RAIS RESEARCH ASSOCIATION for INTERDISCIPLINARY STUDIES
FEBRUARY 2018

DOI: 10.5281/zenodo.1196542

Study on the Relationship between Mental Health and Teaching Efficacy of Chinese Secondary School Teachers

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ABSTRACT: In this study, "Symptom Checklist 90, (SCL-90)" and "Teachers' teaching Efficacy Scale" were used in stratified sampling survey to 260 teachers in Chengdu to explore the relation between Mental Health and Teaching Efficacy. The results showed that: (1) Secondary school teachers' SCL-90 scores were significantly higher than the national norm; (2) In terms of "Teachers' teaching Efficacy Scale" scores and "personal teaching efficacy" scores, there were significant differences among teachers of different teaching ages; (3) there was a significantly negative correlation between mental health and the total score of teaching efficacy including the scores of all dimensions. The dimensions of symptoms such as depression and paranoid had a negative effect on teaching efficacy.
KEYWORDS: secondary school teachers, mental health, teaching efficacy
FUND INFORMATION: Humanities and Social Sciences of Ministry of Education Planning Fund (13YJA190004).

1. Problem posing

Regarding the sense of teaching efficacy, most domestic scholars agree with the definition of Ashton and Gibson (Gibson and Dembo, 1984), that is, teachers

'subjective judgment on their own ability to influence students' behavior and academic performance. It mainly consists of general sense of efficacy (teachers' relationship between teaching and learning, the role of education in student development's views and judgments, etc.) and personal teaching efficacy (whether teachers are capable of completing their teaching tasks and the belief of bringing up excellent students) (Yu, Xin and Shen 1995) two aspects constitute. As a common assessment of teacher quality indicators, teaching efficacy has a conspicuous correlation with students' academic achievement (Wu 2003), teaching motivation (Wang 2006), classroom questioning behavior (Liu 2010), teaching monitoring capability (Luo 2000) and teaching effectiveness (Qu 1999).

Besides, some scholars have observed that teaching efficacy has negative correlation with job burnout (Liu 2004; Meng 2008), depression (Wang 2006), mental health (Yang, Lv, and Zhan 2012; Huang et al. 2012; Ma 2008) correlation in recent year. However, some researchers (Zhao and Li 2002) found that the correlation between teaching efficacy and teachers' mental health is not significant. It using more standardized measurement tools and research processes to clarify the relationship between the two is necessary. In this study, the middle school teachers in Chengdu is the research subjects, to explore the relationship between the teacher's mental health and sense of efficacy, with a view to improving teaching effectiveness by improving the teaching of mental health, so as to better serve the teaching work.

2. Method

2.1. Subjects

A stratified sampling method was used to investigate junior high school teachers in seven middle schools in the downtown area, suburbs and outskirts of Chengdu. A total of 260 questionnaires were sent out, and 248 valid ones were retrieved. With a callback rate of 95.4%. The respondents ranged in age from 22 to 54, with 104 males (41.9%) and 144 females (58.1%), 46 (18.5%) with a teaching experience of less than 5 years, 60 with a teaching experience of 5 to 10 years (24.2%) ,142 (57.3%) with a teaching experience of more than 10 years.

2.2. Measurement Tool

This research uses Self-Assessment Questionnaire (SCL-90) revised by Wang Zhengyu (1984) to examines the mental health status of secondary school teachers. The scale has 90 items, including 10 dimensions: somatization, compulsion, interpersonal relationship, depression, anxiety, hostility, terror, bigotry, psychotic and

others. The project uses a 5-point scale, the range of "no", "mild", "moderate", "partial emphasis","serious", the lower the score, the higher the mental health level. The internal consistency reliability of the scale in this study was 0.991, indicating that the scale has a high-reliability level.

Instructor teaching efficacy measurement tool was "teacher teaching efficacy scale." made by Yu Guoliang and so on in 1995. The scale has 27 items in total, including two dimensions of general teaching effectiveness and personal teaching efficacy. And there are 10 general teaching efficacy items and 17 personal teaching efficacy items. Project preclude the use of 6-grade score, the higher the score indicates that teaching efficacy is higher. In this study, the internal consistency coefficients of the total scale and the two fractal dimensions were 0.88, 0.86, 0.88 respectively.

2.3. Testing and data analysis data

The method of stratified sampling was adopted to randomly select middle school teachers to conduct individual testing. All the reclaimed data were statistically processed and analyzed using SPSS 17.0.

3. Result

3.1. Middle school teacher's mental health

According to Tong Hui Jie (2010) of the research results, the empirical use of 2-point critical value to examine the detection of mental health in all dimensions of the detection rate of "not much significance," and cannot replace the normative reference. Therefore, this study uses the method of one-sample mean test to divide the survey participants' SCL-90 scores of all dimensions and the total score with the national norm in 2006. For comparison, the results shown in the following table:

Table 1. Middle school teachers SCL-90 dimensions and the total score and the domestic norm comparison

	Chengdu middle school teacher		national norm		t
	M	SD	M	SD	
somatization	1.7705	0.8453	1.4194	0.4429	6.555***
compulsion	1.9214	0.8333	1.6586	0.5165	4.966***
sensitive of interpersonal relationship	1.7016	0.7749	1.5115	0.4938	3.864***
depression	1.7674	0.8249	1.4980	0.4707	5.143***

anxiety	1.6512	0.7917	1.3437	0.3886	6.117***
hostility	1.7083	0.8143	1.4948	0.5095	4.129***
terror	1.4787	0.7829	1.2656	0.3938	4.286***
bigotry	1.6801	0.7711	1.4361	0.4695	4.984***
psychoticism	1.5891	0.7554	1.3262	0.3876	5.481***
aggregate score of SCL-90	154.2056	68.6355	130.021	33.6260	5.549***

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; hereinafter inclusive.

As can be seen from Table 1, although the scores of secondary school teachers in each dimension of SCL-90 are below the critical value of 2, their scores in each dimension and the total score are significantly higher than the national norm, indicating that secondary schools Teachers' mental health has become a problem that cannot be ignored.

Taking gender and teaching age as independent variables, the multivariate analysis of variance was performed based on the average of all dimensions of SCL-90 and the total score as dependent variable. The results showed that the scores of SCL-90 in different teaching age secondary school teachers were significantly higher than those of the control group ($P < 0.05$), the total score of SCL-90 (F The total score (2,247) = 11.478, (F The total score (2,247) = 12.575, $p < 0.05$), depression (F The total score (2,247) = 8.336, $p < 0.05$) , Anxiety(F The total score (2,247) = 12.496, $p < 0.05$), hostility(F The total score (2,247) = 12.295, $p < 0.05$)), bigotry (F The total score (2,247) = 9.035, $p < 0.05$) and psychotic (F87 TF (2,247) = 9.565, $p < 0.05$).Further multiple comparisons found that secondary school teachers with a teaching age of 5 to 10 years were significantly higher in SCL-90 total scores and average scores of all dimensions than those who had less than 5 years of teaching experience and more than 10 years of teaching experience. The specific results are shown in Table 2 below. There was no significant difference in the total scores and the various dimensions of SCL-90 among secondary school teachers in terms of the interaction effects of gender, gender and teaching age.

Table 2. Multiple Comparisons Among SCL-90 Scores and Average Scores by Different SCL Teachers

	Seniority		
	less than 5 years (A)	5-10 years (B)	more than 10 years (C)
aggregate score of SCL-90	127.761±41.476B	187.567±84.683AC	148.676±63.008 B
somatization	1.467±0.555 B	2.119±1.000 AC	1.721±.803 B

compulsion	1.635±0.700 B	2.350±0.941 AC	1.833±.768 B
interpersonal sensitivity	1.406±0.463 B	2.106±0.950 AC	1.627±.708 B
depression	1.492±0.606 B	2.117±0.978 AC	1.709±.771 B
anxiety	1.352±0.432 B	2.063±1.003 AC	1.574±.714 B
hostility	1.380±0.506 B	2.122±1.000 AC	1.640±.741B
terror	1.174±0.313 B	1.869±1.041 AC	1.413±.699 B
bigotry	1.402±0.431 B	2.011±0.973 AC	1.630±.715B
psychoticism	1.307±0.453 B	1.913±0.964 AC	1.544±.687 B

Note: The upper right labels A, B, C, and D represent groups that differ significantly from the 0.05 level.

3.2. Secondary school teachers teaching efficacy status

Table 3. Different gender, teaching age secondary school teachers teaching efficacy score

		general teaching efficacy	personal teaching efficacy	teachers' teaching efficacy
Gender	Male	34.923±9.880	76.289±13.637	111.212±18.872
	Female	33.734±8.350	77.243±11.525	110.909±15.941
Seniority	less than 5years	36.261±9.032	72.109±11.693	108.370±16.688
	5-10years	33.417±9.717	73.900±11.499	107.317±15.000
	more than 10 years	33.922±8.683	79.620±12.378	113.489±17.922

Table 3 shows the teaching efficacy of teachers of different teaching age. As we can see from Table 3, the trend that the male is slightly higher than the female in the total score of general teaching efficacy and teaching efficacy, while the female is slightly higher than the male in the personal teaching efficacy. In addition, teachers of less than 5 years of teaching generally showed a higher sense of effectiveness in teaching, while teachers with more than 10 years of teaching experience showed significantly higher scores in teaching effectiveness and teaching effectiveness.

Taking gender and teaching age as independent variables, took MANOVA based on the teaching effectiveness and scores of all dimensions as dependent variables. The results showed that there was a significant difference (P The personal teaching efficacy (2,247) = 9.571, p <0.05) among teachers with different teaching ages on personal teaching efficacy. Further multiple comparisons found that teachers with more than

10 years of teaching experience were significantly higher in personal teaching efficacy Secondary school teachers of less than 5 years and 5 to 10 years of teaching experience. Teachers' teaching-age differences reached the level of significance (F Teachers' teaching efficacy (2,247) = 3.222, p <0.05). In the further multiple comparisons, only the teaching age more than 10 years and 5 to 10 years have significant differences in teachers. Teachers of different teaching age have no significant difference in the general efficacy of teaching. Teachers of different teaching age have no significant difference in the general efficacy of teaching. In addition, the study also found that the teacher's teaching efficacy did not meet the requirement of significant level in terms of the interaction effect between gender and gender and teaching age.

3.3. The Relationship of Middle School Teachers' Psychological Health and Teaching Efficacy

The correlation analysis of teaching efficacy and mental health.

Pearson correlation analysis was conducted on all dimensions of mental health and the dimensions of teachers' perceived efficacy in middle school teachers. Results of the test were shown in Table 4. As can be seen, there is a significant negative correlation between all dimensions of teacher's sense of efficacy and mental health, and the correlation level remains at a moderate level.

Table 4. Correlation of middle school teachers' mental health and teaching efficacy

	teachers' teaching efficacy	general teaching efficacy	personal teaching efficacy
somatization	-.353**	-.299**	-.269**
compulsion	-.336**	-.287**	-.257**
sensitive of interpersonal relationship	-.329**	-.267**	-.260**
depression	-.385**	-.322**	-.300**
anxiety	-.347**	-.278**	-.279**
hostility	-.362**	-.322**	-.266**
terror	-.339**	-.216**	-.314**
bigotry	-.372**	-.267**	-.321**
psychoticism	-.352**	-.270**	-.292**
aggregate score of SCL-90	-.369**	-.298**	-.294**

3.4. Predictive Analysis of Teachers' Psychological Health on Teaching Efficacy

Taking the pedagogical total score and the scores of each dimension as the dependent variables, the SCL-90 score and the scores of each dimension were used as independent variables to conduct stepwise multivariate regression analysis. Table 5 shows the results.

Table 5 Secondary School Teachers' Mental Health on the Prediction of Teaching Effectiveness by Multiple Regression Analysis

DV	IV	R2	ΔR2	b	T
teachers' teaching efficacy	depression	0.148	0.148	-0.385	-6.533***
general teaching efficacy	depression	0.103	0.103	-0.373	-2.451*
	terror	0.122	0.019	0.394	2.967**
	hostility	0.140	0.018	-0.327	-2.240*
personal teaching efficacy	bigotry	0.103	0.103	-0.321	-5.320***

The study found that when the total score of pedagogical efficacy was the dependent variable, only the depression dimension entered the regression equation, and the explanatory rate of variation was 14.8%. When the general sense of efficacy was taken as the dependent variable, the regression equations were followed by depression, terror and hostility. The overall explanation rate was 14.0%. The explanatory rates of the three variables were 10.3%, 1.9% and 1.8% respectively. To personal teaching effectiveness as a dependent variable, only the paranoid dimension into the regression equation, the explanation rate of 10.3%.

4. Discussion

4.1. Middle School Teachers' Mental Health Present Status

The study found that the overall level of psychological health and symptom dimensions of Chengdu middle school teachers are higher than the national norm, which is consistent with the research results of Yang Guolong (2012) and Yang Jianyuan (2012). Nowadays, the expectation of society, assessment pressure is increasing day by day, teachers, especially secondary school teachers have become the current high-pressure population of society; and we refer to the national norm a sample was completed

eight years ago, two of its subjects involved in society In all walks of life. Therefore, it is reasonable that the SCL-90 and the scores of each dimension are significantly higher than the national norm.

Further analysis on mental health status of teachers of different ages showed that secondary school teachers who had a teaching experience of 5 to 10 years were significantly higher than those who had less than 5 years of teaching experience and more than 10 years of teaching experience in SCL-90 scores and average scores of all dimensions. As young and middle-aged teachers who have a teaching experience of 5 to 10 years, they are obviously less enthusiastic and energetic than younger teachers who have less than 5 years of teaching experience. They are also less experienced in work experience than those who have been teaching for more than 10 years. In the family, it is just at the "pillar" of the family, "There are old and young at home", which is the period when the family burden is the heaviest. They are not only confronted with high workloads in the schools, competition among colleagues, stress on job evaluation, and work-tiredness, but also are affected by the conflict of family work in various fields. Therefore, they are more likely to be in the so-called "sub-health" situation. Poor performance in all aspects of mental health.

4.2. Middle school teachers' teaching efficacy

The result of this study shows a tendency that the teachers who have less than 5 years teaching experience have a higher sense of effectiveness in teaching and those who have been teachers for more than 10 years have a significantly higher total score of individual teaching efficacy and teaching effectiveness. This is consistent with the results of Yu Guoliang et al. that the sense of general education efficacy tends to decrease with the increase of teaching time, and personal teaching efficacy tends to increase with the increase of teaching age.

According to the statistic test of the differences of teaching efficacy between teachers of different ages, it is found that teachers who have more than 10 years of teaching experience been significantly higher than those of middle school teachers whose teaching effectiveness is less than 5 years and 5 to 10 years; Teaching effectiveness is significantly higher than the 5 to 10 years of teachers. Obviously, the improvement of individual teaching efficacy is accompanied by the accumulation of teachers' teaching experience. Generally speaking, teachers with less teaching experience have less teaching experience, and problems often encountered in teaching often do not know what to do. They lack corresponding teaching methods and strategies for classroom management. As the number of teaching years increases, secondary school teachers

accumulate more and more experience in imparting knowledge, teaching management in classroom or in students' moral behavior, making them more confident in teaching themselves about their teaching work. Its personal teaching efficacy also showed an upward trend.

4.3. The Relationship of Middle School Teachers' Psychological Health and Teaching Efficacy

This study found that there is a moderate degree of negative correlation between the dimensions of pedagogical efficacy and the dimensions of mental health, indicating a link between the two. Further stepwise regression analysis also found that mental health symptoms of depression, terror, hostility and paranoid and so on teaching efficacy there is a significant predictive effect. Comparing the explanatory rates of variation in different dimensions of mental health, it can be seen that "depression" is a more important factor affecting the total score of teaching efficacy and general teaching efficacy.

It is easy to understand that depressive symptoms are characterized by disappointment and pessimistic perception (Wang 1984), that is, the negation of self-worth and ability, which is just the opposite of "sense of efficacy" that recognizes one's own value and ability. In actual teaching activities, the factors leading to frustration and failure may come from the teachers themselves, or from the schools, students and even the social environment. Depression teachers tend to attribute frustration and failure to themselves. This inevitably brings the sense of efficacy damage. In addition, the depressive symptoms such as lack of motivation and vitality loss (Wang 1984), and other characteristics often affect people's enthusiasm and enthusiasm for work, which in turn led to poor performance of teachers in teaching, thereby further reducing their sense of efficacy of teaching, which affects their belief in teaching, that is, the general sense of teaching efficacy. In the stepwise regression analysis based on the personal teaching efficacy as the dependent variable, only "bigotry" entered the regression equation and had a 10.3% explanatory rate of variation. Bigotry as a personality tendencies, the typical manifestation of the acts of thought stubborn, rigid, often mind "occupied" by certain concepts and can not be based on objective reality to balance other more reasonable ideas. This kind of thinking characteristic of "Opinionated" contradicts the "flexibility" required by first-line teaching so that some teachers can not complete the teaching work with high quality. Even if the work often touches the wall, they can not be adjusted and raised through self-reflection.

In summary, to enhance teachers 'sense of efficacy in order to ensure the steady improvement of teaching quality, attention to secondary school teachers' mental health can not be ignored. The results of this study suggest that the relevant education authorities need to focus on the psychological problems of young and middle-aged teachers aged 5 to 10 years, providing them with a more relaxed working environment, a more interpersonal atmosphere and a clearer Career prospects and more positive psychological health education and psychological help, so as to alleviate their ideological burden and work pressure, and encourage them to dedicate themselves to the teaching work.

Conclusion

1. The mental health status of middle school teachers is significantly lower than that of the national norm, and the teacher with a teaching age of 5 to 10 years is the most serious.
2. There was a significant difference in the scores of teaching effectiveness and individual teaching efficacy among different teaching age middle school teachers.
3. There is a significant negative correlation between each dimension of teaching efficacy and mental health.

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