

# ON THE CORRELATION BETWEEN JOB BURNOUT, MENTAL HEALTH AND PERSONALITY TRAITS OF COLLEGE PHYSICAL EDUCATION TEACHERS

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## SUMMARY

**Background:** Job Burnout includes three parts: emotional exhaustion, depersonalization and low personal achievement. Personality traits include “extraversion”, “sense of responsibility”, “openness”, “agreeableness” and “neuroticism”. Job burnout and personality traits are related to individual behavior orientation and mental health. The fixity of teachers’ profession makes it easy to produce job burnout. Therefore, in order to reduce the negative emotion and burnout psychology of college physical education teachers and improve their mental health level, this paper studies and discusses the relationship between job burnout, mental health and personality traits, and puts forward targeted suggestions for them.

**Subjects and methods:** The research take college physical education teachers as the research object, carries on the correlation analysis with the method of principal component analysis, the experimental time is three months, and with the help of mental health evaluation scale and SPSS20.0 tool to analyze and process the experimental data.

**Results:** The emotional exhaustion of physical education teachers is more serious, and the score of personal achievement is low. There is a significant negative correlation between extroversion and job burnout, and introverted teachers are more likely to have psychological problems and negative emotions.

**Conclusions:** There is a significant correlation between teachers’ personal characteristics and their job burnout. Physical education teachers should correctly treat the relationship between personality characteristics and their own career, reduce job burnout and get rid of negative emotions.

**Key words:** job burnout - mental health - personality traits - PE teacher personal – achievement - career orientation

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## INTRODUCTION

Job burnout includes three parts: emotional exhaustion, depersonalization and low personal achievement. Emotional exhaustion refers to the extreme fatigue of personal emotion, while depersonalization and low personal achievement refer to the impact on self-worth judgment and identity when individuals show a negative, negative or indifferent attitude towards service objects due to the influence of work environment and work content (Sang 2019). Due to the differences of cognitive level, age structure, educational background and social experience, different individuals have individual differences in their cognitive attitude towards work. Furthermore, in the long-term boring working environment, the degree of negative and negative emotions generated by their own work is also different (Choi et al. 2017). Mental health refers to that an individual still maintains a good emotional state and psychological quality under the interference of external things. Different types of personality traits will affect an individual’s personality representation, tolerance and mental health quality. The nature of teachers’ work makes it difficult for them to maintain their work enthusiasm in relatively repetitive work, and their work attitude has a great impact on their psychological status and emotional problems.

Different scholars have more research results on job burnout, mental health and personality traits, and also began to explore the relationship between the three, in

order to provide guiding suggestions for individual physical and mental health. By investigating the mediating role of meditation, empathy and gender between negative emotion and job burnout, Liu a found that the negative emotion of news media workers was positively correlated with their job burnout, Meditation and high-level empathy can effectively play an intermediary role in emotion regulation, and this intermediary relationship between women is more prominent. Therefore, it is believed that expressing appropriate empathy and strengthening psychological intervention in the face of pressure or negative emotional state can effectively reduce the job burnout of news media workers (Liu et al. 2021). Job burnout will not only affect the individual’s attitude towards work, but also have a close relationship with the individual’s behavior orientation and health level. Meng introduces the psychological contract theory to analyze and intervene the job burnout of university managers, and puts forward targeted improvement suggestions in order to improve the work enthusiasm of managers (Meng & Liu 2022). Onuigbo discussed the clinical benefits of rational emotional stress management treatment plan in reducing the level of job burnout symptoms and dysfunctional depression of special education teachers. The results show that positive psychological intervention can effectively alleviate teachers’ negative emotions and job burnout (Onuigbo et al. 2020). Kourtesis and Thomas believe that the quality of teaching level and sports facilities will affect the work enthusiasm and

professional evaluation satisfaction of college physical education teachers, and psychological burnout will occur under long-term psychological pressure (Kroupis et al. 2019). Çelik found that there is a negative correlation between teachers' self-efficacy and their level of job burnout. More serious job burnout will make teachers doubt their own work value, and then transfer this negative emotion to life (Çelik & Kahraman 2018).

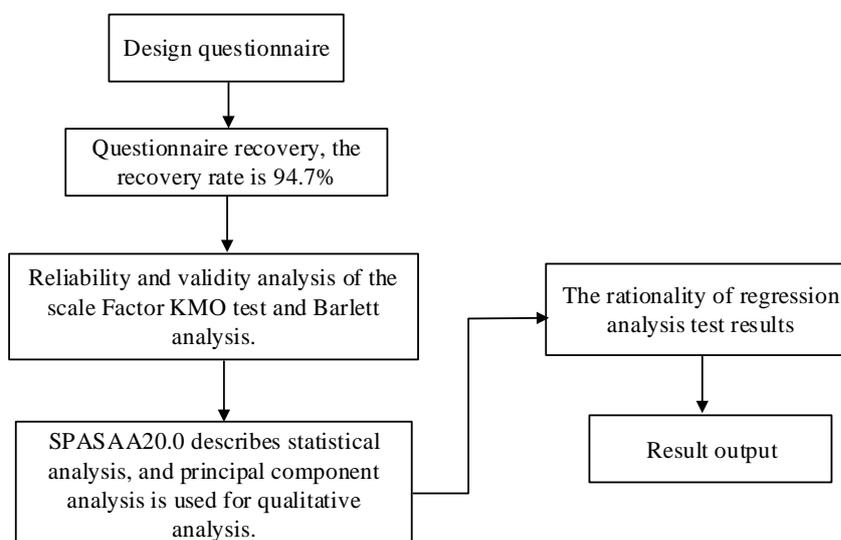
Although personality traits are mainly determined by genetic factors, they can still be properly intervened and guided by external interference and environmental stimulation. Job burnout is more likely to occur in the professional attributes of dealing with others, such as medical treatment, nursing, education and so on. Because of the relative stability and service nature of their profession, teachers are easy to produce job burnout in the long-term teaching process. Among them, the curriculum arrangement of college physical education teachers is carried out in one or two weeks, the reduction of teaching frequency and the lack of attention of students to physical education, so it is easy to produce job burnout, psychological problems and negative emotions. Teachers' job burnout not only affects their own work and attitude, but also puzzles their quality and

level of life and interpersonal communication. Therefore, studying the relationship between job burnout, mental health and personality traits can effectively reveal the relationship between the three, provide certain guiding significance for school managers and physical education teachers, and improve the mental health level and teaching quality of college physical education teachers.

## SUBJECTS AND METHODS

### Study setting

Mental health involves good emotional state, prevention of mental disorders, treatment and rehabilitation of mental diseases. Its standard refers to that all aspects of psychology and its activity process are in a continuous and positive psychological state. In this state, the subject can make good adaptation and give full play to its physical and mental potential. Mental health is one of the evaluation criteria of individual health status. Whether we can correctly deal with the changes and stimuli of the surrounding environment and whether we can have good mental endurance and quality is an important aspect of evaluating the level of mental health.



**Figure 1.** Design idea of experiment

There are many factors affecting mental health, such as the interference of objective environment, the level of psychological quality, self-cognition and psychological conflict. The emotional value and psychological attitude of different individuals will affect the normal development of their mental health, and personality is an important factor affecting individual mental health. Personality traits, also known as the “Big Five personality”, include “extraversion”, “responsibility”, and “openness to experience”, “agreeableness” and “neuroticism”. Extroversion refers to an individual's strong social ability, self-confidence and eloquence. Sense of responsibility refers to self-discipline, strong organization and high achievement orientation. The degree of emotional stability refers to the degree of emotional stability. Openness is reflected in a strong

thirst for knowledge and a preference for novelty. Agreeableness refers to being willing to help others, being good at cooperation and sympathizing with others. Different personality traits will make individuals have different personality characteristics and emotional performance (Vincenza et al.2018). Different individuals show different personality traits. Although personality traits are mainly determined by genetic factors, they can still be properly intervened and guided by external interference and environmental stimulation. Firstly, the study compiled relevant questionnaires with the help of Maslach Burnout Inventory, personality trait measurement scale and Symptom Checklist 90 (SCL-90), the job burnout scale includes three sub items: emotional exhaustion, depersonalization and reduced personal achievement, with a total of 21 questions (Vincenza et al.

2017). The scale adopts Likert's 7-point rating. In terms of emotional exhaustion and depersonalization, high score represents more serious job burnout, while in the dimension of reduced personal achievement, reverse scoring is adopted, and low score represents more serious job burnout. Which set 21 questions (Temam et al. 2019). This paper studies the stratified cluster random sampling method, and randomly selects 200 PE teachers from three universities of different sizes as the research object. Explain the purpose of this study to the respondents before the beginning of the questionnaire, and then collect the data of the subjects' work attitude, value pursuit, mental health status and personality traits. After the experiment, with the help of SPSS20.0 system and principal component analysis to explore and process the relationship between job burnout, mental health and personality traits. The research ideas are shown in Figure 1.

In factor analysis, KMO value is used to determine whether there is a close relationship between the questions in the questionnaire, that is, KMO is greater than 0.9, indicating that the questionnaire design is very suitable (Jin & Song 2020). KMO is 0.7-0.9, indicating that the questionnaire design is suitable. KMO is 0.6-0.7, indicating that the questionnaire design is not suitable. When KMO is less than 0.6, it indicates that the questionnaire design is not suitable (Kim 2018). Bartlett value tests whether the correlation coefficient is significant. If it is significant (i.e., sig. < 0.05), the questionnaire is suitable for exploratory factor analysis. After testing the reliability and validity of the questionnaire, the data can be sorted and analyzed in order to obtain the experimental results and provide intervention and guidance suggestions for the mental health status and level of college physical education teachers.

### Design

After sorting out the questionnaire data and the test scale, the difference data is sorted out with Excel tool

$$\left\{ \begin{array}{l} \Pr ob(y = 0|X) = \Pr ob(y^* \leq \alpha_1 | X) = \Pr ob(\beta X + \varepsilon \leq \alpha_1 | X) = \phi(\alpha_1 - \beta X) \\ \Pr ob(y = 1|X) = \Pr ob(\alpha_1 \leq y^* \leq \alpha_2 | X) \\ \qquad \qquad \qquad = \Pr ob(\alpha_1 < \beta X + \varepsilon \leq \alpha_2 | X) = \phi(\alpha_2 - \beta X) - \phi(\alpha_1 - \beta X) \\ \dots \\ \Pr ob(y = J|X) = \Pr ob(y^* > \alpha_J | X) = 1 - \phi(\alpha_J - \beta X) \end{array} \right. \quad (2)$$

In formula (2), it  $\phi$  is the cumulative density function of standard normal distribution and  $\alpha_i$  is unknown segmentation point.

### RESULTS

There are also great differences in the mental health tolerance and adjustment ability of college teachers of

**Table 1.** Ession analysis test coefficient of correlation between psychological capital and professional ethics level under

and imported into SPSS20.0 statistical software to statistically analyze the score and evaluation changes, and determine whether it conforms to the normal distribution (Zou 2020). If the measurement data conforms to the normal distribution, it shall be expressed in the way of mean standard deviation, that is, the difference between measurement data groups shall be tested by independent sample t-test, the significance level shall be specified, and the critical value shall be obtained according to it.  $P < 0.05$  indicates that the difference is statistically significant (Park et al. 2017). According to the sorting of the results, the influencing factors are quantified and compared with the help of Likert scale. The influence values of specific quantitative factors from 0 to 4 are used. 0 indicates no, 1 indicates slight influence, 2 indicates general influence, 3 indicates obvious influence and 4 indicates comprehensive influence. The reliability and validity of the questionnaire have passed the test, and the sample of the scale is suitable for factor analysis. The variance interpretation rate of principal component analysis on the performance of mental health problems of college physical education teachers is more than 60%. Subsequently, the influence factors of three-dimensional degree are empirically analyzed with the help of ordered probity model. The specific form of this model is shown in formula (1) (Bansal 2017).

$$y = \beta X + \varepsilon, \varepsilon | X \square Normal(0,1)$$

$$\rightarrow \begin{cases} y = 0, \text{if } y^* \leq \alpha_1 \\ y = 1, \text{if } \alpha_1 \leq y^* \leq \alpha_2 \\ \dots \\ y = J, \text{if } y^* > \alpha_J \end{cases} \quad (1)$$

In formula (1),  $y$  is dependent variable and  $X$  explanatory variable. The probability of  $y$  is shown in equation (2).

different genders, which will show different degrees of work attitude and value standards, and psychological slack will occur under the influence of serious psychological problems (Sun 2020). The study tested the correlation between mental health and job burnout of college physical education teachers of different genders. The results are shown in Table 1.

different gender

Gender	Model	Non-standardized coefficient	Standard error	Standard coefficient	t	Sig.
Man	Constant	3.103	0.068	-	46.315	0.000
	Job burnout	0.416	0.107	0.285**	3.957	0.000
Woman	Constant	3.184	0.062	-	52.608	0.000
	Job burnout	0.678	0.075	0.553**	9.204	0.000

Note: \*\* is significantly correlated at the level of 0.01 (bilateral).

In Table 1, the results of regression analysis showed that the standardized regression coefficients of job burnout on mental health of men and women were 0.285 ( $t = 3.957, P = 0.000 < 0.05$ ) and 0.553 ( $t = 9.204, P = 0.000 < 0.05$ ) respectively, and the non-standardized coefficients and standard errors of men were 0.416 and 0.107 respectively, and the non-standardized coefficients and standard errors of women were 0.678 and 0.075 respectively. The above results showed that the impact of job burnout on mental health of women was higher than

that of men. The reason is that women's mind is more delicate, vulnerable to the influence of the external environment, the richness and perception of things are more obvious, and then it is easier to lose interest in repeated simple work for a long time, resulting in job burnout. Then, it makes a correlation analysis between job burnout and personality traits of physical education teachers, and makes statistics on the data. The results are shown in Table 2.

**Table 2.** Correlation between job burnout and personality traits of physical education teachers

Variable	Emotional exhaustion	Dehumanization	Reduced sense of personal achievement
Extraversion	-0.32*	-0.22	-0.23
Openness	-0.49*	-0.31	0.44
Responsibility	-0.32*	0.34	-0.37
Agreeableness	0.42*	-0.22	-0.24
Nervous	0.68	0.79	0.25

Note: "\*"  $P < 0.05$ , the correlation was statistically significant.

Personality trait is a psychological structure that can make people's behavior tendency show a kind of persistence, stability and consistency. It is the basic factor of personality composition. Different personality traits show different behavior mechanisms and personality characteristics, and then show different psychological mechanisms at work. It can be seen from Table 2 that physical education teachers have serious emotional exhaustion and low scores of personal achievements, and there is a significant negative correlation between extraversion and job burnout. The factors of openness and job burnout have a significant negative correlation, that is, physical education teachers with openness have a strong acceptance and tolerance of things, and can effectively adjust and control their own emotions. Therefore, there is little possibility of job burnout. The reason is that the characteristics of extraversion are self-confidence, autonomy, activity and active exploration. The individual characteristics of open personality are good at creativity, strong curiosity and imagination in work, and have their own independent judgment on anything. In the education industry, physical education teachers with open personality traits have high enthusiasm in their work. They can constantly explore new teaching methods in physical education classroom teaching and practice in classroom teaching. Classroom teaching has achieved good results, which is affirmed by students, easy to accept new things and strong innovation ability. And its better classroom effect can effectively bring teachers positive value feedback,

make them continuously improve their recognition of their own work value and work ability, and then show a more positive work attitude, form positive two-way feedback with teaching results, which is not easy to produce job burnout, and have a high sense of personal achievement. There is a significant negative correlation between personality agreeableness and job burnout, and a significant positive correlation between anxiety and emotional exhaustion. The reason is that physical education teachers with pleasant characteristics are generally mild in character, good at cooperation, have a good relationship with colleagues and students, are not easy to cause contradictions and conflicts, can patiently answer students' questions and help students make progress, so they are easy to be affirmed and recognized by students and have a high sense of personal achievement. Neurotic individuals are mostly characterized by negative personality characteristics such as anxiety, tension, loneliness, coldness, hostility, strangeness and Emotionalization. Moreover, anxiety is easy to cause mood fluctuations and affect their work enthusiasm, which makes it difficult to complete their own work. There is less communication with students, which affects the classroom teaching atmosphere to a certain extent. Negative evaluation will make PE teachers doubt their work value, then lead to job burnout. And the results show that. Introverted teachers are more likely to have psychological problems and negative emotions. After psychological intervention, their mood improvement is shown in Table 3.

**Table 3.** Mental health improvement of introverted teachers

Before and after intervention	Languid mood	Positioning cognition	Interpersonal communication
Before intervention	26.74±1.26	13.46±1.69	7.83±1.56
After intervention	12.37±1.44	25.43±1.67	19.38±1.20
<i>P</i>	0.000	0.036	0.025

The negative impact of job burnout on the psychology of physical education teachers is greater than the physical harm. In serious cases, it will also lead to physical diseases and the decline of physical quality, resulting in emotional imbalance and psychological obstacles. Long term job burnout is easy to cause physical education teachers to have depressive symptoms, anxiety and physical symptoms, show negative emotions and psychological problems such as sadness, emptiness, despair, helplessness, anxiety and low energy, and show slack, negative and other working attitudes and values at work, develop unhealthy living habits and psychological conditions, and have a negative impact on the physical and mental health and working relationship of college physical education teachers. Introverted teachers are more inclined to pay attention to their own internal world. They are more restrained and shyer, and are more peaceful in dealing with others. They are not suitable for others to conflict with them. However, when teachers with introverted characteristics are misunderstood by others, they will question their own personality and work value. In the long run, they are easy to deviate from their own personality and cause psychological problems and negative emotions, such as anxiety, mental confusion and so on. It can be seen from table 4 that after psychological and emotional guidance and intervention, the burnout of introverted teachers decreased significantly before and after the experiment, and the score decreased from 26.74±1.26 to 12.37±1.44, with a decrease of more than 10 points. The data had significant statistical difference ( $P = 0.000 < 0.05$ ). At the same time, after targeted counseling on the psychological problems and negative emotions of introverted teachers, the score of teachers' self-positioning cognition increased from 13.46±1.69 to 25.43±1.67, with an increase of 12 points, and the score of interpersonal communication ability increased from 7.83±1.56 to 19.38±1.20, with an increase of 12 points. There was significant statistical difference before and after the experiment ( $P < 0.05$ ).

## CONCLUSIONS

There is an important relationship between teachers' personality traits and their job burnout. There are differences in work attitude and pressure resistance shown by different personalities. At the same time, job burnout in a non-serious degree will have an impact mechanism on the mental health of college physical education teachers at different levels. Therefore, in order to effectively improve the psychological level and self-efficacy of college physical education teachers and

reduce their negative emotions caused by work, this study explores the correlation between college physical education teachers' psychological burnout, mental health and personality traits. The results show that the standardized regression coefficients of job burnout on mental health of men and women are 0.285 ( $t = 3.957, P = 0.000 < 0.05$ ) and 0.553 ( $t = 9.204, P = 0.000 < 0.05$ ) respectively. The non-standardized coefficient of men (0.416) is lower than that of women (0.678), and the standard error of men (0.107) is higher than that of women (0.075). It shows that women's job burnout has a higher impact on mental health than men. And PE Teachers' emotional exhaustion is more serious and their personal sense of achievement score is low. There is a significant negative correlation between extraversion, openness and job burnout. Introversion teachers are more likely to have psychological problems and negative emotions. After the intervention of the psychological status of introverted teachers, their burnout decreased significantly before and after the experiment, and their score decreased from 26.74±1.26 to 12.3 ±1.44, with a decrease of more than 10 points. The data had significant statistical difference ( $P < 0.05$ ). The score of teachers' self-positioning cognition increased from 13.46±1.69 to 25.43±1.67, with an increase of 12 points. The score of interpersonal communication ability increased from 7.83±1.56 to 19.38±1.20, with an increase of 12 points. The data before and after the experiment had significant statistical differences ( $P < 0.05$ ), and the dimensional data before and after the intervention had significant statistical differences ( $P < 0.05$ ). When physical education teachers have job burnout in their work, they should constantly adjust their state psychologically, and have positive emotional experience and confidence in their own teaching career, correctly treat the relationship between personality traits and their profession, improve their professional ability and level, and realize their own career orientation, so as to reduce job burnout and get rid of negative emotions. School managers should timely help college physical education teachers with job burnout realize their emotional exhaustion, de-personalization and low sense of achievement, and make countermeasures and improvement measures, pay attention to the attention to the mental health of college teachers, stimulate the work enthusiasm of physical education teachers, and make a good connection and communication between physical education teachers and students. When formulating intervention measures to reduce teachers' Job Burnout and negative emotions, we should take into account the differences and emotions shown by different personality traits, which vary from person to person and change over time, so as to further

improve teachers' mental health and working ability.

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**Contribution of individual authors:**

Xiao Ren: conception and design of the manuscript and interpretation of data, literature searches and analyses, clinical evaluations, manuscript preparation and writing the paper;

Yanzhang Wang: made substantial contributions to conception and design, literature searches and analyses, participated in revising the article and gave final approval of the version to be submitted.

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