

# *Research on Characteristics and Relevance between Willpower and Leadership Practice of Medical College Students*

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**Abstract**—The purpose of this paper is to explore the characteristics and relationship between the willpower of medical college students and the practical behavior of leadership, so as to improve the students' willpower, increase their practical behavior of leadership, and develop their basic psychological literacy, so as to provide a strong theoretical basis for colleges and universities to better train high-quality talents. By using the Grit Scale of College Students and the Student Leadership practice Scale, 2980 college students were selected to conduct the questionnaire survey. The results showed that the scores of willpower and leadership practice of medical college students were both at a medium high level. There was a significant positive correlation between willpower and leadership practice ( $r=0.485$ ,  $p < 0.01$ ). The willpower can positively predict the practical behavior of leadership ( $t=28.844$ ,  $p < 0.001$ ). Colleges and universities can increase their leadership practice by exercising their willpower.

**Keywords**—College students; Willpower; Leadership practice; Correlation

## I. INTRODUCTION

The cultivation of college students is closely related to the development of the country. Chinese colleges and universities pay attention to the professional theoretical education of college students, but lack the cultivation of their basic psychological literacy, teamwork and group influence. As an important part of basic psychological literacy, college students' leadership training can promote their group influence and help them lead the led to achieve their goals in specific situations. Studies have shown that willpower is an important skill for leaders and other high achievers [1]. Willpower refers to the psychological process in which a person consciously

determines the purpose, controls and adjusts his own actions according to the purpose, and overcomes various difficulties to achieve the purpose. Willpower is an indispensable psychological quality for people to understand and transform the objective world and the subjective world, develop their abilities and move towards success [2].

Leadership refers to the ability to make full use of human resources and objective conditions within the scope of governance to accomplish the required tasks at the minimum cost and improve the efficiency of the whole team. Not only do leaders need motivation to stimulate their actions, but they also need to rely on their willpower to sustain the action until the goal is achieved. In the study of leadership, willpower is a kind of ability rarely studied and ignored by researchers [3]. Wei Xiaoli et al. believed that one of the three core abilities of a leader is willpower [4], indicating that there is a close relationship between willpower and leadership.

Previous studies, most of the research object for the social leaders, with little research on college students' group, so this study was to explore the characteristics of medical college students the willpower and leadership practice and relations, in order to promote students' willpower, increase their leadership practice, to cultivate high-quality talents in colleges and universities to better provide strong theoretical basis.

## II. METHODS

### A. Participants

By means of group tests, 2980 college students in a medical college were selected for the questionnaire survey. After eliminating invalid questionnaires, 2703 valid questionnaires were collected, with an effective rate of 90.70%.

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Project supported by

1. Jiangxi provincial education and science "13th five-year plan" 2020 annual project (No.146)

2. The subject of Research on College Students' Leadership Training under the Double-Education Mode (2018jzzd-1)

B. Measures

1) The Grit Scale of College Students

The Grit Scale of College Students compiled by Wu Lili et al. [5] was adopted. The scale consists of 24 questions and is divided into 6 dimensions: regulation, self-control, tenacity, conscientiousness, decisiveness and purposefulness. To facilitate statistics, the scale options were converted from 1 (completely inconsistent) to 5 (completely consistent). The higher the total score, the better the students' willpower. In this study, the internal consistency coefficient of the scale was 0.848.

2) The Student Leadership Practice Scale

The Student Leadership Practice Scale compiled by Kouzes et al. [6] was adopted. The scale consists of 30 questions and is divided into 5 dimensions: lead by example, inspire vision, challenge the status quo, empower people and inspire people. The scale USES a five-point scale, ranging from 1 (never) to 5 (always). The higher the score, the higher the frequency of students' leadership practices. In this study, the internal consistency coefficient of the scale was 0.942.

3) Statistical Analysis

SPSS25.0 was used for data processing, correlation analysis, regression analysis and other methods, and the inspection level was 0.05 ( $\alpha=0.05$ ).

III. RESULTS

A. Common method deviation test

Using Harman's single factor test method was used to conduct exploratory factor analysis on all questionnaire questions. The results show that there are a total of 8 factors with eigenvalues greater than 1, and the explanatory rate of the first common factor is 26.1%, which is less than the critical standard of 40%, indicating that there is no serious common method deviation in this study.

B. General characteristics of willpower and leadership practice behavior of medical college students

As shown in table 1, the mean score of willpower of medical college students was  $82.29 \pm 12.44$ , higher than the median value of 62, indicating that the score of willpower of medical college students was on the high side of the average.

Medical college students practice leadership the mean score of  $109.89 \pm 15.77$ , higher than the mid-range 90, which set a good example, a total of kai vision, challenge the status quo, all lines and inspiring the average score of five dimensions are slightly higher than the value in theory, practice shows that medical college students' leadership points in the medium level on the high side.

TABLE I. DESCRIPTIVE STATISTICS OF WILLPOWER AND LEADERSHIP PRACTICES OF MEDICAL COLLEGE STUDENTS (N=2703)

Statistics	Willpower's Total Score	Leadership Practice's Total Score	Lead by Example	Inspiring Vision	Challenging the Status Quo	Making People Act	Inspiring People
$\bar{x} \pm s$	$82.29 \pm 12.44$	$109.89 \pm 15.77$	$22.2 \pm 3.38$	$21.65 \pm 3.81$	$21.03 \pm 3.88$	$22.52 \pm 3.08$	$22.48 \pm 3.53$
Midpoint	62	90	18	18	18	18	18
Title Number	24	30	6	6	6	6	6

TABLE II. DIFFERENCES IN DEMOGRAPHIC VARIABLES OF WILLPOWER AND LEADERSHIP PRACTICES AMONG MEDICAL COLLEGE STUDENTS

Factor	Willpower	t	Leadership practice	t	
Gender	Male(N=1081)	$82.88 \pm 13.64$	1.939	$111.05 \pm 16.54$	3.094**
	Female(N=1622)	$81.90 \pm 11.57$		$109.11 \pm 15.19$	
Student Origin	From rural areas(N=1991)	$82.24 \pm 12.44$	-.407	$109.31 \pm 15.44$	-3.064**
	From urban areas(N=712)	$82.46 \pm 12.45$		$111.49 \pm 16.59$	
Only-child	Only Child(N=582)	$82.88 \pm 12.90$	1.290	$111.82 \pm 16.12$	3.297**
	Non Only Child(N=2121)	$82.13 \pm 12.31$		$109.35 \pm 15.64$	

Note: \*P<0.05, \*\*P<0.01, \*\*\*P<0.001 the same below

C. Differences in demographic variables of willpower and leadership practices among medical college students

Table II shows that the willpower scores of medical college students are not significant in gender, place of origin and whether they are the only child. There was a significant gender difference in the scores of leadership practice behavior of medical college students ( $t=3.094$ ,  $p < 0.001$ ), and the scores of Leadership practice behavior of male students were significantly higher than that of female students. There was a significant difference in the scores of leadership practice behavior among students ( $t=-3.064$ ,  $p<0.01$ ). The scores of leadership practice behavior among urban students were significantly higher than those of rural students. There was

also a significant difference in the scores of leadership practice behavior in whether or not it was the only child variable ( $t=3.297$ ,  $p < 0.01$ ). The scores of leadership practice behavior of the only child were significantly higher than that of the non-only child.

D. Correlation analysis between willpower and leadership practice behavior of medical college students

Table 3 shows that there is a significant positive correlation between the total score of willpower and the total score of leadership practice among medical college students ( $r=0.485$ ,  $p<0.01$ ). Among them, there is a significant positive correlation between the total score of willpower and the dimensions of leading by example, inspiring vision,

challenging the status quo, enabling people to act and inspiring people.

TABLE III. CORRELATION ANALYSIS OF WILLPOWER AND LEADERSHIP PRACTICE OF MEDICAL COLLEGE STUDENTS (N=2703)

Item	Leadership Practice's Total Score	Lead by Example	Inspiring Vision	Challenging the Status Quo	Making People Act	Inspiring People
Willpower's Total Score	0.485**	0.439**	0.452**	0.471**	0.376**	0.414**

TABLE IV. REGRESSION ANALYSIS OF WILLPOWER ON STUDENTS' LEADERSHIP PRACTICES (N=2703)

Dependent Variable	Predictor Variable	B	$\beta$	t	R <sup>2</sup>
Leadership practice	Willpower's Total Score	.615	.485	28.844***	.485

E. Regression analysis of the relationship between willpower and leadership practice among medical college students

Shown in table IV, to score as a predictor variable willpower, student leadership practices behavior score as the dependent variable, regression analysis, according to the results of willpower can positively predict leadership practice ( $t = 28.844, p < 0.001$ ), established the regression equation for:  $\hat{y} = 59.26 + 0.615x$ .

IV. DISCUSSION AND ANALYSES

A. The overall level of willpower of medical college students

In this study, it was found that the overall score of willpower of medical college students was at a moderately high level, indicating that the overall level of willpower of medical college students was well developed, which was consistent with the research results of Wu Lili [7]. College students as the growth of the age, thinking of the development of mature, broadening knowledge and rich experience, making college students will have different degree of increase than before, and students can realize the extent to which their willpower, there will be a purpose through a variety of methods to exercise their willpower, and college students will have relatively more want to achieve, this kind of achievement motivation makes it have the initiative to exercise their own will power level. In the university environment where college students live, the school and teachers will pay more attention to the cultivation of students' self-willpower.

B. Overview of college students' leadership practice

The study found that the average score of leadership practice behavior of medical college students was only at a moderately high level, and did not show a high level of leadership practice behavior. Scholars at home and abroad generally believe that college students have leadership potential [8]. They are generally well aware of or able to see the various problems they encounter, but they are often unwilling to take the initiative to communicate, to effectively solve the problem. Many college students have been accustomed to hide in the group, convinced that the "wood is beautiful in the forest, the wind will destroy it" view, deep fear of their own performance, invite the collective look and see. This also reflects that college students did not train and improve their leadership practices during their college years. "There is an important theme in leadership development in leadership research, that youth is the best and most critical period for leadership development." [9] Regarding the cultivation of youth leadership, we should be fully aware that

an important part of teenagers' ability is the leadership of college students [10]. Therefore, colleges and universities should be more to pay attention to the cultivation of the college students' leadership, strengthen the cultivation of the leadership practice for college students, this may be leadership is a critical period of development, this will bring the students to enter society after giving great help, promote students' all-round development of morality, intelligence and physique, improve the psychological quality of the foundation.

C. The difference of students' leadership practice in demographic variables

The results of this study show that there are significant differences in students' leadership practices in gender, origin and whether they are the only child. The score of boys' leadership practice behavior was significantly higher than that of girls. Due to the differences between male and female college students in physiology, psychology and other aspects, and the different experience and training of male and female college students in the society, as well as the comprehensive influence of other complex factors, there is a certain degree of gap between male and female college students in the comprehensive ability. Compared with female college students, male college students are more active, adaptable and decisive, while female students are more emotional and have less psychological endurance than male students. Scholars Peng Xian, Ma Suhong, Xiu-ming Li in the context of the college students' sex differences in cognitive style, through using the method of theory and empirical research, it is concluded that the male and female college students there is a difference in cognitive style, namely the female college students on the dimension of emotion and intuition to have the advantage, and male college students in thinking and feeling dimensions advantage [11]. The different sexes in makes in their respective characteristics, ability, quality, etc. It is because of these differences that men have better leadership potential than women.

Compared with urban children, rural children generally lack rich knowledge and scientific training in the process of growing up and miss many good opportunities in the process of growth and development. According to the connotation of leadership, college students' leadership has high requirements on their personality, intelligence, experience, confidence, interpersonal relationship, information processing, decision-making resources and courage. Generally speaking, compared with rural students, urban students can be exposed to more social services and activities in urban life, so as to get

more comprehensive exercise in life and perform better in cognition, interpersonal communication, problem handling, thinking mode, etc. [12]. Therefore, the leadership practice behavior score of urban college students is significantly higher than that of rural students.

Compared with the non-only child, the leadership score of the only child is slightly higher than that of the non-only child. Only children get more attention and resources in the process of growth, parents for children's education, material to provide a more adequate and parents for children alone has more attention make children's self-confidence, children get exercise, and the opportunity to contact the society will be relatively more, children growing up in this environment, the equivalent of leadership for the development and made more adequate preparation.

#### *D. The correlation between willpower and leadership practice among medical college students*

This study also found that there was a significant positive correlation between willpower and leadership practice among medical college students, and willpower could positively predict students' leadership practice. There is a significant correlation between college students' willpower and their leadership level. This shows that college students to improve the level of its leadership, can to a certain degree of exercise of their willpower, studies have found that any leader and great people they often found that the power of willpower when young, their use of willpower with clear motivation and direction, they realized the willpower of sex, use the process and continue to develop in their whole career willpower [13], give full play to the strength of will power to develop its leadership. Therefore, for the students who are still in colleges and universities, they should grasp the stage of college, exercise their willpower and conduct more leadership practices at the same time. Colleges and universities should also pay enough attention to the improvement of students' basic psychological literacy in this aspect.

Finally, the study also found that there are still some students with low willpower and leadership practices. The cultivation of willpower and leadership focuses on improving the comprehensive quality and ability of college students, aiming to improve their ability to attract and influence the leaders and better achieve the set goals of the organization or group. This is of great significance to college students who are about to enter society. For these students, it is necessary to timely carry out education and study on the cultivation of willpower and leadership, which is also urgent. Therefore, this study was born here, hoping to attract the attention of colleges and universities. Some deficiencies in the process, this research studies the school type single, lack of comprehensive,

to practice the leadership of the willpower and affect each other is not enough in-depth, deviation, may lead to the results of the study appear in the future research, the need for more in-depth, more diversified research samples, make research results more conducive to the improvement of education mode that better promote the development of college students based on psychological quality.

#### V. CONCLUSION

In conclusion, the scores of willpower and leadership practice of medical college students are at medium and high levels. There is a significant correlation between willpower and the practical behavior of college students' leadership. Willpower can significantly predict the practical behavior of college students' leadership. Therefore, we can increase the students' leadership practice behavior by exercising their willpower.

#### REFERENCES

- [1] Tom Karp. Leaders need to develop their willpower. 2014, 33(3):150-163.
- [2] Yang Xinhua. On the factors of study willpower and its cultivation in the construction of study style [J]. China higher education research, 2008 (03): 71-72. (In Chinese)
- [3] Baumeister R F, Tierney J. Willpower: Rediscovering the Greatest Human Strength (p. 304)[J]. 2011.
- [4] Wei Xiaoli, Song Yaxian. Discussion on the core competence of leaders through Ren Zhengfei [J]. Social science and technology, 2008 (05) : 57-59. (In Chinese)
- [5] Wu Lili. Formulate the Grit Scale of College Students and the Relationship with Academic Achievement [D]. Shanxi medical university, 2016. (In Chinese)
- [6] Kouzes,J.M., Posner,B.Z. The Student Leadership Practices Inventory-Self Instrument [M],San Francisco, Jossey-Bass.2006.
- [7] Wu Lili. Formulate the Grit Scale of College Students and the Relationship with Academic Achievement [D]. Shanxi medical university, 2016. (In Chinese)
- [8] Xu Dapeng. Current situation and educational Suggestions of college students' leadership in China [D]. Hunan University, 2012. (In Chinese)
- [9] Zhang Huimin. Analysis of college students' leadership training model [D]., 2011. (In Chinese)
- [10] Li Jinlin, Wang Fangguan, Jin Haiyan. Investigation on the status quo of college students' leadership training [J]. Journal of Chongqing university of technology (social science), 2010, 24 (11): 133-138. (In Chinese)
- [11] Peng Xian, Ma Suhong, Li Xiuming. Gender differences in college students' cognitive styles [D]., 2006. (In Chinese)
- [12] Xu Dapeng. Current situation and educational Suggestions of college students' leadership in China [D]. Hunan University, 2012. (In Chinese)
- [13] Tom Karp. Leaders need to develop their willpower. 2014, 33(3):150-163.