

Research on the correlation between high school students' self-efficacy and physical activities

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Abstract: Based on the self-efficacy theory and combined with the five-factor model (big five personality theory), this study adopts the method of collective questionnaire survey to analyze the correlations among self-efficacy, personality traits of high school students and physical activities. The results show that: the self-efficacy of high school students has a significant correlation with their personality traits; the self-efficacy of high school students is correlated with the status of their physical activities; the higher the self-efficacy of high school students is, the more their personality traits tend to be extraversion and openness, and high school students with high self-efficacy also prefer collective activities or challenging physical activities.

Key words: high school students; self-efficacy; personality traits; physical activities

1 Introduction

Self-efficacy is an important concept proposed by Bandura, a famous American psychologist in the 20th century. Self-efficacy refers to an individual's judgment of ability, belief, or subjective self-control and perception regarding whether he or she can complete an activity at a certain level. The physical and mental health of high school students and its impact on their lives and studies have attracted extensive attention in the education field. The efficiency of learning and the state of life are closely related to self-efficacy. By improving self-efficacy, not only can the efficiency of knowledge acquisition be enhanced, but also learning confidence can be increased, the psychological state can be improved, which is beneficial to the all-round development of the individual [1]. The issue of self-efficacy will surely become the theme and focus of research in the field of education in China at the current stage. Personality traits make great contributions to academic performance. Among them, conscientiousness and agreeableness are positively correlated with all learning styles, while emotional instability is inversely correlated with all learning styles. In addition, extraversion and openness are directly proportional to the carefully-processed learning style. For high school students, understanding their psychological traits is of great significance. In fact, high school students in China not only face problems with education in knowledge and mental health, but also have physical health problems emerging under the environment of exam-oriented education for many years [2]. In recent years, the country has actively advocated comprehensive education and quality education, especially for primary and middle school students, which has received a strong response from families, schools and society. Therefore, the physical activities of middle school students have received widespread attention. In addition, the application of the self-efficacy theory is also beneficial to the physical education of high school students. Through investigation and

research, we can understand the current situation of high school students' self-efficacy and the impact of physical activities on self-efficacy, so as to provide a theoretical basis for the physical and mental health of students.

2 Research objects and methods

2.1 Research objects

A total of 139 students from two high school classes were randomly selected, covering key and regular classes, and including both urban and rural students. 136 questionnaires were retrieved in the test. 16 students with invalid questionnaires were excluded, and finally 120 valid questionnaires were retrieved, with an effective recovery rate of 88.2%. Among them, there were 65 males and 55 females, 70 urban students and 50 rural students.

2.2 Research methods

This study adopted collective questionnaire tests. All questionnaires were anonymous. Unified instructions were used, and each student was required to complete the questionnaire independently. After collecting questionnaires and obtaining survey results, we conducted statistical analysis on the obtained data. Through SPSS 29.0 software, T-tests and correlation analysis methods were used to obtain the results.

3 Research results and analysis

3.1 Physical activity status of high school students

Taking 120 high school students as the research objects, this study analyzed whether there are differences in the daily physical activity status between high school boys and girls. Through the survey, it was found that there was no significant difference between male and female students in the status of individual physical activities, but there were significant differences in collective activities and extremely significant differences in challenging activities. Boys had higher scores than girls in collective and challenging activities, indicating that boys are more inclined to participate in collective and challenging activities than girls. In high school physical education, teachers can strengthen guidance for girls to encourage them to participate more in collective and challenging activities, which will help improve girl's cooperation ability and the spirit of challenging new things. Studies have shown that sports can change a person's mood [3]. The degree of psychological stress distress among adolescents who often participate in sports is significantly lower than that among those who do not often participate in sports activities [4]. Therefore, in the face of the exam-oriented education of high school students, we should attach importance to their physical education, encourage high school students to engage in regular physical activities, and also teach students in accordance with their aptitude.

3.2 Comparison of high school students' self-efficacy

3.2.1 Comparison of self-efficacy among high school students of different genders

Through the survey, it was found that there was no significant difference in self-efficacy between high school students of different genders. Self-efficacy refers to the degree of confidence that people have in their ability to use their skills to accomplish a certain work behaviors. This degree of confidence is related to high school students' own abilities and has nothing to do with gender. Since there is not much overall difference in self-efficacy between male and female students, the gender issue can be ignored when formulating a certain plan to improve high school students' self-efficacy.

3.2.2 Comparison of self-efficacy of urban and rural students

Through the survey, it was found that there was an extremely significant difference in self-efficacy between urban and rural students. Urban students had higher self-efficacy than rural students. Self-efficacy had a direct impact on academic performance. Urban students had received good education since childhood and had diverse learning resources such as libraries, museums, and various activities they could often participate in. They had broader knowledge and more advanced

insights. They had advantages over rural students both in life and in study. These were the reasons for the high self-efficacy of urban students [4].

3.2.3 Relationship between self-efficacy and personality traits

Through data analysis, it was found that self-efficacy had an extremely significant positive correlation with extraversion and openness among the big five personality traits, a significant negative correlation with agreeableness, and no obvious correlation with conscientiousness and neuroticism. The traits of agreeableness include trust, straightforwardness, altruism, compliance, modesty, and empathy. The more agreeable a person is, the stronger the degree of compliance with others may be, and the corresponding self-efficacy is lower. This is the reason for the negative correlation between self-efficacy and agreeableness. Extraversion personality traits usually show characteristics such as enthusiasm, sociability, decisiveness, activity, adventure, and optimism. These characteristics are conducive to improving a person's self-confidence. Openness includes active imagination, aesthetic sensitivity, concentration on inner feelings, preference for variety, and curiosity for knowledge. Both extraversion and openness personality traits correspond to a positive mental state, and the corresponding self-efficacy will also be relatively high.

3.2.4 The relationship between self-efficacy and physical activities

Through data analysis to study the correlation between high school students' self-efficacy and physical activity status, it was found that there was an extremely significant positive correlation between self-efficacy and collective activities and challenging activities, and a significant negative correlation between individual activities and students' self-efficacy. Students who prefer individual activities may lack confidence in achieving their goals, so their self-efficacy is relatively low. In collective activities, students can not only display their strengths well but also feel the spirit of unity in cooperation with others. Students who like challenging activities believe in their abilities, strive to achieve their goals, and can experience the joy of success. Relevant research pointed out that the higher the self-efficacy, the higher the degree of effort. High school students who like collective activities and challenging activities will have higher self-efficacy.

4 Conclusion and suggestions

The research results of this paper show that, in terms of high school students' physical activity situation, they generally prefer collective activities. Only different genders have different preferences for collective activities. Boys are more inclined to participate in collective and challenging activities than girls, and there is no significant difference in individual activities. There is no significant difference in self-efficacy between boys and girls, indicating that the factors determining self-efficacy have nothing to do with gender. Through our research on urban and rural students, we found that there were obvious differences in self-efficacy between urban and rural students. Urban students had higher self-efficacy. Rural students could not be compared with urban students in terms of both life and education. Urban students were more extroverted and open-minded than rural students, had a more positive attitude, and were more physically and mentally healthy. Urban students' academic performance was better than that of rural students. In the study of self-efficacy and personality traits, it was found that self-efficacy had a significant positive correlation with extraversion and openness among the big five personality traits, a negative correlation with agreeableness, and no correlation with conscientiousness and neuroticism. In addition, students with high self-efficacy preferred collective activities and challenging activities.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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