

The Prosocial Tendency of Athletes in Different Sports Training Items to Cope with Social Exclusion

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Abstract: Prosocial tendencies are closely related to athletes' performance in sports involving cooperation and competition. Previous experiments have shown that individuals who experience neglect-type social rejection in group living exhibit altruistic prosocial behaviors. This experiment will employ Cyberball as a manipulation of social exclusion interventions. This paper mainly discusses the degree of altruistic prosocial behavior when subjects are socially excluded. In addition, previous studies have shown differences in personality traits between individual athletes and group athletes, and found that group athletes exhibit more social traits than individual athletes. The purpose of this study is to investigate whether group athletes will show more altruistic prosocial tendencies than individual athletes and non-athletes when encountering social rejection, and how the group athletes, individual athletes and non-athletes react differently when encountering social rejection. This study provides a basis for future exploration of how to improve athletes' anti-rejection ability and prosocial behavior through psychological intervention, which has far-reaching implications for optimizing team cooperation and improving competitive performance.

Keywords: Social exclusion, Prosocial tendency, Cooperation, Athletes' training items.

1. Introduction

Social Exclusion refers to a common and negative social phenomenon, in which individuals are ignored, isolated, rejected and excluded by others or groups [1], without a sense of belonging and identity. Prosocial behavior is defined as the intention and behavior of "positive consideration of the benefits of others", that is, if other factors remain unchanged, an individual wishes to increase the benefits of others, it is believed that the individual shows altruistic preference. Prosocial tendencies are the tendency to voluntarily engage in behaviors that benefit others, such as helping, sharing, and comforting behaviors [2][3][4]. Social exclusion has been shown to have different effects on the prosocial tendencies of excluded persons under certain conditions [5].

Previous studies have shown that exercise can improve physical pain, and the mechanism of action of physical pain and social pain is similar, and physical pain and social pain are inseparable, so exercise may also improve social pain. Therefore, athletes and non-athletes are selected as study participants. Then, can the introduction of sports intervention also play a role in changing the effects of social rejection? However, the role of exercise may have different effects depending on different sports training items. Previous studies have shown that athletes have significantly higher scores on extroversion and sociality than individual athletes [6]. It can be concluded that the personality traits

of athletes are different in individual and team sports. In the Big Five personality test, the extroversion score of the college students majoring in physical education is high, indicating that the college students majoring in physical education are enthusiastic and ready to help others. Trust as an interpersonal factor can help individuals rely on others more easily and develop group activities and relationships, while team sports provide a suitable basis for achieving this trait, altruism is another interpersonal factor, and this tendency to assist prepares individuals to cooperate in team activities.

In sports activities, team sports lay the foundation for the realization of the two psychological characteristics of trust and altruism better than individual sports, indicating again that team sports athletes are more social than individual sports athletes, and there are differences between team athletes and individual and athlete personality characteristics [5]. In all sports, individual athletes use more imaging and self-talk skills than team athletes, possibly because individual athletes' success depends only on their performance, these athletes have lower relaxation and higher negative thinking than team athletes, and team athletes' success depends on the performance of all team members [7]. So team athletes tend to be more focused on group performance and tend to strengthen bonds with others. Participation in sports can effectively enlighten individuals' social awareness and develop their social skills. In sports, different sports events and different modes of development enable participants to have different social experiences and form different social attitudes [8]. Compared with individual athletes, team athletes receive more attention from teammates during sports. It also involves more situations of cooperation with others. Long-term exposure to this kind of group environment enhances the awareness of group belonging and the awareness of forming friendly interpersonal relationships. Based on the above discussion, long-term effective physical exercise by team athletes and individual athletes is equivalent to different types of long-term sports intervention by the athletes themselves [9]. These different types of sports intervention may lead to different mindsets and coping strategies of individuals in social aspects, and may lead to different reactions when they face social rejection [10].

The Cyberball experimental paradigm is an experiment mainly conducted in the form of passing. It simulates the passing of a team in the process of ball games, and manipulates the social rejection of the subjects by setting the passing number. Considering that the process of sports is often accompanied by cooperation and exclusion, and the team athletes recruited in this experiment are all ball players (basketball players, volleyball players, soccer players, etc.), the Cyberball experimental manipulation method can more effectively improve the manipulation effect of social exclusion. In summary, the main purpose of this study is to explore whether team athletes, individual athletes and non-athletes will show different degrees of prosocial tendencies after social rejection when they encounter social rejection caused by Cyberball intervention.

2. Method

2.1. Participant

This experiment combines the Cyberball paradigm [11] of previous studies that effectively manipulated social exclusion and altruistic tendencies. The expected sample size was calculated using G*Power 3.1.9.7 before the data were collected. The design of the experiment was based on the F-test of one-way ANOVA. The required sample size for each group was 53 when the power was 0.8, the significance was 0.05, and the effect was 0.25.

In the actual study, a total of 32 adults without exercise habits were recruited through the social exclusion level questionnaire of college students with an average score of 3 as the standard, and 16 individual athletes (individual sports were divided into boxing, swimming, sailing, track, running etc.) and 18 team athletes (group sports were divided into volleyball, basketball, soccer, etc.). A total of 66 participants (21 males) were aged 19-30 years ($M = 18.6 \pm 1.06SD$). All the subjects were native

Chinese speakers, right-handed, normal visual acuity or corrected visual acuity, and had a certain foundation of arithmetic ability. Among them, the athletic level of the athletes was China National second-level athletes or above. All subjects filled in the informed consent form before the experiment, knew the potential benefits and risks of the experiment, volunteered to participate in the experiment, and received monetary remuneration after the experiment.

2.2. Procedure

This The experiment was a single-factor three-level study inter-subject design. Independent variables are the effects of different sports training items. The dependent variable was the amount of money decision allocation after social exclusion, which was measured by the choice allocation method in the decision allocation after the operation.

This experiment is divided into three parts: the social exclusion intervention controlled by Cyberball, the social exclusion operation test, the cooperative calculation task and money allocation decision experiment. The participants were divided into three groups (individual athlete group vs. team athlete group vs. no exercise habit group).

Before the experiment began, any two subjects of the same sports type (individual, group, no exercise) came to the laboratory at the same time. The participants were told that in the next part, they would play a game of throwing a ball on the line with two other connected players. In fact, the other two online players are virtual players and do not exist.

In the Part 1 of the experiment, two subjects were separated from each other in the same room, unable to see each other. The subjects completed the Cyberball ball game (Figure 1 a) with a total of 40 passing games through the computer item, in which the number of catches did not exceed 8 times (catch rate was less than 20%), and entered the rest session after the game was over.

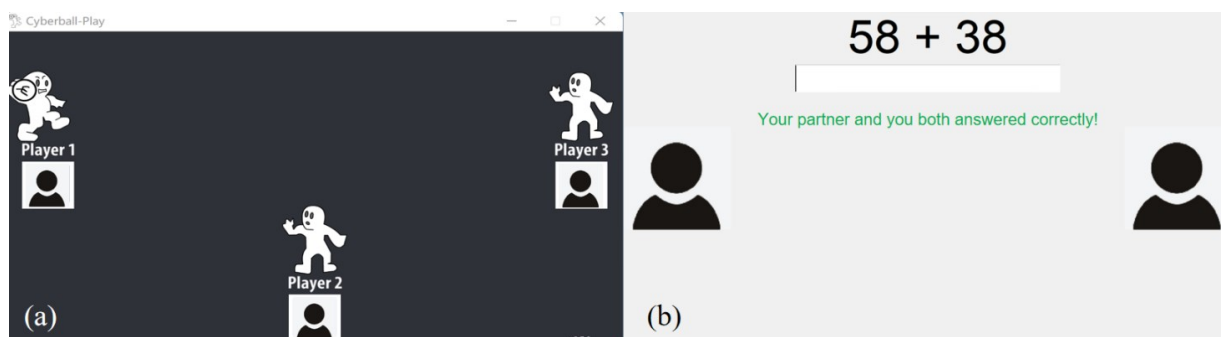


Figure 1: (a) Cyberball ball game; (b) Cooperative calculation task.

In the Part 2 of the experiment, after playing the ball game and resting for 2 minutes, participants completed a social exclusion manipulation test questionnaire using three manipulation tests matching the Cyberball game (e.g. "I feel ignored by other players") and needs-threat questionnaires [12][1] Composition. The Chinese version of this questionnaire is based on the translation [13], and has good reliability and validity. One participant who did not feel social rejection was screened out through the operation test questionnaire. In the remaining subjects, the results showed that the participant believed that the player who threw the ball with him really existed, and felt that he was socially rejected in the previous passing game.

In the Part 3 of the experiment, participants will complete a cooperative calculation task and a money allocation decision task, which will be completed 10 times per round, a total of 4 rounds. The task is divided into two sessions. In session 1, the subjects need to complete a calculation question (the result is addition and subtraction within 100-200), and the subjects need to input numbers through the keyboard to answer (Figure 1 b). The subjects will be told to complete the calculation and selection

with the highest possible accuracy and the shortest possible time, and they will be told that this is a cooperative process, and the subjects need to complete the calculation questions correctly with their "partner" (the "partner" does not actually exist and answers correctly 8 times in each round) before they can enter the next assignment. In session 2, the participant, as the allocator, selected one of three options to determine the amount of money score for himself and his "partner" for the round (the participant was told that this score was related to the amount of the subject's fee). As shown in Figure 1 b, one of the options is the fair option (10 points for oneself and 10 points for "partner"), the other is the unfair option for advantages (12 points for oneself and 8 points for "partner"), and the other is the unfair option for disadvantages (8 points for oneself and 12 points for "partner"). Reference for option setting [10]. The subjects were given 1min rest time between each two rounds, a total of 3 times. At the end of the experiment, the participants were given an explanation of the deception and got paid.

3. Result

The dependent variable of the experiment was the degree to which the subjects' interest decisions were assigned options, a measure based on the choices they made in session 2 of each task in Part 3 of the experiment. In session 2 of each task, the participants chose a distribution scheme in which they would allocate some of the 20 money points to themselves and the remaining money points to each other. We calculated the sum of the sum of money scores allocated to each other in the selection allocation scheme of each task and the average number of decision allocation times made by the subject for subsequent data analysis and statistical calculation.

The results of single-factor ANOVA analysis showed (Figure 2) that the prosocial tendency of people in different sports training items after social exclusion was significantly different ($F[2,65]=4.066, p=0.021$), and the prosocial tendency of people in team sports training items after social exclusion intervention was significantly higher than that of people without sports training habits ($t[1,49]=0.1731, p=0.027$).

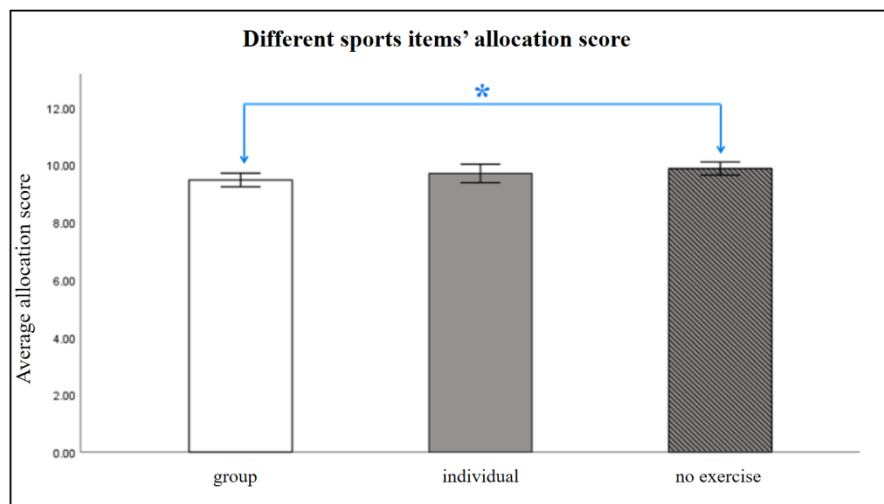


Figure 2: Different sports items' allocation score data

4. Conclusion

The results of this experiment show that the amount of money allocated in the cooperative task situation after social exclusion under the effect of team sports item is significantly higher than that in the cooperative task after social exclusion without the effect of sports training item, and it is inferred

that the training of team sports item can improve the degree of prosocial tendency after social exclusion. The effect of team sports on social exclusion and prosocial tendency will help to improve prosocial behavior and altruistic behavior of social members, thus reducing aggressive behavior. This inference is of great significance to the research of national fitness activities of different groups of people. The promotion and implementation of team sports will help students in schools to build harmonious classmates and members of the community to build harmonious social relations[14]. In the process of participating in the training of team sports, teenagers may observe and learn prosocial behaviors such as respecting others, obeying rules and encouraging team cooperation as demonstrated by positive role models such as physical education teachers, coaches and team leaders to develop prosocial behaviors [15]. Therefore, the effective promotion and implementation of team sports training may help reduce youth violence and enhance the degree of intimacy between social members, which is conducive to the development of social relations.

However, there are still many deficiencies in this study. This experiment did not consider whether different exercise items would have an impact on prosocial behavior in the context of social acceptance, the role of different exercise training items in the context of social acceptance, and whether social exclusion or not has an interaction effect on prosocial tendency. In addition, this study uses the effects of different populations as independent variables, and the effects of different populations on prosocial tendencies are not all strongly different. Therefore, in order to more directly explore the impact of different exercise items on prosocial tendencies after social exclusion, in future experiments, the differences between populations can be converted into different exercise training control interventions for the same population. It is more stable to use direct and long-term exercise interventions to explore the effect of different exercise items on prosocial tendencies after social exclusion instead of the influence of population on the dependent variable. In conclusion, this study provides an explanation for the behavior of people in different sports in the social exclusion environment. Follow-up studies can continue to explore the role of participants in different sports training interventions and social tendencies in different social scenarios, and can further explore the performance of athletes and different social environments.

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