

Can the parental socio-economic status promote the children to participate in physical exercise? An empirical study based on the survey data of CGSS 2017

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Abstract. – OBJECTIVE: This paper discusses the promotion effect and mechanism of the parental socio-economic status (SES) on their offspring's participation in physical exercise and provides direction and guidance for the formulation of sports public policies.

MATERIALS AND METHODS: 7,965 data were obtained from the 2017 Chinese General Social Survey (CGSS) dataset. To investigate the effect and mechanism of parental SES in encouraging offspring to engage in physical activity, this paper used a binary logistic regression model and an ordinal logistic regression model. The moderating effects of urban-rural variables and birth cohorts were explored through hierarchical regression analysis and regression coefficient difference test. Robustness tests were performed by sample screening and model replacement.

RESULTS: After controlling for related variables, the parental SES can improve the possibility of children's participation in physical exercise (OR = 1.134, $p < 0.01$). Part of this promotion effect is realized by improving their children's education level (19.87%) and social communication (2.56%), and the promotion effect increases gradually with the passage of time and social changes. The robustness test results show that the empirical research results are reliable.

CONCLUSIONS: The parental SES can promote their children to participate in physical exercise.

Key Words:

Socio-economic status, Physical exercise, Mediating effect, Public policy, Empirical research.

Introduction

Sport is a cultural activity that alters the natural and social features of people. Through sport, individuals can acquire motor skills, improve their lifestyles, promote physical and mental harmony, identify with social norms, and acquire so-

cial roles^{1,2}. Sports play an important role in building a harmonious society and "Healthy Chinese"³. Although a large number of studies have proved that regular physical exercise can bring many benefits to people, the problem of insufficient physical activity is still widespread. A survey of 1.6 million adolescents aged 11-17 in 146 countries shows that 81% of adolescents do not meet the goal of "moderate-to-vigorous physical activity (MVPA) for at least 60 minutes a day" proposed by the World Health Organization (WHO), and about 85% of adolescents in China do not meet the goal⁴. WHO recommends at least 150 minutes of MVPA per week for adults, but Chinese adults do not seem to achieve⁵.

There are many factors that affect youth physical exercise, among which family factors occupy a very important position. The family is the basic unit of the initial socialization of individuals. The family not only plays an important role in shaping the physical exercise habits of young people, but also has an important influence on the way and degree of participation of young people in physical exercise⁶. With China's economic development and social transformation, residents' living standards and fitness awareness have improved. However, some new social development resistances and structural obstacles have emerged, among which the social intergenerational transmission is particularly prominent. That is to say, the ascribed factors represented by the parental socio-economic status (SES) have an increasing influence on their offspring⁷. SES is an overall indicator that measures the performance of individual social capital, educational capital, and economic capital in society, and is a comprehensive manifestation of individuals in the social stratification system. As an important indicator to measure the family environment, the parental SES is closely related

to the health benefits, economic benefits and social benefits of their children, which is directly or indirectly related to the cultivation of physical exercise behavior of their children.

The concept of SES has multi-dimensional and comprehensive characteristics, which reflects the differences in individual social resources⁸. The assessment of SES has not yet formed a unified standard. Matthews⁸ believes that SES is related to factors, such as income, education, and occupation. Kaplan and Zingales⁹ judge an individual's SES from the resources and prestige possessed. Currie et al¹⁰ use the family affluence scale (FAS) to measure the wealth of the family, and then, determine the socioeconomic status. In addition, there are many studies that use individual income⁷, education level¹¹ and other single indicators to measure SES. In view of the complexity of SES evaluation, most empirical studies based on CGSS database mostly use self-evaluation SES to judge. Therefore, referring to previous study¹², our study measures the parental SES by the self-rated family level of the children at the age of 14. Respondents can objectively reflect the position of their parents in the social stratification system by recalling their self-perceived level of family socioeconomic resources compared with their peers when they were minors.

Physical exercise is increasingly playing an irreplaceable role in achieving national health and the goal of "Healthy China 2030". The study of the relationship between the parental SES and the physical exercise behavior of their offspring will not only help to understand the micro-mechanism of the family background on the physical exercise habits of the offspring, but also provide evidence guidance for the implementation and consolidation of the sports poverty alleviation policy. We ask the following three questions: Can the parental SES promote their offspring to participate in physical exercise? What is the internal mechanism of the parental SES to promote their offspring to participate in physical exercise? Is there an urban-rural difference and cohort effect in the influence of parental SES on offspring's participation in physical exercise? Based on the data of 2017 Chinese General Social Survey (CGSS 2017), we used binary logistic regression to explore the effect of parental SES on offspring's physical exercise, and to explore the mechanism of this effect. It is expected to provide research evidence to support the policy making of a family environment to promote youth physical exercise.

With increasing research on the micro-mechanism of social ecology of adolescent physical activity, the divergence of various research results is also gradually increasing. Some empirical studies^{13,14} show that parents with higher SES are more supportive of their children participating in physical exercise. However, Kelishadi et al¹⁵ have reached the opposite result, that is, families with higher SES of children and adolescents have lower levels of physical activity. There may be two reasons for the divergence between the studies: first, there are differences in the information of SES reflected by different evaluation indicators; second, there are regional differences in the influence of SES on adolescents' physical exercise behavior. There is a relative lack of research on the parental SES and the physical exercise behavior of children in China. It mostly discusses the impact of a factor composed of SES on physical exercise, lacks an overall index to measure SES, and lacks a large sample survey across the country. Our study uses CGSS 2017 data to conduct research and proposes research hypothesis H₁: the parental SES can significantly promote the offspring to participate in physical exercise.

The micro-mechanism of the influence of parental SES on offspring's physical exercises can be reviewed from the two aspects of education and social interactions. First, numerous studies¹⁶⁻¹⁸ have demonstrated that the socioeconomic capital owned by a family can enhance the educational attainment and academic achievement of offspring. At the same time, the education level is an important factor that affects participation in physical exercise. Generally, the higher the degree of education is, the higher the possibility of participating in physical exercise. Second, SES is a significant factor in promoting social interaction^{6,19}, and individuals with higher social interaction skills are more likely to participate in physical exercise. Our study puts forward the research hypothesis H₂: the parental SES promotes their offspring to participate in physical exercise by improving the educational level and social interaction of the offspring.

The imbalance of urban and rural economic development is an important factor that affects the degree of participation in physical exercise and health inequality. The urban and rural dual system environment has caused differences in economic resources, educational resources, medical resources, etc., making people in various regions form unique lifestyle characteristics. In developed countries, there is a significant positive correla-

tion between individual SES and health level, while there is a significant negative correlation between the two in the developing countries²⁰. The reason is that the individual transportation modes and professional working environment with lower SES have increased physical activity. Xia et al²¹ have proved that the exercise frequency and exercise time of urban workers are significantly higher than those of rural workers and believe that there are urban-rural differences in the impact of SES on health level through physical exercise. The unbalanced economic development between urban and rural areas makes the allocation of sports resources unbalanced. On the other hand, the difference in the uneven economic development between urban and rural areas in China has formed a difference in the cultural concepts and ideological consciousness of the residents to a certain extent. Urban residents are deeply influenced by the concept of healthy living and are more inclined to pursue a lifestyle of active exercise and healthy eating; while residents in rural areas generally believe that their daily physical activity is no less than physical exercise and does not require additional physical exercise²². Therefore, there are differences in individual physical exercise behavior due to different economic and social environments. Our study puts forward the research hypothesis H₃: there are urban and rural differences in the influence of the parental SES on the physical exercise of their offspring.

The above studies fully confirm the direct connection between SES and physical exercise behavior and health inequality. However, most studies^{11,13,15} mainly demonstrate the differences in physical exercise behavior of groups of different SES at a static point in time. It assumes that the physical exercise behaviors and changes of different birth cohorts are consistent and ignores that the birth cohort may have an impact on the research results. In the context of life history and social changes, the relationship between SES and physical exercise behavior has become no longer clear. There were significant health differences between the different SES groups, but such health differences changed over time^{22,23}. The drastic social change in China requires that cohort effect should be considered when studying the correlation between SES and physical exercise behavior. On the one hand, the historical period, social system and economic level of different birth cohort groups are different. On the other hand, under the influence of major social changes, different birth cohort groups are in different stages of life,

so they are affected differently^{24,25}. Therefore, the cohort effect is an important factor that explores the influence of the parental SES on the physical exercise behavior of their offspring based on the perspective of social changes and life history. Our study puts forward the research hypothesis H₄: there is a cohort effect on the influence of the parental SES on their offspring's physical exercise.

Materials and Methods

Data Sources

Our study uses the 2017 Chinese General Social Survey (CGSS 2017) to conduct research. CGSS is the earliest national, comprehensive and continuous academic survey project in China. The project systematically and comprehensively collects data at multiple levels of society, community, family and individual, so as to provide detailed data sources for the development of our study. On the basis of selecting the required variables, we eliminated the invalid answers of "refuse to answer", "don't know", "not applicable" and "other" from the database and obtained a total of 7,965 valid samples.

Variable Selections and Processing

Dependent variable: whether the offspring participate in physical exercise. CGSS 2017 surveyed how often respondents participated in physical exercise. This variable is a dichotomous variable, and our study assigns the options "every day", "several times a week", "several times a month" and "several times a year or less" as 1, that is, participate in physical exercise; the option "never" as 0, that is, do not participate physical exercise.

Independent variable: parental SES. CGSS 2017 surveyed the respondent "which level do you think your family was it when you were 14 years old?" The respondents judged their self-perceived family level at the age of 14 from a scale of 1-10. Among them, 10 points represented the top level, and 1 point represented the bottom level. Our study refers to the research of Li et al¹², and the respondents' self-perceived family level at the age of 14 is used to measure the parental SES.

Mediating variables: Mediating variables include offspring's education level and social interaction. CGSS 2017 asked respondents "what is your current highest education level?" Assign the answer "no education", "private school", "literacy class", "elementary school" to 1, that is, "primary school and below", assign "junior

high school” to 2, assign “high school, technical secondary school, technical school” to 3, assign “junior college” to 4, and assign “undergraduate”, “graduate and above” to 5, that is, “undergraduate and above”. CGSS 2017 investigated the social frequency of respondents in the past year by “did you often socialize/visit in your free time in the past year?”, and assigned “never”, “rarely”, “sometimes”, “often and very frequently” to 1-5 respectively.

Control variables: With reference to previous studies^{7,12,21}, the control variables selected in our study mainly include offspring’s characteristics and parental characteristics. (1) The offspring’s characteristics include birth cohort, gender, ethnic, place of residence, Communist status and health level. CGSS 2017 investigated the date of birth of the respondents. Our study, referring to the research of Li et al¹², assigned the value of 1 before 1949, and every 10 years from 1950 to 1999, which is divided into 2-6. On the gender variable, assign “male” to 1 and “female” to 0. In terms of ethnic variables, assign the value of “Han” to 1, and assign the value of 0 to “Mongolian, Manchu, Hui, Tibetan, Zhuang, Wei, and others”. In the place of residence variable, assign “urban” to 1, and assign “rural” to 0. In the variable of Communist status, assign the value of “Communist” to 1, and assign the value of “the masses, the Communist Youth League members, and the democratic parties” to 2, that is, non-communists. CGSS 2017 surveyed the health status of the interviewees and assigned values of 1-5 to the items “very unhealthy, relatively unhealthy, general, relatively healthy, and very healthy”. (2) The parental characteristics include parental education level and Communist status. The selection of parental educational level variable is to control the influence of family cultural capital on offspring’s physical exercise behavior, and its measurement method and variable assignment are the same as offspring characteristics. The choice of Communist status is to control the influence of family political capital on the physical exercise behavior of their offspring.

The descriptive statistics of the selected dependent variable, independent variable, mediating variables and control variables are shown in Table I.

Statistical Analysis

Since the dependent variable is a binary variable, a binary logistic regression model is constructed according to the variable type to explore the effect of the parental SES on their offspring’s

participation in physical exercise. Build benchmark model (1):

$$\ln \frac{P}{1-P} = \alpha_0 + \alpha_1 \text{SES}_i + \alpha_x \text{control}_i + \varepsilon_i \quad (1)$$

Model (1) refers to the main effect of parental SES on offspring’s participation in physical exercise after controlling relevant variables. Where P refers to the probability of children participating in physical exercise; SES_i refers to parental SES; control_i refers to control variables; α_0 , α_1 , α_x are parameters to be estimated; ε_i refers to the residual term.

The mechanism of parental SES promoting offspring’s participation in physical exercise is verified by mediating effect test. Our study uses the stepwise test method to test the mediating role of education level and social interaction by using sequential logistic regression analysis (2) and binary logistic regression analysis (3).

$$\ln \frac{P}{1-P} = \text{mediation}_i = \beta_0 + \beta_1 \text{SES}_i + \beta_x \text{control}_i + \varepsilon_i \quad (2)$$

$$\ln \frac{P}{1-P} = \gamma_0 + \gamma_1 \text{SES}_i + \gamma_2 \text{mediation}_i + \gamma_x \text{control}_i + \varepsilon_i \quad (3)$$

Model (2) refers to the effect of the parental SES on the mediating variables after controlling the relevant variables. Model (3) refers to the joint effect of parental SES and mediating variables on offspring’s participation in physical exercise after controlling for related variables. If α_1 , β_1 , and γ_1 are significant, there is a mediating effect. If γ_1 is not significant, there is a complete mediating effect. If $\gamma_1 < \alpha_1$, there is a partial mediating effect. Mediation_i refers to mediating variables, and the remaining parameters are the same as those explained in the model (1).

Our study uses hierarchical regression analysis to explore the moderating effects of urban-rural and birth cohorts and builds a model reference model (1). If the existence of hierarchical regression coefficient is not significant, it indicates that there is heterogeneity; if the hierarchical regression coefficients are significant, the Z-test is used to calculate the difference of regression coefficients. The computational formula:

$$Z = \frac{b_1 - b_2}{\sqrt{SE_1^2 + SE_2^2}}$$

In the formula, b_1 and b_2 refer to the regression coefficients of two groups of hierarchical variables, and SE_1^2 and SE_2^2 refer to the square of the standard error of the regression coefficients of independent variables in two groups of hierarchical variables.

Table I. Descriptive statistics of the main variables.

| Variable type | Variable | n | M | SD | 0 (%) | 1 (%) |
|---------------------------|---------------------------|------|------|------|-------|-------|
| Dependent variable | Whether to exercise | 7965 | | | 47.8 | 52.2 |
| Independent variable | Parental SES | 7965 | 3.12 | 1.79 | | |
| Mediating variables | Education level | 7965 | 2.25 | 1.30 | | |
| | Social interaction | 7965 | 2.76 | 1.05 | | |
| Control variables | | | | | | |
| Offspring characteristics | Birth cohort | 7965 | 3.25 | 1.55 | | |
| | Gender | 7965 | | | 52.2 | 47.8 |
| | Ethnic | 7965 | | | 8.1 | 91.9 |
| | Place of residence | 7965 | | | 41.3 | 58.7 |
| | Communist status | 7965 | | | 88.8 | 11.2 |
| Parental characteristics | Health level | 7965 | 3.48 | 1.10 | | |
| | Education level of father | 7965 | 1.43 | 0.86 | | |
| | Education level of mother | 7965 | 1.27 | 0.70 | | |
| | Father's Communist status | 7965 | | | 89.2 | 10.8 |
| | Mother's Communist status | 7965 | | | 97.3 | 2.7 |

Results

Main Effect Tests

In order to verify the promotion effect of parental SES on offspring's participation in physical exercise based on the model (1), our study successively included independent variable, control variables and mediating variables for binary logistic regression. The results of model (1a) in Table II show that parental SES can significantly promote their offspring to participate in physical exercise ($\alpha = 0.280, p < 0.01$), $OR = \exp^{(0.280)} = 1.323$, that is, for every in-

crease in the parental SES, the probability of their offspring participating in physical exercise increases by 32.3%. After the model (1b) controls the relevant variables, the promotion effect of the parental SES on the offspring's participation in physical exercise is reduced ($\alpha = 0.156, p < 0.01$), $OR = \exp^{(0.156)} = 1.169$, that is, the probability of offspring's participation in physical exercise increases by 16.9% when parental SES increases by 1 unit. After the model (1c) further included the mediating variables, the promotion effect of parental SES on offspring's participation in physical exercise is further reduced ($\alpha = 0.126, p <$

Table II. Test on the main effect of parental SES on offspring's participation in physical exercise.

| Variable type | Variable | Model (1) α | | |
|---------------------------|---------------------------|--------------------|------------|------------|
| | | Model (1a) | Model (1b) | Model (1c) |
| Independent variable | Parental SES | 0.280** | 0.156** | 0.126** |
| Control variable | | | | |
| Offspring characteristics | Birth cohort | | 0.094** | -0.021 |
| | Gender | | 0.067 | 0.008 |
| | Ethnic | | 0.217* | 0.214** |
| | Place of residence | | -1.078** | -0.898** |
| | Communist status | | 0.926** | 0.477** |
| Parental characteristics | Health level | | 0.216** | 0.162** |
| | Education level of father | | 0.159** | 0.026 |
| | Education level of mother | | 0.253** | 0.093 |
| | Father's Communist status | | 0.146 | 0.025 |
| | Mother's Communist status | | 0.096 | 0.025 |
| Mediating variable | Education level | | | 0.503** |
| | Social interaction | | | 0.230** |
| Prob > Chi ² | | | | |
| Pseudo R ² | | | | |
| N | | 0.000 | 0.000 | 0.000 |
| | | 0.073 | 0.250 | 0.301 |
| | | 7965 | 7965 | 7965 |

Note: ** $p < 0.01$; * $p < 0.05$.

Table III. Test on the mediating effect of parental SES on offspring's participation in physical exercise.

| Dependent variable Independent variable | Education level | Whether to exercise | Control variables | Whether to exercise |
|--------------------------------------------|--------------------|---------------------|--------------------|---------------------|
| | Model (2a) β | Model (3a) γ | Model (2a) β | Model (3a) γ |
| Parental SES | 0.062** | 0.129** | 0.020** | 0.154** |
| Education level | | 0.497** | | |
| Social interaction | | | | 0.221** |
| Control variables | Control | Control | Control | Control |
| Prob > Chi ² | 0.000 | 0.000 | 0.000 | 0.000 |
| Pseudo R ² | 0.527 | 0.289 | 0.018 | 0.168 |
| N | 7965 | 7965 | 7965 | 7965 |

Note: ** $p < 0.01$; * $p < 0.05$.

0.01), $OR = \exp^{(0.126)} = 1.134$, that is, the probability of offspring's participation in physical exercise increased by 13.4% when parental SES increased by 1 unit. At the same time, the educational level and social interaction of their offspring can significantly promote their participation in physical exercise ($p < 0.01$), and the regression coefficient of model (1c) is less than that of model (1b). Therefore, the parental SES can promote their offspring to participate in physical exercise by improving their education level and social interaction. To sum up, research results verify the research hypothesis H_1 , that is, the parental SES can promote their offspring to participate in physical exercise. At the same time, some hypotheses of H_2 are verified, but it is still necessary to further explore how much effect of parental SES is to promote offspring's participation in physical exercise by improving their education and social interaction.

Mediating Effect Test

In order to further explore the mechanism of parental SES promoting offspring's participation in physical exercise, our study constructs the mediating effect model of education level and social interaction based on model (2) and model (3), respectively. The influence of parental SES on education level ($\beta = 0.062, p < 0.01$) and social interaction ($\beta = 0.020, p <$

0.01) has a very significant promoting effect, indicating that the parental SES can improve the education level and social interaction of their offspring (Table III). The regression coefficients of the parental SES and the mediating variables are both significant ($p < 0.01$), and the regression coefficient γ_1 in the model (3) is less than the regression coefficient α_1 in the model (1b) (Table III). Therefore, educational level and social interaction play a mediating effect in the parental SES in promoting offspring's participation in physical exercise, and there is a partial mediating effect, which further validates the research hypothesis H_2 . The main effect of parental SES on offspring's participation in physical exercise is 0.156, and the mediating effect of education level is 0.031 (0.062×0.497), that is, 19.87% ($0.031/0.156$) of the parental SES promoted their offspring's participation in physical exercise by improving their offspring's education level. The mediating effect of social interaction is 0.004 (0.020×0.221), that is, 2.56% ($0.004/0.156$) of the parental SES promoted their offspring's participation in physical exercise by promoting their offspring's social interaction. Therefore, 22.43% of the parental SES promotes their offspring to participate in physical exercise through the above mediating variables.

Heterogeneity Tests

In order to test the moderating effects of regions and birth cohorts on the parental SES in promoting offspring to participate in physical exercise, our study took each category of moderator variables as research samples and conducted analysis based on the benchmark model (1). In urban ($\alpha = 0.120, p < 0.01$) and rural ($\alpha = 0.136, p < 0.01$) areas, the parental SES significantly promoted their offspring's participation in physical exercise (Table IV). Further Z-test analysis showed that there was no significant difference between urban and rural areas in which the parental SES promoted their offspring

Table IV. Urban-rural difference in the impact of parental SES on offspring's participation in physical exercise.

| Dependent variable | α (SE) | |
|-------------------------|-----------------|-----------------|
| | Urban | Rural |
| Parental SES | 0.120** (0.020) | 0.136** (0.024) |
| Control variables | Control | Control |
| Prob > Chi ² | 0.000 | 0.000 |
| Pseudo R ² | 0.209 | 0.139 |
| N | 4679 | 3286 |

Table V. Cohort difference in the influence of parental SES on offspring's participation in physical exercise.

| Dependent variable | α (SE) | | | | | |
|-------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| | ≤ 1949 | 1950-1959 | 1960-1969 | 1970-1979 | 1980-1989 | 1990-1999 |
| Parental SES | 0.095*(0.040) | 0.157**(0.034) | 0.156**(0.031) | 0.112**(0.035) | 0.160**(0.037) | 0.231**(0.064) |
| Control variables | Control | Control | Control | Control | Control | Control |
| Prob > Chi ² | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Pseudo R ² | 0.226 | 0.205 | 0.205 | 0.300 | 0.229 | 0.315 |
| N | 1273 | 1569 | 1698 | 1456 | 1248 | 721 |

to participate in physical exercise ($Z = 0.545$, $p = 0.291$). The research hypothesis H_3 was not supported. The parental SES significantly promoted the participation of offspring in different birth cohorts in physical exercise ($p < 0.05$), and with the passage of time and social changes, the effect of parental SES on the participation of offspring in physical exercise gradually increased (Table V). Further Z-test analysis shows that there is a significant difference between the regression coefficient of the population born before 1949 and the regression coefficient of the population born from 1990 to 1999 ($Z = 1.813$, $p = 0.046$). Therefore, there is a cohort effect that the parental SES promotes their offspring to participate in physical exercise. The research hypothesis H_4 was supported.

Robustness Tests

The reliability of empirical results is an important basis for the wide acceptance of research conclusions. In order to ensure the robustness of research results, our study is tested from two aspects: sample selection and model replacement. (1) Sample selection: Using the study of Li et al¹², sample screening is carried out according to the age of respondents, which can eliminate the influence of memory bias of the elderly. Memory aging has phased characteristics, manifested as a decline at the age of 50, and a more significant decline after the age of 70. In our study, the respondents were limited to 50 and 70 years old

respectively, and the robustness test was carried out by eliminating the influence of recall bias. (2) Model replacement: Our study replaced "physical exercise frequency of offspring" with "whether the offspring participate in physical exercise", assigns the options "never", "several times a year or less", "several times a month" and "several times a week" "every day" as 1~5, and construct a sequential logistic regression model for verification. The regression coefficients of binary logistic regression model and the sequential logistic regression model are positive and significant at the level of 1%, indicating that the parental SES can promote their offspring to participate in physical exercise. The study results are not affected by recall bias, parameter setting and statistical methods (Table VI).

Conclusions

Based on CGSS 2017 data, this paper discusses the promotion effect and mechanism of parental SES on offspring's participation in physical exercise, so as to provide direction and guidance for the formulation of sport health promotion policies for children and adolescents. Research shows that the higher the parental SES, the greater the possibility of offspring participating in physical exercise. Part of this promotion effect is achieved by improving education level and social interaction, and this promotion ef-

Table VI. Robustness test.

| Dependent variable | Model (1) α | Under age 70 | Sequential logistic regression model α |
|-------------------------|--------------------|--------------|-----------------------------------------------|
| | Under age 50 | | |
| Parental SES | 0.210** | 0.218** | 0.149** |
| Control variables | Control | Control | Control |
| Prob > Chi ² | 0.000 | 0.000 | 0.000 |
| Pseudo R ² | 0.164 | 0.160 | 0.085 |
| N | 3781 | 6941 | 7965 |

fect has a cohort effect. With the passage of time and social changes, the promotion effect has gradually increased, especially for the post-90s group. At the same time, the robustness test confirmed the reliability of the above research results.

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Conflict of Interest

The Authors declare that they have no conflict of interests.

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Authors' Contributions

Xiao Su Feng: drafted the article, analyzed and interpreted the data. Peng Shi: designed the research. All authors participated the intellectual content of the manuscript.

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