Research on the Mental Health Characteristics of Chinese Special Education Teachers

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Abstract

Objective: To investigate and analyse the mental health characteristics of Chinese special education teachers.

Methods: Based on the random sampling and snowball sampling, SCL-90 was used to survey on six hundred and eighty-one Chinese special education teachers.

Results: The detection rate of the mental health symptoms of Chinese special education teachers was high (14.51%-34.36%). All SCL-90 factors were remarkably higher than national norms (p < 0.001). The mental health levels of female teachers were not as good as male teachers; and the mental health levels increased with special education teachers' age and teaching experience. Young teachers showed more mental health symptoms of hostility, terror and psychosis; novice and skilled teachers showed more mental health symptoms of interpersonal sensitivity and terror; the third-level teachers showed more mental health symptoms of somatization, terror and psychosis.

Conclusion: There were obvious mental health symptoms among Chinese special education teachers. More attentions should be paid to the psychological conditions of the groups of mental health, such as female teachers, young teachers, novice and skilled teachers, and junior-title teachers.

Keywords: Special education teachers, SCL-90, Mental health, Mental health symptoms, Sampling survey

Introduction

With the development of special education, special education teachers were increasingly being valued by the government, communities and families. Because special education teachers were in special education and teaching environment, they often faced different pressures from general teachers, and were more likely to have mental health problems. Those mental health problems would affect the qualities of individual's life and special education (Zhang, Bai, & Li, 2020). Special education teachers belong to a special group with high stress; they are more likely to have more stress reaction in the process of teaching practices (Xu, 2004). Some researchers found that special education teachers' mental health levels were relatively lower than ordinary teachers, mental variables of social support and teaching efficacy, and so on (Xu, 2004; Shang & Li, 2007; Yang &

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health symptoms' detection rate was higher than ordinary teachers (Xu, 2004; Feng, 2019). Some researchers also confirmed that there were some relationships between mental health and other factors, such as the background variables of gender, teaching experiences, and the psychological Zhang, 2010; Zhao & Wang, 2012; Zhang & Wei, 2014; Zhao & Wang, 2016). Some researchers have also adopted various methods to investigate special education teachers' mental health, which were not optimistic compared with other teachers. Ervasti et al. examined the levels of mental health and stressors among special education teachers and ordinary teachers in Finland. They found that although there was no difference between general and special education teachers on mental health, male special education teachers were more likely to suffer abuse and violence than male colleagues in general education; compared with ordinary teachers, female special education teachers were also more risks of mental abuse and physical violence (Ervasti, et al., 2012). To understand rural special education teachers' job burnout, by using the hybrid methods, Garwood et al. found that rural special education teachers had some problems

such as unclear roles, too many roles, emotional exhaustion, and lack of sense of accomplishment, which seriously affected their mental health (Garwood, et al., 2018). Repie (2005) also investigated the mental health of ordinary teachers and special education teachers, and found that there were some differences between them; and special education teachers were far worse mental health levels than ordinary teachers.

In China, although some researchers have investigated the mental health of special education teachers, judging from the existing researches in China, there were some shortcomings. First of all, the selection scope of the research objects had some obvious regional characteristics, mainly from individual provinces and cities (e.g. Shandong province, Anhui province, Zhejiang province, Chongqing city, Beijing city, Ningbo city, etc.), and the sample size ranges were from dozens to hundreds (mostly within 200, individual survey having more than 300 people). So, the researches on the mental health of Chinese special education teachers were lack of good representation on the selection range and sample size of the subjects. Secondly, current research tools on mental health mainly included two types: one was used to investigate the overall mental health symptoms of special education teachers, such as SCL-90, MHT, and GHO; the other was to investigate the specific mental health indicators of special education teachers, such as SDS, SAS, and so on. Although some results have been obtained by using these tools, the comparability of results was reduced by different research tools. But according to current researches, Symptom Checklist 90 (SCL-90) was a very suitable tool for a mental health survey of the general population, and the most widely used tool on mental health researches (Urbán, Arrindell, & Demetrovics, 2016; Elliott, Wagner, Sales, et al., 2016). It could comprehensively report the mental health status of a certain group in detail.

So, this research would use Symptom Checklist-90 (SCL-90) to conduct an online questionnaire to survey on the full-time special education teachers in mainland China through the "questionnaire star" network survey platform, and to investigate the overall situation and characteristics of special education teachers' mental health. And the purpose of this research was to complete the investigation and analysis of the general status of special education teachers' mental health, and to find the differences in various background variables, to provide some basis evidence for better promotion of special education teachers' mental health.

2. Methods
2.1 Survey objects

By using the random sampling and recommended sampling methods, the study selected the full-time special education teachers in mainland China in the year of 2018, and "Questionnaire Star" was used to conduct online questionnaire surveys. The research was approved by "the Institutional Review Board of the College of Education at Huaibei Normal University in China".

Sample size estimation: According to the scientific determination method of sample size in sampling survey (Zhang, 2008), the first step to calculating the initial sample size, i.e., $n1 = P (1-P) / (e2/Z2+ P (1-P) / N)$. Taking p = 0.5, e = 0.05, and Z = 1.96, the result of N was 56000, and n1 was about 384 (according to the statistics of the Ministry of Education of China in 2017, there were 55,979 full-time special education teachers in mainland China, including 41,278 female teachers). Because this survey mainly used the recommended random sampling, taking into account the possible deviations of the sample and the unrecoverable or too many invalid questionnaires caused by off-site online surveys, the study took the expected effective answer rate (r = 50%) as the consideration, and the amount of the initial sample was n1. On this basis, the final sample size, n2 = n1 / r = 768, was calculated, and the online questionnaire was distributed. Finally, 726 questionnaires were collected, and 45 invalid questionnaires were removed. A total of 681 valid questionnaires were collected (IP address of the online questionnaire answers were displayed that the source covers almost mainland China), and the questionnaire validity rate was 93.80%.

The estimation of a sample size could also be judged by experience. Generally speaking, the overall scale was between 10,000 and 100,000, and the sampling ratio was generally maintained between 1% and 5% (Yuan &Li, 2013). The effective sample size of this survey was 681 people, accounting for 1.22% of the total number of full-time special education teachers in Mainland China in 2017, which met with the general experience judgment standard of the experience sample size range.

2.2 Survey tool

Symptom Checklist 90 (SCL-90). It was a self-rating scale, containing ten factors and ninety items. The scale used a 5-points scoring method (from 1 to 5), but the tenth factor was not scored. Individuals getting higher scores on the scale showed they would have more obvious symptoms

on mental health (Wang, Wang, & Ma, 1999). In our research, Coefficient α of the total scale was 0.99, Coefficient α of the factor of somatization was 0.92, obsessive-compulsive disorder was 0.89, interpersonal sensitivity was 0.90, depression was 0.92, anxiety was 0.91, hostility was 0.87, terror was 0.88, paranoia was 0.86, and psychosis was 0.90.

This research also designed some demographic variables, including (1) gender (male, female); (2) age (≤25 years old, 26 to 35, 36 to 45, and ≥46); (3)) Teaching experience (1 to 5 years, 6 to 10 years, 11 to 15 years, and ≥16 years); (4) Professional titles (unrated, the third-level, the second-level, the first-level, and advanced).

2.3 Statistical Analysis

The data were analysed by SPSS 19. 0 for percentage, mean, standard deviation, and difference analysis such as t-test and F-test.

3. Results

3.1 The Overall Mental Health Status of Chinese Special Education Teachers

The study shows that each factor of Symptom Checklist Scale (SCL-90) have an average score of ≥2 points, would be assessed as mental health symptoms, indicating that the subjects have mild or higher mental health problems on the factor; and the average factor score of ≥3 points would indicate that subjects have moderate or higher mental health problems on the factor (Wang, Wang, & Ma, 1999). The survey finds that the detection rate of special education teachers in mainland China with mild and above psychological problems are 14.51% to 34.36%, and the three factors with the highest detection rate are obsessive-compulsive disorder (34.36%), interpersonal sensitivity (27.27%), and depression (24.23%). The detection rate of moderate and severe psychological problems ranged from 3.08% to 6.75%, and the three factors with the highest detection rate are obsessive-compulsive disorder (6.75%), hostility (5.58%), and paranoia (5.29%).

Table 1. **The detection rate of psychological problems among Chinese special education teachers**

Factor	Factor score ≥ 2		Factor score ≥ 3	
	Number of people	Percentage (%)	Number of people	Percentage (%)
Somatization	147	21.59	27	3.96
Obsessive-compulsive disorder	234	34.36	46	6.75
Interpersonal sensitivity	189	27.75	35	5.14
Depression	165	24.23	31	4.55
Anxiety	136	19.97	26	3.82
Hostility	145	21.29	38	5.58
Terror	99	14.51	21	3.08
Paranoia	124	18.21	36	5.29
Psychosis	100	14.68	24	3.52

Comparing the survey results of Chinese special education teachers' mental health symptoms with the normal national scores in China (see Table 2), it is found that the special education teachers' scores on all factors of SCL-90 are higher than the national norm, reaching an extremely significant level (p<0.001). The study indicates that the mental health levels of Chinese special education teachers are far below the normal level.

Table 2. **Comparison the mental health symptoms of Chinese special education teachers and national norms (M+SD)**

Factor	Special education teacher (n=681)	National norm (n=1388)	t
Somatization	1.66+0.59	1.37+0.48	12.61***
Obsessive-compulsive disorder	1.91+0.61	1.62+ 0.50	12.53***
Interpersonal sensitivity	1.74+0.63	1.65+ 0.61	3.87***
Depression	1.74+0.63	1.50+ 0.59	9.84***
Anxiety	1.65+.59	1.39+0.43	11.47***
Hostility	1.66+0.60	1.46+ 0.55	8.86***
Terror	1.47+0.59	1.23+ 0.41	10.45***
Paranoia	1.61+0.61	1.43+0.42	7.90***
Psychosis	1.55+0.57	1.29+ 0.42	12.08***

Note: *** means p < 0.001.

3.2 Analysis of the Mental Health Characteristics of Chinese Special Education Teachers

3.2.1 Characteristics of Gender

The study found that female teachers' scores on all factors of SCL-90 are higher on than male teachers, and there are significant differences in the two factors of obsessive-compulsive disorder and depression (t=2.37, 2.11; p<0.05) (See. Table 3), indicating that the levels of female teachers' mental health are generally lower than that of male teachers, and the symptoms of obsessive-compulsive disorder and depressive symptoms are particularly obvious.

Table 3. **Comparison the Characteristics of Gender (M+SD)**

Factor	Male (n=119)	Female (n=562)	t
Somatization	1.57+0.58	1.68+0.60	-1.89
Obsessive-compulsive disorder	1.80+0.58	1.94+ 0.62	-2.37*
Interpersonal sensitivity	1.67+0.61	1.76+ 0.64	-1.42
Depression	1.63+0.59	1.76+ 0.64	-2.11*
Anxiety	1.57+0.59	1.67+0.58	-1.64
Hostility	1.58+0.57	1.68+ 0.61	-1.72
Terror	1.38+0.61	1.48+ 0.59	-1.66
Paranoia	1.59+0.64	1.62+0.60	-0.37
Psychosis	1.50+0.56	1.56+ 0.57	-1.23

Note: * means p < 0.05.

3.2.2 Characteristics of Age

To analyse the characteristics of age effectively, the age is divided into four groups, i.e., A group (A≤25 years old, n=221), B group (26 years old≤B≤35 years old, n=221), C group (36 years old) ≤C≤45 years old, n=142), and D group (D≥46 years old, n=97).

The scores of the six factors of interpersonal sensitivity, anxiety, hostility, terror, paranoia, and psychosis for the four age groups from high to low are all A, B, C, and D, successively. The four age groups are very significant differences in interpersonal sensitivity factors (F =4.09, p<0.01), but no difference between each age group; there is very significant difference in the hostility factor (F=4.36, p<0.01), and very significant difference between A and D (p<0.01), B and D (p<0.05); there is very significant difference in the terror factor (F=5.29, p<0.01), and significant difference between A and C (p<0.05), A and D (p<0.01); there is significant difference in psychosis factor (F=3.63, p<0.05), and significant difference between A and D (p<0.05). The four age groups are no differences in anxiety and paranoia factors (F=2.33, 1.81; p>0.05). The scores of the two factors of obsessive-compulsive disorder and depression for the four age groups from high to low are all B, A, C, and D, successively, and significant differences in obsessive-compulsive disorder (F=2.89, p<0.05), having no difference between each age group, but no significant difference in depression (F=2.16, p>0.05). The scores of somatization factor for the four age groups from high to low are all D, B, C, A, successively, but there are no significant differences among the four age groups (F=1.59, p>0.05) (See. Table 4).

Table 4. **Comparison the Characteristics of Age (M+SD)**

Factor	A group (n=221)	B group (n=221)	C group (n=142)	D group (n=97)	F
Somatization	1.60+0.55	1.67+0.61	1.66+0.61	1.75+0.63	1.59
Obsessive-compulsive disorder	1.96+0.62	1.96+ 0.63	1.87+0.62	1.77+0.52	2.89*
Interpersonal sensitivity	1.83+0.67	1.78+ 0.64	1.64+0.62	1.62+0.54	4.09**
Depression	1.75+0.66	1.80+ 0.65	1.70+0.63	1.61+0.48	2.16
Anxiety	1.70+0.60	1.68+0.59	1.59+0.61	1.54+0.50	2.33
Hostility	1.73+0.64	1.70+ 0.58	1.65+0.64	1.47+0.46	4.36**
Terror	1.58+0.63	1.50+ 0.56	1.39+0.61	1.33+0.49	5.29**
Paranoia	1.68+0.65	1.61+0.58	1.58+0.63	1.51+0.51	1.81
Psychosis	1.62+0.62	1.58+ 0.52	1.49+0.59	1.43+0.47	3.63*

Note: *, ** means p < 0.05, 0.01.

The survey results show that the mental health levels of Chinese special education teachers decline with age; and the hostility, terror and psychosis of young teachers, who are under the age of 25, are more obvious.

3.2.3 Characteristics of Teaching Experience

To analyse the characteristics of teaching experience effectively, the teaching experience is divided into four sections, i.e., A section (1 year≤A≤5 years, n=351), B section (6 years≤B≤10 years, n=91)), C section (11 years≤C≤15 years, n=36), and D section (D≥16 years, n=203). The scores of somatizations for the four sections from high to low are all C, D, B, A, successively, and very significant differences (F=2.90，p<0.05), but no difference between each teaching experience. The scores of depression, hostility, and psychosis for the four sections from high to low are all B, A, C, and D, successively, there are no significant differences in depression (F=1.45, p>0.05), but significant differences in hostility and psychosis (F=2.88, 3.36, p <0.05) with no difference between each teaching experience. The scores of the five factors of obsessive-compulsive disorder, interpersonal sensitivity, anxiety, terror and paranoia for the four age groups from high to low are all B, A, D, C, successively. There are significant differences in interpersonal sensitivity (F=3.74, p<0.05), and significant difference between B and C (p<0.05). There are also very significant differences in terror (F=3.94, p<0.01), and significant difference between B and C (p<0.05). But there are no significant differences in the other three factors (F=2.31, 2.54, 1.98, p>0.05) (See. Table 5).

Table 5. **Comparison the Characteristics of Teaching Experience (M+SD)**

Factor	A section (n=351)	B section (n=91)	C section(n=36)	D section (n=203)	F
Somatization	1.59+0.55	1.72+0.64	1.76+0.83	1.72+0.60	2.90*
Obsessive-compulsive disorder	1.96+0.60	1.97+ 0.71	1.81+0.67	1.84+0.57	2.31
Interpersonal sensitivity	1.80+0.64	1.82+ 0.69	1.60+0.73	1.64+0.56	3.74*
Depression	1.75+0.64	1.83+ 0.68	1.71+0.74	1.67+0.55	1.45
Anxiety	1.67+0.57	1.75+0.68	1.56+0.72	1.57+0.54	2.54
Hostility	1.70+0.59	1.76+ 0.69	1.66+0.80	1.57+0.54	2.88*
Terror	1.52+0.58	1.54+ 0.67	1.35+0.74	1.36+0.52	3.94**
Paranoia	1.65+0.61	1.68+0.67	1.51+0.71	1.54+0.55	1.98
Psychosis	1.60+0.58	1.63+ 0.58	1.48+0.75	1.46+0.50	3.36*

Note: *, ** means p < 0.05, 0.01.

The survey results show that the mental health levels of novice teachers (1-5 years of teaching) and killed teachers (6-10 years of teaching) are significantly lower than that of teachers with more than 10 years of teaching; the skilled teachers are more obvious about the interpersonal sensitivity and terror; and the somatization of teachers with more than 10 years of teaching is more obvious.

3.2.4 Characteristics of Professional Title

To analyse the characteristics of professional title effectively, the teaching experience is divided into four levels, i.e., A-unrated (n=207)), B-level3 (n=65), C-level2 (n=140), D-level1 (n=194), and E - advanced (n=75). The scores of somatizations for the five levels from high to low are all E, B, D, C, A, successively, and very significant differences (F=3.07，p<0.05), but no difference between each professional title. The scores of obsessive-compulsive disorders for the five levels from high to low are all B, C, A, E, D, successively, but no significant difference (F=1.00, p>0.05). The scores of paranoias for the five levels from high to low are all B, A, C, E, D, successively, but no significant difference (F=2.05, p>0.05). The scores of depression, anxiety, and hostility for the five levels from high to low are all B, E, C, A, D, successively, but no significant differences (F=1.38, 1.84, 2.31, p>0.05).The scores of interpersonal sensitivity, terror, and psychosis for the five levels from high to low are all B, A, E, C, D, successively, but no significant difference in interpersonal sensitivity (F=2.30, p>0.05) ; there is significant difference in terror (F=2.65, p<0.05), but no difference between each level ; there is very significant difference in psychosis (F=3.70, p<0.01), but no difference between each level (See. Table 6).

Table 6. **Comparison the Characteristics of Professional Title (M+SD)**

Factor	A unrated (n=207)	B-level3 (n=65)	C-level2 (n=140)	D-level1 (n=194)	E-advanced (n=75)	F
Somatization	1.56+0.57	1.75+0.61	1.62+0.56	1.71+0.61	1.78+0.65	3.07*
Obsessive compulsive disorder	1.93+0.61	1.99+ 0.65	1.95+0.63	1.85+0.60	1.92+0.60	1.00
Interpersonal sensitivity	1.79+0.66	1.91+ 0.64	1.71+0.63	1.66+0.60	1.73+0.61	2.30
Depression	1.72+0.66	1.88+ 0.64	1.74+0.61	1.68+0.59	1.79+0.66	1.38
Anxiety	1.64+0.56	1.81+0.62	1.65+0.61	1.59+0.57	1.70+0.64	1.84
Hostility	1.67+0.57	1.85+ 0.59	1.67+0.65	1.59+0.58	1.68+0.65	2.31
Terror	1.48+0.57	1.67+ 0.62	1.43+0.57	1.40+0.56	1.48+0.70	2.65*
Paranoia	1.61+0.60	1.81+0.67	1.60+0.61	1.57+0.58	1.60+0.62	2.05
Psychosis	1.56+0.57	1.79+ 0.64	1.54+0.52	1.48+0.54	1.55+0.58	3.70**

Note: *, ** means $p < 0.05$, 0.01.

The study the show that mental health levels of the third-level teachers are significantly lower than that of teachers with other professional titles, and mental health levels of the first-level teachers are relatively highest; the third-level teachers have more obvious symptoms of somatization, terror, and psychosis; and the advanced teachers have more obvious symptoms of somatization.

4. Discussion

The results of this survey found that mental health symptoms' detection rate among Chinese special education teachers was relatively high, and there were more obvious psychological problems, similar to the results of the previous related studies (Zhao & Wang, 2012). The study also analysed the demographic characteristics of Chinese special education teachers, such as gender, age, teaching experience, and professional title. Our research results found that mental health levels of female teachers were generally lower than that of male teachers, and the symptoms of obsessive-compulsive disorder and depression were obvious; young teachers under the age of 25 had a lower level of mental health, with some obvious symptoms of hostility, terror, and psychosis; novice teachers (1-5 years) and skilled teachers (6-10 years) had lower levels of mental health, having some obvious symptoms of interpersonal sensitivity and terror; the levels of mental health of the third-level teachers were also lower than that of other teachers, having some obvious symptoms of somatization, terror, and psychosis. These results were also more consistent with previous research results (Zhao & Wang, 2012), suggesting that the mental health problems of female teachers, young teachers, novice and skilled teachers, and low

professional title teachers should be more concerned. Therefore, in the process of career development of special education teachers, while emphasizing education theory and teaching skills training, mental health care capabilities should also be regarded as the main content of the training (Cai, 1998; Bakken & Obiakor, 2016; Hester, Bridges, & Rollins, 2020).

Rough comparisons of the representative researches of Zhang and Wei in 2014, and Xu in 2004, the results of this study showed that the overall and specific indicators of the mental health status of Chinese special education teachers were far worse than five years ago (the year of 2013), even fifteen years ago (the year of 2003). Although the differences of sampling area and sampling size should lead to the lack of scientific comparisons, we had found a preliminary fact, i.e., in recent years, the mental health of Chinese special education teachers has shown a significant downward trend. It has not been improved due to the country's increasing emphasis on special education. To solve the contradiction between the increasing demand for special education in the whole society and the unbalanced or insufficient development of special education, the state has invested a lot of funds and hardware facilities, introduced various policies to ensure the sustained and healthy development of special education. Still, these measures had not further demonstrated the special education teachers' political, economic and social status. Moreover, the governments and schools had also blindly emphasized the importance of special education, constantly imposing requirements and burdens on special education teachers, but neglected the humanistic care and psychological counseling of special education teachers. All of these had made special education teachers feel

more and more psychological stresses.

In general, this research had some practical significances. First of all, according to the results of this research, current mental health levels of special education teachers would be found, and government management departments and special schools could pay attentions to them and adopt some effective measures to reduce their psychological stress and to relieve their mental health symptoms. Secondly, according to the manifestations of special education teachers' mental health from different backgrounds, targeted measures could be taken to those teachers with obvious mental health symptoms.

5. Limitations and Future Research

This study mainly used the questionnaires to describe the mental health characteristics of Chinese special education teachers in general, conducted the preliminary macro-analysis of the reasons that would cause more psychological problems in special education teachers, still the study had lacked some comprehensive investigations and in-depth analysis of these reasons. The focus of the next study should be shifted to the various factors that induce the psychological problems of special education teachers and their subgroups, adopt the qualitative and quantitative research methods comprehensively to deeply explore the subjective and objective factors which affect the mental health of special education teachers. Under these entry points, the researches should explore effective ways to improve the mental health levels of Chinese special education teachers.

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Disclosure

There are no conflicts of interest in our research.

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