Analysis of Scl-90 Survey Results of Chinese University Freshmen in Recent Five Years and Determination of Their Norm

Xun Gong

Changsha University of Science & Technology, Changsha, Hunan, China

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Abstract: This Paper Selects "Freshmen" and "Scl-90" as Subject Words to Search for Literature, and Conducts Meta-Analysis on Relevant Papers. It is Concluded and Proved That the Effect of Each Factor in Scl-90 is Higher Than That of the National Norm in 2015 in Varying Degrees, But the Mental Health Level is Relatively Normal. the Results Show That among the Nine Factors of Scl-90, Only the Terror Factor is Different in Gender, and Other Factors Have Certain Regional Effect. Based on the Results of Meta-Analysis, This Paper Calculates the National Norm of Chinese University Freshmen, and Confirms That There is No Serious Deviation in the Current Mental Health Level of Chinese University Students.

1. Introduction

1.1 Literature Review

The SCL-90 symptom checklist shows that college students have different degrees of psychological problems, such as obsession, anxiety, depression, paranoia and other factors scores higher than the national norm. Schools and teachers should timely change their education methods based on this situation (Wu, 2017). SCL-90 was used to survey 17557 freshmen from 2014 to 2018, and the SCL-90 norm of college students of higher vocational engineering was constructed. The results show that the SCL-90 norm of college students is lower than the National Youth norm (Guo, 2019). At present, the overall level of students is significantly different from the national norm in anxiety, hostility, somatization and psychosis (sun, 2016). SCL-90, EPQ and adult scale were used to investigate some college students, and it was found that the freshmen in general have the personality characteristics of emotional stability, low concealment ability and extroversion; the female students have a high level of mental health, and the male and female students have a high consistency in the aspects of interpersonal sensitivity and obsessive-compulsive disorder. EPQ and SCL-90 are widely used in psychological analysis of college students (Zhang, 2015).

1.2 Research Purpose

In the past five years, with the increasing number of college students dropping out of school, the society has paid more and more attention to the mental health of college students. When college freshmen enter the campus, they should have a preliminary understanding of their mental health so as to take further mental health interventions and strengthen the mental health education of college freshmen (Fang and Xie, 2017). It is now widely accepted in academic circles that the current mental health of freshmen is not good, and their mental problems are gradually increasing. SCL-90 is the most widely used method in mental health assessment. In order to have a more accurate and objective comprehensive study on mental health problems of college freshmen, this paper uses meta-analysis to further explore. Through the research on the mental health status of SCL-90 as a test tool, the comprehensive results are obtained. This study can accurately get the current psychological problems of university freshmen, and through comparison, we can know which aspects of mental health level deviation, provide a certain basis for the school to carry out mental health education, which is conducive to the healthy development of university freshmen and the smooth development of school related education activities.

2. Overview of application methods

2.1 Literature Search

Input the keywords "SCL-90" and "university freshmen" in China HowNet database for Chinese journal retrieval, and get 120 research results published from February 2015 to September 2019. Randomly select about 4 research reports from each year as raw research materials, and totally select 30 reports, and the research year is 2015-2019. The number of reports in these five years is 5, 6, 5, 6 and 8 respectively.

2.2 Method of Statistical Analysis

Among the 30 selected reports, those without explicit gender analysis were classified into one category, and those with explicit gender analysis were divided into two categories: male and female. After the split, 68 research results were obtained. Then, the average score of the factors included in the 68 research results is converted into effect quantity, and each data will have 7 factors and 8 Effect quantity in total. Therefore, the factor average effect quantity is the average result of the eight effect quantities, not the result compared with the total score of the norm.

The calculation tool and formula of the effect amount are $d_i = (M_i - M_n)/SD_p$, in which the subjects' score of study i is M_i ; i is the number of the original report; M_n is the average score of the norm (hereinafter referred to as the national norm) aged 18-29 years in 2015; SD_p represents the standard deviation of the national norm.

After calculating the effect amount, we should judge it. Cohen proposed to divide the absolute value of the effect amount into three categories: large (d > 0.7), medium (0.2 < d < 0.7) and small (d < 0.2). A large amount of effect indicates that there is a big difference between the control group and the experimental group; a small amount of effect indicates that there is no difference between the control group and the experimental group. In order to explain the effect quantity more accurately, the effect quantity is transformed into hundreds of quantiles on the basis of normal distribution, and the effect quantity is interpreted on this basis. This method assumes that if random factors cause the relationship between dependent variables and independent variables to change, and the effect amount can be calculated by percentile 50. Finally, judge whether the interval contains 0 to judge the effect amount. If it is caused by fixed factors, there is a substantial difference between the control group and the experimental group.

3. Analysis of scl-90 survey results of chinese university freshmen in recent 5 years

Based on the year, this paper summarizes the number of factors in 68 research results, and then calculates the average effect amount, as shown in Table 1. The results show that the mental health level of Freshmen in five years is lower than the national norm., d = 0.12 and 95% confidence interval does not contain 0 (0.05-0.16); among the 9 factors, anxiety (d = 0.21), psychoticism (d = 0.24) and obsession (d = 0.25) are the most obvious ones, while the effect of other factors is relatively small, such as obsession factor (Table 2), d = 0.25 percentile is 54.6, indicating that there are 5. 4.6% of freshmen have higher compulsive factors than the national norm. According to the average scores of 9 factors in SCL-90 of freshmen, we can see that the average score of obsessive-compulsive disorder is the highest, and the average score of somatization is the lowest.

According to statistics, in the five-year research reports, the effects of anxiety, obsession and psychosis are higher than the national norm, and somatization is on the decline. It can be seen from this that the average effect amount and the effect amount of each factor in 2015 are large, but the effect amount in 2017 is small or even negative, and the specific reasons are not clear at present. The Research Report of this selection shows that the overall effect d = 0.11 is small, indicating that there is a certain difference between the scores of 9 factors of freshmen and the national norm, but it is not significant.

Year	Somatization	Interpersonal	Obsession	Anxious	Depressed	Terror	Hostile	Psychosis	Paranoia	Average
		sensitivity								
2015	0.16	0.50	0.29	0.31	0.50	0.29	0.22	0.50	0.52	0.36
2016	0.23	0.48	0.21	0.29	0.42	0.22	0.30	0.32	0.46	0.32
2017	0.02	0.33	-0.01	0.03	0.19	0.21	0.31	0.12	0.32	0.17
2018	0.04	0.29	-0.02	-0.01	0.14	0.02	0.05	0.12	0.21	0.09
2019	0.01	0.19	-0.02	-0.01	0.14	0.02	0.14	0.26	0.04	0.09
Average	0.03	0.26	-0.01	0.03	0.21	0.04	0.16	0.09	0.24	0.11

Table 1 Effect Quantity And Average Effect Quantity of Scl-90 of Freshmen in 2015-2019

Table 2 Average Effect Quantity and Descriptive Statistics of Scl-90 Factors for Freshmen

Factor	Average effect quantity	Standard value	Low	High	Percentile
Somatization	0.03	0.21	-0.05	0.10	50.6
Interpersonal sensitivity	0.25	0.23	0.21	0.32	59.4
Anxious	-0.01	0.22	-0.04	0.04	48.6
Terror	0.04	0.24	-0.02	0.10	51.0
Psychosis	0.21	0.29	0.15	0.11	52.9
Obsession	0.04	0.25	-0.01	0.24	49.6
Depressed	0.15	0.30	0.07	0.13	54.2
Hostile	0.10	0.23	0.03	0.31	56.8
Paranoia	0.25	0.24	0.20	0.15	61.3
Average	0.11	0.22	0.06	0.16	53.4

On the basis of the above research results, recalculate the constant modulus scores in each factor of SCL-90. First, calculate the weighted mean value (X_T) to further calculate the joint standard

deviation, $S_T = \sqrt{\frac{\sum N_i S_i^2 + \sum N_i D_i^2}{\sum N_i}}$ (X_i is the mean value of each Research Report). From the

perspective of different dimensions of SCL-90, there are some differences between Freshmen and 2016 norm and 2018 norm, so we can take the research of freshmen as reference norm in the future to get more accurate results.

Except for the items without gender analysis in 68 research results, the gender difference in the effectiveness of each factor was tested after the sample size was weighted (the total sample size was 31426, including 10065 for men and 21361 for women). The results showed that only the terrorist factor had statistical significance (P = 0.045), and the difference in the other factors had no statistical significance, which showed that when the system of SCL-90 norm could In order not to consider gender differences.

When analyzing the effect amount of subjects from five regions (North China, central China, Northwest China, Northeast China and East China), depression (P = 0.032) and obsession (P = 0.037) were significantly different, but there were many complex factors, so we will not analyze them temporarily, and the differences of other factors were small and not statistically significant. Righteousness.

4. Conclusion

The results of SCL-90 showed that 15.8% of the freshmen had different mental health problems, and 79.6% of them were at the level of mental health, but the average effect of compulsion, depression, paranoia, interpersonal sensitivity, anxiety and terrorist factors was higher than that of the national norm.

The main factors of the low level of mental health of college freshmen are as follows. First of all, the pace of life in today's society is fast, college students are prone to maladjustment and other phenomena, and problems such as obsession, depression, paranoia, interpersonal sensitivity, anxiety, terror and other aspects are more likely to occur. Secondly, most of the college students come from the only child family, whose mental health level is higher than that of the non only child family. The main reason is that non only children are easily treated differently from their parents, resulting in psychological imbalance, loneliness, jealousy and other bad emotions. With the development of the

internet and modern information technology, the network is obviously more closely related to the daily life of college students, which leads to the decrease of the relationship between college students and people in real life, the integration of virtual online communication mode into real life, showing indifference and interpersonal maladjustment. Therefore, teachers of all subjects should actively combine the subject teaching objectives with psychological education, establish the planned and systematic psychological education objectives of teaching subjects based on the characteristics of subjects and teaching materials, further realize the teaching objectives in the teaching process, cultivate students' creative thinking from different angles, develop students' personality in an all-round way, and improve their comprehensive quality. In addition, college freshmen are about 17-20 years old. Although their physiological conditions are basically mature, their psychological level has not been improved. With the growth of their age, college freshmen's self-awareness is increasing, and there are some psychological conflicts and inner contradictions. They not only hope to have a better interpersonal relationship, but also to complete the learning tasks while relaxing. However, the new environment may bring them psychological gap, which will lead to psychological problems. Therefore, it is necessary for colleges and universities to provide psychological guidance to freshmen. Colleges and universities should attach importance to the popularization of sex education, focus on the development of psychological education activities, set up a psychological consulting room, and strive to take corresponding intervention measures for students with psychological problems; in addition, colleges and universities and teachers should actively communicate with students' parents. According to the above measures, the family school association can be realized to reduce students' mental health problems.

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2) Hunan Provincial Education Science "Thirteenth Five-Year Plan" Project "Construction of Hunan University SCL-90 Newborn Normal Model" (XJK016B XL004)

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