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Comparison of Mental Health Status for 2015-2020 Freshmen in A Vocational College

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ABSTRACT
By analyzing the UPI data of freshmen in a vocational college, we can grasp the mental health condition of vocational students in the changing times and provide theoretical basis and data support for the mental health education work in vocational college.The level of mental health of freshmen in vocational college was comparable to the overall health level of freshmen nationwide. Mental health level of freshmen in vocational college has been on the rise in the past six years. In terms of mental health level of vocational students, male students are better than female students. Students major in engineering are better than those major in liberal arts, and undergraduates are better than those in junior college. Vocational students had more prominent psychological distress in the areas of interpersonal relationships, self-confidence and OCD tendencies.

KEYWORDS: UPI; Mental health; Freshmen; Vocational college

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I. INTRODUCTION

Higher vocational education is an indispensable part of China's education system, which combines the universality of higher education and the specificity of vocational education.Higher vocational students are essential skilled talents to promote the rapid development of the country, and they are also responsible for the future and hope of the nation.With the increasing attention to vocational education in our nation, higher vocational education is developing rapidly and the number of higher vocational students is increasing.In recent years, psychological problems, especially the mental health of college students, have been widely concerned by the society, and scholars have conducted a lot of researches on them. However, their research objects are more focused on college students in general colleges and universities, and there are relatively fewer studies on students in vocational colleges and universities.Compared with ordinary colleges and universities, students from higher vocational colleges and universities come from more complicated sources, including graduates from ordinary high schools and students from junior high schools, vocational high schools and technical schools, and most of these students from high schools have experienced the "failure" of the college entrance examination, which makes them feel inferior(Zhang Yudi2011).Qiu Kaijin(2007)survey on higher education students found that nearly half of the students were forced to choose higher education institutions due to their grades, and academic frustration had a negative impact on the building of their self-confidence, so the two groups are different in terms of self-confidence. However, as far as we can see, the mental health education work in higher education institutions has neither fully grasped the differences between groups nor respected the uniqueness between different members within, and there is the problem of general goal setting, which leads to the lack of pertinence of the work (Huang Qiulian2019). Therefore, the first purpose of this study is to investigate whether there are other differences between higher education students and general college students except for self-confidence.A study by Feng Zhiyuan et al.(2016)on the mental toughness of college students found significant differences lie in interpersonal relationships and emotional regulation between genders, In addition, previous studies also found that there are significant differences in mental health between different genders(Shang Li et al.2008), as well as significant differences in test anxiety, psychological defense styles, and even mental health status among students of different majors(Cheng Hangyu2006; Han Xiangqian et al.2004; Wu Feng et al.2007), and significant differences in mental health among students of different academic levels(Liu Zhenya et al.2017). Thus, the second purpose of this study is to find what differences exist between groups within higher vocational students.Longitudinally, some scholars have found that some psychological characteristics such as temperament, anxiety, self-esteem, psychological control points, social desirability, and narcissistic personality change gradually with the changes of times(Twenge2000; Twenge & Im2007; Twenge & Campbell2001; Twenge et al.2004; Twenge1997). The rapid development of society profoundly affects all aspects of contemporary college students, which makes them face more opportunities and also requires them to bear more pressure and challenges. Therefore, how the psychological conditions of senior students change over time is the third question of this study.

To sum up, this study takes higher vocational students as the research object, and intends to analyze the psychological census data of college freshmen in a higher vocational institution in Guangdong Province during the six-year period from 2015 to 2020 to sort out the changing trends of students' psychological conditions in higher vocational institutions under the changing times and whether there are differences in psychological conditions among different groups, so as to provide theoretical basis and data support for the further development of mental health education in higher vocational institutions.

II. METHOD

Participants

A total of 21,282 students from 2015 to 2020 were selected from a higher vocational institution in Guangdong Province, China, and the basic information of the surveyed students is shown in Table 1.

Table1. Freshman demographic variables in the past six years

			Sex Ratio(%)		Subject Type(%)		Academic Level(%)	
Year	N	Age($\bar{x}\pm s$)	Male	Female	Liberal arts	Engineering	Junior college	Undergraduate
2015	1740	18.94±0.82	1279(73.50)	461(26.50)	576(33.10)	1164(66.90)	1740(100.00)	0
2016	1459	18.93±0.81	1239(84.92)	220(15.08)	230(15.76)	1229(84.24)	1459(100.00)	0
2017	1494	18.91±0.89	744(49.80)	750(50.20)	1083(72.49)	411(27.51)	1494(100.00)	0
2018	4493	18.84±0.88	2422(53.91)	2071(46.09)	3048(67.84)	1445(32.16)	4493(100.00)	0
2019	6328	18.79±0.85	3873(61.20)	2455(38.80)	3115(49.23)	3213(50.77)	4723(74.64)	1605(25.36)
2020	5768	19.93±1.97	2909(50.43)	2859(49.57)	3744(64.91)	2024(35.09)	1437(24.91)	4331(75.09)
Total	21282	19.14±1.35	12466(58.58)	8816(41.42)	11796(55.43)	9486(44.57)	15346(72.11)	5936(27.89)

Note. The higher vocational institution started to enroll its first undergraduate students in 2019. In addition, theclass of 2020 contains 1025 freshmen upgrading from junior college, aged 22.17±1.17.

Measures

The University Personality Inventory(UPI) is a common questionnaire used in freshman psychological surveys(Wang Jianzhong1995). The questionnaire consists of 64 items, of which the first 63 questions are composed of two options of right and wrong (An affirmative response is scored as 1 point, a negative response is scored as zero), and the last one is an open-ended question, excluding 4 lie detection items (5/20/35/50) and 4 additional items (61/62/63/64), and the scores of the remaining 56 symptom items are added up to the total score.The UPI consists of a three-factor structure, which are: depression factor (including 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27); neuroticism factor (including 28, 29, 30, 31, 32, 34, 36, 37, 38, 39, 40 41, 43, 44, 45, 46, 48, 49, 51, 52, 53, 55, 56, 58, 59, 60); anxiety factor (including 15, 47, 54, 57); and additional question items 33 and 42 without factor attribution(Hu Weijian2018).The UPI results can be divided into three groups: the Group Ⅰ, those who may have serious psychological problems (meeting one of the following 4 conditions: total score greater than 25; affirmative answer to question 25; affirmative answer to at least 2 auxiliary questions; active request for counseling in question 64), the 64 open-ended questions are not conducive to practical operation, and many college students choose counsel because they are interested in it. The Group Ⅱ, those who may have general psychological problems (meeting one of the three conditions: total score greater than 20 and less than 25; at least one of the 8, 16, 26 questions answered affirmatively; one of the auxiliary questions answered affirmatively); the Group Ⅲ, those without obvious psychological problems (neither the first nor the second group). Neither the first nor the second category was satisfied).

Measurements and Statistical analysis

The data used in this study came from various psychological surveys of new students in a higher vocational institution in Guangdong Province over a six-year period. The tests were all focused on the 2 months after the new students reported to enrollment. All new students were required to participate, and students were uniformly assigned to a school computer classroom within a specified time frame, where trained personnel assisted teachers and guided students through the test. The test questionnaire relied on Guangzhou Qinglang Psychology software and was automatically entered into the database. The results obtained were statistically analyzed in this study using spss17.0.

III. RESULTS

Factors and total score

In this study, a one-way ANOVA was conducted on the total UPI score and each factor score, and the results are shown in Table 2. The results show that the class of 2020 is significantly lower than previous years' freshmen on the total UPI score, and the class of 2020 is significantly lower than previous years' freshmen on the three factor levels of depression, neuroticism, and anxiety. The trends of the total UPI score and the three factors

over the years are shown in Figure 1.

Table 2 . The total score of UPI and the score of each factor for freshmen in the past six years($\bar{x}\pm s$)

Year	Depressed	Nervousness	Anxiety	Total UPI score
2015	$4.25\pm3.93_{a}$	$5.21\pm4.96_{a}$	$0.84\pm1.02_{ab}$	$10.67\pm9.46_{a}$
2016	$4.08\pm3.95_{ab}$	$4.86\pm4.82_{ac}$	$0.84\pm1.05_{ab}$	$10.16\pm9.46_{ac}$
2017	$4.04\pm3.81_{ab}$	$4.84\pm4.76_{ac}$	$0.85\pm1.04_{ab}$	$10.09\pm9.21_{ac}$
2018	$3.77\pm4.09_{b}$	$4.38\pm4.91_{b}$	$0.77\pm1.05_{a}$	$9.27\pm9.78_{b}$
2019	$3.99\pm4.32_{ab}$	$4.55\pm5.13_{bc}$	$0.84\pm1.11_{b}$	$9.75\pm10.28_{bc}$
2020	$3.31\pm4.02_{c}$	$3.88\pm4.81_{d}$	$0.71\pm1.03_{c}$	$8.23\pm9.58_{d}$
$F(5, 21276)$	26.13	27.89	12.59	27.29
P	<0.001	<0.001	<0.001	<0.001

Note. Differences in scale means for each column were based on the Games-Howell test at the 0.05 level. Where subscripts that contain the same letter indicate that there is no significant difference between the two in the post hoc test, and those that contain different letters indicate that there is a significant difference(Hazan & Shaver1987).

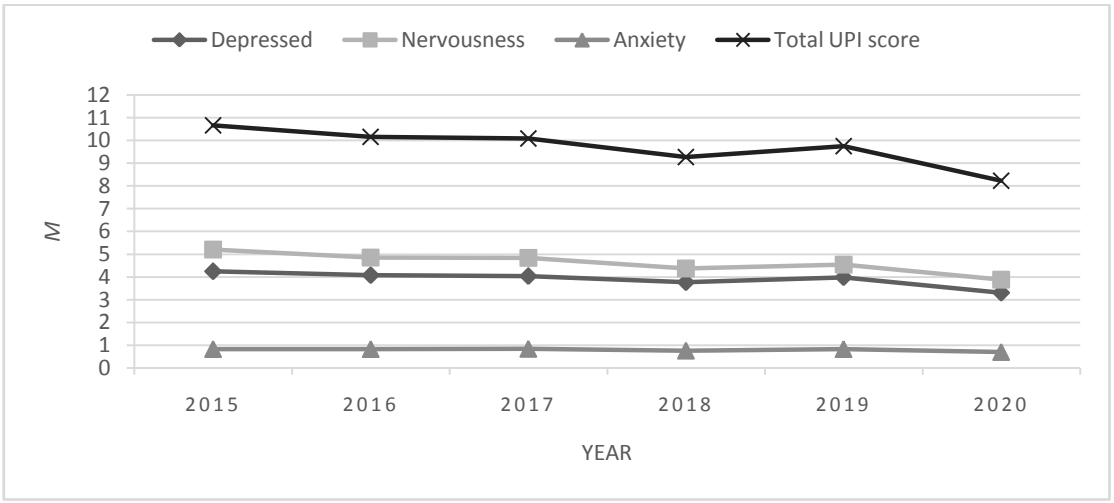

*Fig 1.*Change in UPI total score and mean value of each factor, 2015-2020.

UPI results detection rate

In this study, the detection rates of UPI results for freshmen in the past six years were compiled, in which the overall Group Ⅰ detection rate was 13.05% and the Group Ⅱ detection rate was 23.67%, and the Group Ⅰ and Group Ⅱ detection rates for each generation and the changing trends are shown in Figure 2. The results show that the Class of 2020 is at the lowest level ever in both Group Ⅰ and Group Ⅱ detection rates, with the Class of 2015 having the highest Group Ⅰ detection rate of 14.37%.

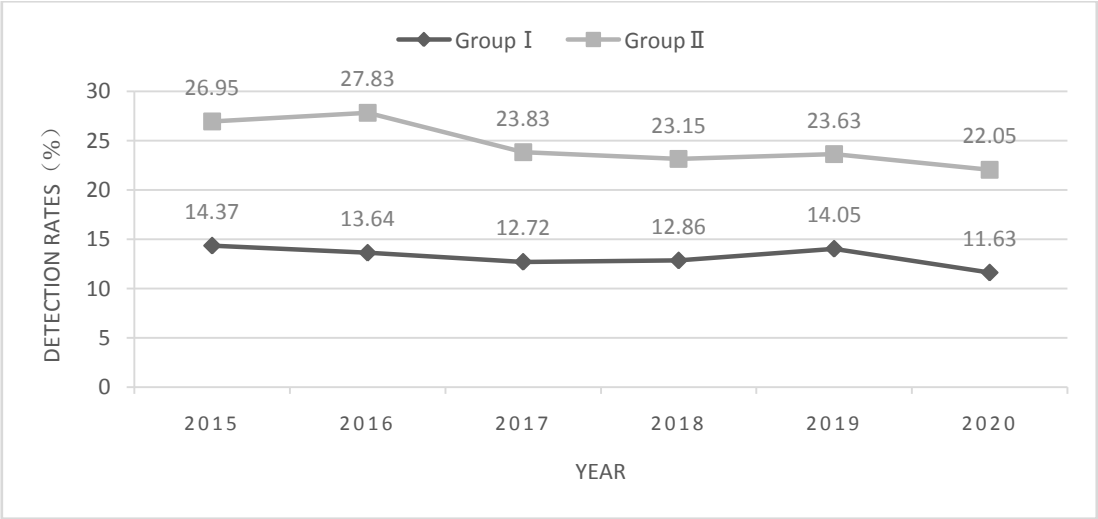

Fig 2. UPI Group Ⅰ and Group Ⅱ detection rate change,2015-2020.

Comparison of Group Ⅰ detection rates in terms of demographic differences

In this study, chi-square tests were conducted on demographic variables for Group Ⅰ of UPI detection, and the results are shown in Table 4. The results show that the detection rate of Group Ⅰ is significantly higher among females than males, among arts students than engineering students, and among specialist level students than undergraduate level students.

Table 4. Comparison of demographic differences in Group Ⅰ

	Group Ⅰ	Other	χ^2	*p*	Detection rate of Group Ⅰ
Sex			31.40	<0.001	
Male	1491	10975			11.96%
Female	1286	7530			14.59%
Subject Type			5.03	0.02	
Liberal arts	1594	10202			13.51%
Engineering	1183	8303			12.47%
Academic Level			24.72	<0.001	
Undergraduate	665	5271			11.20%
Junior college	2112	13234			13.76%

Comparison of demographic differences in total UPI scores

In this study, independent sample T-tests were conducted on the total UPI scores of freshmen in these six years in terms of gender, type of major, and level of education, and the results are shown in Table 5. The results show that in terms of total UPI scores, female students are significantly higher than male students, liberal arts students are significantly higher than engineering students, and junior college studentare significantly higher than undergraduate students.

Table 5. Comparison of demographic differences in UPI total scores

	UPI Total score($\bar{x}\pm s$)	*t*	*P*
Sex		-11.51	<0.001
Male	8.71±9.56		
Female	10.29±10.11		
Subject Type		3.90	<0.001
Liberal arts	9.60±9.85		
Engineering	9.07±9.78		
Academic Level		-12.32	<0.001
Undergraduate	8.07±9.31		
Junior college	9.86±9.97		

The past six years of freshman HF options

This study collates and analyzes the options for the freshmen of the classes of 2015-2020, and summarizes the options that have ranked in the top five in terms of selection rate among the freshmen in recent years, and the results are shown in Table 6. the results show that among the questions that ranked in the top five in terms of selection rate among the freshmen at all levels, 9 and 58 questions ranked in the top at all levels of the survey; 52 questions ranked in the top five years out of six; 14 and 42 questions occupied four years; and 38 questions have been in the top five for relatively few years.

Table 6. The top five options selected in the past six years of freshman UPI

Rank	2015(%)	2016(%)	2017(%)	2018(%)	2019(%)	2020(%)
1	58(44.30)	58(43.20)	58(42.20)	58(36.50)	9(39.10)	58(35.30)
2	9(39.90)	9(39.60)	18(37.30)	9(35.70)	58(37.00)	9(31.40)
3	14(35.70)	14(35.90)	9(36.10)	52(31.30)	52(31.20)	52(27.90)
4	52(32.50)	52(33.40)	38(32.33)	14(28.10)	14(30.10)	38(27.10)
5	38(31.60)	42(30.40)	52(32.26)	42(27.30)	42(29.30)	42(25.90)

Note.9 " Over-worry about my future", 14 " Distracted", 18 " Ache in neck and shoulder", 38 " Lack ofconfidence", 42 " Over-suspicious", 52 " Cannot give up repeating things", and 58 " Care about others' gaze".

IV. DISCUSSION

Analysis of UPI results of new students in the past six years

Hu Weijian(2018), in compiling the results of the UPI census of freshmen in colleges and universities nationwide during the decade of 2008-2017, summarized that the overall detection rate of the first category of freshmen in colleges and universities nationwide was 13.03% (number of Group Ⅰ: 28,141, total number: 216,038).There is no significant difference between the freshman Group Ⅰ detection rate (13.05%) and the overall national freshman class at this higher education institution (χ^2=0.01, p=0.93), indicating that the freshman class at this higher education institution is at a normal level overall, but still at a high level compared to some colleges and universities (χ^2=186.15, χ^2=21.61, p_s<0.001) (Han Jing2009; Liu Xuezhen et al.2012). This may be due to the fact that vocational colleges are mainly at the specialist level and there are differences in the level of mental health among students at different academic levels(Liu Zhenya et al.2017), which is also consistent with the results in Table 4 that the detection rate of Group Ⅰ of students at the specialist level is significantly higher than that of students at the undergraduate level.Compared to the general undergraduate students, the lack of motivation and learning efficiency are more common in the group of higher vocational junior college student, in addition to some potential problems such as poor frustration tolerance and emotional control, and lack of moral sense(Qiu Kaijin2007).

In addition, the collation of the total UPI scores and the scores of each factor of freshmen in previous years found that the total UPI scale scores and the scores of each factor of freshmen in the class of 2020 were significantly lower than those of freshmen in previous levels, and the overall trend was decreasing, which is consistent with the results of the historical study of Xin Sufei et al.(2018) on the changes of mental health level of senior students, and with the development of the times, the degree of mental health of senior students has improved(Xin Ziqiang et al.2012).This change has a lot to do with the concern of the community about mental health issues, and the national level also attaches great importance to it, issuing the "Guidance on Strengthening Mental Health Services", which clearly proposes to improve the mental health service system and strengthen the popularization of mental health-related knowledge, providing policy support for the development of mental health work, all of which have improved people's mental health to a great extent.

Analysis of demographic differences in UPI results

The analysis of differences in demographic variables of total UPI scores and of Group Ⅰ of detection rates revealed that the female student group had significantly higher rates of Group Ⅰ of detection and total scores than the male students, which is consistent with the results obtained in previous studies(Liu Baiqiao2009).Differences in anxiety, depression, and other areas that exist between male and female students may contribute to this situation.A psychological survey using the SCL-90 scale for 7763 freshmen by He Xinzhan et al.(2006) found significant differences between genders on depression and anxiety factors, with both female students being significantly higher than male students. Li Liying & Zhang Zangyun(2012)study also found that females scored significantly higher than males on several dimensions such as interpersonal sensitivity, depression, and anxiety, and the reasons for these differences may arise from the differences in certain aspects of female and

male personality traits caused by, for example, daring nature, cowardice, and timidity(Liu Meijuan & Yu Hua1995).The analysis of differences for students of different disciplines shows that the total UPI scores and Group Ⅰ of detection rates are significantly higher for students of arts than for students of engineering, which is consistent with the results of previous studies(Shi Qiong et al.2016). This may be due to the different coping strategies used by students from different disciplines when facing problems. Compared to science and engineering students, arts students use more negative coping styles, such as: blaming themselves and avoiding, while science and engineering students are more likely to face and try to solve problems(Wu Feng et al.2007), and negative coping styles can have adverse effects on people's well-being levels, mental health, and other aspects(Hu Junsheng & Cheng Shuzhen2008; Yang Chenfan2018).

From the high-frequency options in recent years, we can see that the psychological problems in several grades are relatively consistent, mainly interpersonal relationships are more sensitive, some lack of self-confidence, neurotic tendencies and OCD tendencies, which are consistent with the results of previous studies(Chen Zhe et al.2012; Wang Bingyu et al.2011). It indicates that college students in this higher education institution are similar to the college students of the same age in general, and are also troubled by these common problems. However, it is worth noting that 9 questions "worrying too much about the future" and 38 questions "lack of self-confidence" are in the top positions among the students in this college, which is different from the results of a previous study on students in a general college (their combined This is different from the results of a previous study on students in a general university (the top five items were 53/58/57/22/7) (Shi Qiong et al.2016; Wang Bingyu et al.2011), which may be due to the frustration that senior students encountered in their previous studies (e.g., failure in college entrance exams), which in turn had a negative impact on their self-confidence building.

V. CONCLUSION

(1) The mental health level of freshmen in higher vocational institutions is comparable to the overall health level of freshmen nationwide.
(2) The mental health level of freshmen in higher vocational institutions has been on the rise in the past six years, and the three aspects of depression, neuroticism and anxiety have also been improving as a whole.
(3) With regard to the mental health level of senior vocational students, male are higher than female, engineering is higher than arts, and undergraduate is higher than specialist.
(4) The psychological distress of senior vocational students in interpersonal relationship, self-confidence and OCD tendency is more prominent.

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