities can significantly promote the neuroplasticity of the brain [8] , especially the enhancement of the function of the prefrontal cortex [9] , which may provide a neurobiological basis for the improvement of psychological resilience.

This study has some limitations: it relies on a self-report method; the sample is limited to university graduates; future evaluations could combine objective exercise data (such as fitness trackers) and clinical interviews .

In conclusion , university graduates' employment anxiety is influenced by both physical activities and psychological resilience. Physical activities, as a feasible and cost-effective behavioral strategy, not only directly alleviates employment anxiety, but more importantly, provides long-term psychological capital to withstand job-seeking pressures and setbacks by systematically building and enhancing individual psychological resilience. Therefore, in clinical practice and public health promotion aimed at alleviating university graduates' employment anxiety, we should strongly advocate a "mind-body synergy" intervention paradigm, organically combining physical activities with psychological resilience training. This approach addresses both the symptoms and the root causes, thus more effectively safeguarding university graduates' mental health and helping them smoothly navigate this crucial period of developmental transition.

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