



# Effect of Perceived Social Support on Psychache: Mediating Effect of Psychological Resilience

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## Abstract

**Background:** As education develops, it proposes increasing requirements on the quality of teachers. Thus, attention on the mental health problems of teachers has also been gaining increasing attention. However, specific studies on the relationship among teachers' perceived social support, psychache, and psychological resilience remain lacking.

**Methods:** Overall, 430 teachers (including teachers from universities, middle schools, and primary schools) from Zhejiang, Shanghai, Anhui, Hubei, Shanxi, Guangxi and other provinces in China were investigated in 2021 by using perceived social support scale, psychache scale, and psychological resilience scale.

**Results:** Teachers' perceived social support is below the average, whereas psychache and psychological resilience are above the average. A significant gender difference exists in teachers' psychache, and female teachers showed significantly higher teachers' psychache than male teachers ( $P < 0.05$ ). Teachers' psychache showed significantly negative correlations with perceived social support ( $r = -0.465$ ,  $P < 0.01$ ) and psychological resilience ( $r = -0.526$ ,  $P < 0.01$ ), but teachers' psychological resilience had a significantly positive correlation with perceived social support ( $r = 0.439$ ,  $P < 0.01$ ). Teachers' perceived social support ( $\beta = -0.465$ ,  $P < 0.01$ ) could make a negative significant prediction of teachers' psychache, and teachers' perceived social support ( $\beta = 0.435$ ,  $P < 0.01$ ) could make a positive significant prediction of teachers' psychological resilience. Moreover, psychological resilience had partial mediating effect between perceived social support and psychache, which accounts for 37.6% of the total effect.

**Conclusion:** Perceived social support not only is an important factor that influences teachers' psychache directly but can also influence the psychache of teachers indirectly through psychological resilience.

**Keywords:** Perceived social support; Psychache; Psychological resilience

## Introduction

With the progress of globalization, talent competition becomes increasingly fierce, and it proposes increasing requirements on the quality of

teachers. As a result, mental health problems of teachers become increasingly highlighted, manifested by occasional occurrences of suicide of teachers and abuse of students. The mental health status of teachers not only influences their professional development and happiness but also



the healthy growth of students. Some studies have pointed out that from 1991 to 2004, mental health conditions of teachers in rural areas of China deteriorate year by year, and the reduction amplitude is significantly higher than that in urban areas. Moreover, mental health conditions of teachers in rural areas of East China decrease year-by-year, and mental health conditions of teachers responsible for compulsory education decrease sharply as time goes on (1). Occupational stress of teachers is the easiest to cause depression and anxiety (2). Patients with depression and anxiety usually have psychache, and serious psychache often leads to suicide and assaulting behaviors (3). Without timely attentions and intervention to teachers' psychache, it may cause serious influences on physical and psychological health of teachers, and may even affect the psychological health of students. Hence, this study focuses on teachers' psychache and explores its relations with perceived social support and psychological resilience.

Psychache is usually connected with injury and some threat. It is a lasting and unhappy emotional experience, including ordinary spiritual pains, desperation, perceived burdens, and weak sense of belonging (4). At present, psychache is a structure that has not been studied sufficiently and has potential significance in the evaluation of suicide risks. When psychache reaches an intolerable degree, some people might view suicide as the sole and the ultimate solution. According to a study on 470 cases of cancer recurrence, 50.4% of patients after cancer recurrence suffered severe psychache, and 25.5% of patients suffered moderate psychache (5). With respect to recognition of suicide risks, psychache might be more accurate than depression. Moreover, psychache is the intermediary agent between the sense of presence and suicide behaviors (6).

Psychache completely or partially interprets the process that connects the frequency and intensity of general pains with the suicide idea. Suicide will not occur without psychache. Relieving the psychache of patients with obsessive-compulsive disorder can decrease the intentions of suicide, even though comorbid depression is not diag-

nosed (7). External factors (e.g., family, school, and society) and internal factors (e.g., physiology and psychology) can influence psychache, and seeking social support can positively relieve psychache (8). Now, study on psychache is in the early stage, and existing studies mainly focus on clinical patients. Psychache has been widely applied to studies on suicide and pathergasiology. As a result, studying teachers' psychache and influencing factors has important significance to prevent suicide and mental health intervention of teachers.

Social support refers to resources that individuals gained from social activities, including material or spiritual assistances from family and friends. Generally, social support can be divided into two types, namely, objective and subjective support, or known as practical and perceived social support. Objective or practical social support covers material assistances and direct services from individuals. Subjective or perceived social support refers to emotional experiences of individuals of being respected, understood, and supported (9). According to the conservation of resource theory, social support is viewed as the second psychological resources of individuals, and it is closely related with physical and psychological health. It has highly important significance for individuals to maintain good psychological health (10). Specifically, the perceived social support level of individuals can be used to predict the significance of life directly. Individuals who gain support that is more social have better adaptation conditions, thereby enabling to experience stronger significance of life in social environment. Some studies have pointed out that social support to teachers in primary and middle schools can make positive prediction of self-affirmation and negative prediction of depression and anxiety (11). Social support can relieve occupational burnout effectively and improve job satisfaction, thereby promoting them to maintain good psychological health. On this basis, perceived social support not only can relieve anxiety and depression of individuals and make positive direction of happiness directly but can also influence happiness through some mediating effect of social adapta-

tion and basic psychological needs (12). Good social support can decrease psychache symptoms to some extent. A longitudinal study discovered that perceived social support had a good negative prediction effect of post-operation depression, pains, and inflammatory reactions of patients with breast cancer (13). Therefore, we proposed hypothesis as follows:

***Hypothesis 1: Teachers' perceived social support could be used to predict psychache.***

Psychological resilience, or known as “psychological tenacity,” is often defined as an ability that can help individuals to recover from experiences of adverse stresses and adapt to the environment. A static and stable psychological resource belongs to individuals and can protect individuals from risk factors. Psychological resilience is an important concept in positive psychology, and it refers to the good adaptation ability of individuals upon adversity or distress. It represents the ability that individuals recover to the called previous “normal” or healthy state after trauma, accident, tragedy, or diseases. The psychological resilience level implies to some extent whether an individual has high psychological health level, and it is significantly related with depression and health conditions (14). Psychological resilience can decrease the influences of negative events on the psychological health of individuals (15), and it is an important mediated variable (16). Teachers' psychological resilience is significantly related with psychological health conditions. Psychological resilience and different relevant factors have significant negative prediction effects to psychological health symptoms and different factors (17, 18). Perceived social support could provide a significantly positive prediction of psychological resilience level, which also has a significant mediating effect between the perceived social support and stress responses (19, 20). Moreover, psychological resilience is closely related with psychache. On this basis, this study concludes that teachers' psychological resilience might have an important mediating effect between perceived social support and psychache. On the one hand, teachers' psychological resilience can relieve psychache.

On the other hand, individuals with high psychological resilience can strengthen the psychological needs of individuals for perceived social support, thereby relieving psychache. To sum up, hypothesis is proposed in the present study:

***Hypothesis 2: Teachers' psychological resilience has a mediating effect between perceived social support and psychache.***

## Methods

### *Data collection*

This study was approved by the Institutional Review Board of Shaoxing University. All participants were informed of the research purpose and confidentiality. After they agreed to participate and gave their written informed consent, data were collected.

After being approved, teachers from universities, middle schools, and primary schools in East China (e.g., Zhejiang and Shanghai), Central China (e.g., Anhui and Hubei), and Western China (e.g., Shanxi and Guangxi) were collected in 2021 according to local economic development levels in China through hierarchical cluster random sampling method. During the investigation, teachers volunteered to the study, and online and offline methods were combined for the questionnaire survey and data acquisition. Based on the quality check of all questionnaires, invalid respondents with missing contents and three extreme respondents out of the standard deviation were eliminated, and 430 questionnaires were collected effectively. Particularly, the respondents comprised 182 male teachers (42.3%) and 248 female teachers (57.7%); 54 teachers were from universities (12.6%), 253 teachers were from middle schools (58.8%), and 123 teachers were from primary schools (28.6%). Moreover, 55 teachers had college education (12.8%), 277 had bachelor's degrees (64.4%) and 98 had master's degrees or higher (22.8%). With respect to marriage, 72 teachers were unmarried (16.7%), and 358 teachers were married (83.3%).

### *Perceived social support scale*

It is compiled by Zimet et al (21), and used to measure social support that respondents perceive subjectively. It is composed of 12 items and divides social support into three dimensions: family, friends, and others. Each dimension is composed of four items. The perceived social support scale is measured using a seven-point Likert scale. The higher score of each dimension and the total score indicate more social support available. In this study, the Cronbach's  $\alpha$  coefficient of the scale was 0.927, indicating good reliability and validity.

### *Psychache scale*

It is compiled by Ronald (22), and is a single-dimensional structural scale with 13 items. It uses a five-point Likert scale, and higher scores indicate a higher degree of psychache. In this study, the Cronbach's  $\alpha$  coefficient of the scale was 0.951, indicating good reliability and validity.

### *Brief resilience scale*

It is compiled by Smith et al (23), and has 6 items. It uses a five-point Likert scale and has three positive and three negative scoring items. In this study, the Cronbach's  $\alpha$  coefficient of the scale is 0.796, indicating good reliability and validity.

### *Statistical analysis*

Moreover, collected data were analyzed and processed by using SPSS 21.0 (IBM Corp., Armonk, NY, USA) in this study. The assessment results of the respondents on the perceived social support scale, psychache scale, and psychological

resilience were analyzed. The status and differences of teachers' perceived social support, psychache, and psychological resilience, as well as their relations, were explored by *t*-test, one-way analysis of variance, correlation analysis, and multivariate regression analysis.

## Results

All test variables were included into the exploratory factor analysis by using the Harman single factor test method. Five factors with characteristic root higher than one were gained without rotation. The amount of variation explained by the first factor was 36.32%, which was lower than the critical standard of 40%. Hence, data in this study had no common method bias.

According to the analysis on teachers' perceived social support scale, psychache scale, and psychological resilience scale, Table 1 presents the overall means of psychache, perceived social support, and psychological resilience of respondents. Further analysis indicated that the overall mean of teachers' psychache was higher than the median; however, the overall mean of perceived social support was lower than the median, and the overall mean of psychological resilience was slightly higher than the median (Table 1).

Independent *t*-test and ANOVA were performed to determine the demographic statistical differences in the total scores of teachers' perceived social support, psychache, and psychological resilience (Table 2).

**Table 1:** Descriptive statistics on teachers' psychache, perceived social support, and psychological resilience

<i>Variables</i>	<i>Means</i>	<i>Standard deviation (SD)</i>	<i>Max</i>	<i>Min</i>	<i>Median</i>
Psychache	23.13	7.61	65.00	13.00	22.00
Perceived social support	59.38	12.57	84.00	12.00	61.00
Psychological resilience	19.44	3.89	30.00	6.00	19.00

**Table 2:** Demographic statistical differences on the total scores of perceived social support scale, psychache scale, and psychological resilience

<i>Variables</i>	<i>Perceived social support (t/F)</i>	<i>Psychache (t/F)</i>	<i>Psychological resilience (t/F)</i>
Gender	-1.014	-2.498*	0.240
Male	58.66(13.59)	22.35(6.29)	19.49(3.99)
Female	59.90(11.76)	24.19(9.02)	19.40(3.82)
Class	1.255	0.389	1.654
Teachers from primary schools	58.67(13.68)	23.31(7.29)	19.13(4.03)
Teachers from middle schools	59.20(12.48)	23.22(7.77)	19.42(3.78)
Teachers from universities	61.83(10.01)	22.28(7.70)	20.28(4.00)
Teaching age	0.689	2.004	1.169
1-5 years	58.55(11.61)	22.24(7.05)	19.45(3.57)
6-10 years	58.58(13.29)	22.96(6.60)	19.92(4.45)
11-15 years	58.43(12.29)	25.18(9.21)	18.73(2.86)
16-20 years	59.27(13.22)	23.32(8.53)	19.20(4.57)
21 years or more	60.72(12.83)	22.56(6.79)	19.76(4.05)

Note: Data are expressed in means (standard deviation (SD)). \*  $P < 0.05$

Table 2 shows that a significant gender difference was observed in the total scores of teachers' psychache. Specifically, female teachers presented significantly higher scores than male teachers. With respect to perceived social support, female teachers presented higher scores than male teachers, but the difference was insignificant. For psychological resilience, male teachers presented higher scores than female teachers, but the difference was insignificant. For teacher classes and

teaching age, insignificant differences were observed in terms of perceived social support, psychache, and psychological resilience.

First, Pearson's correlation analysis among teachers' perceived social support (including support from friends, family, and others), psychache, and psychological resilience indicated pairwise correlations of the six factors (the correlation coefficients are listed in Table 3).

**Table 3:** Correlation matrix of perceived social support, psychological resilience, and psychache

<i>Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Support from friends	1					
2. Support from family	0.576**	1				
3. Other support	0.704**	0.609**	1			
4. Perceived social support	0.875**	0.840**	0.888**	1		
5. Psychache	-0.389**	-0.418**	-0.403**	-0.465**	1	
6. Psychological resilience	0.397**	0.369**	0.376**	0.439**	-0.526**	1

\*  $P < 0.05$ , \*\*  $P < 0.01$

As shown in Table 3, teachers' perceived social support had a significantly negative correlation with psychache ( $P < 0.01$ ), with a correlation coefficient of  $-0.465$ . Specifically, support from friends had significantly negative correlation with psychache ( $P < 0.01$ ), with a correlation coefficient

of  $-0.389$ . Support from family had significantly negative correlation with psychache ( $P < 0.01$ ), with a correlation coefficient of  $-0.418$ . Support from others had significantly negative correlation with psychache ( $P < 0.01$ ), with a correlation coefficient of  $-0.403$ . Teachers' psychological resili-

ence presented a significantly positive correlation with perceived social support ( $P < 0.01$ ), with a correlation coefficient of 0.439. Teachers' pairwise significant correlations could be observed among teachers' perceived social support, psychological resilience, and psychache from the correlation analysis ( $P < 0.01$ ), which made testing the mediating effect of psychological resilience between perceived social support and psychache possible. Such mediating effect was analyzed through regression analysis to determine the relations among variables. OLS multivariate regression method was applied, in which teachers' psychache was used as a dependent variable and perceived social support as an independent variable. The regression coefficients have statistical significance ( $\beta = -0.465$ ,  $P < 0.001$ ). When using psychological resilience as a dependent variable and perceived social support as an independent variable, the regression coefficients had statistical significance ( $\beta = 0.439$ ,  $P < 0.001$ ). When using psychache as a dependent variable and perceived social support and psychological resilience as independent variables, the regression coefficients of perceived social support

psychological resilience presented a significantly negative correlation with psychache ( $P < 0.01$ ), with a correlation coefficient of  $-0.526$ . ( $\beta = -0.290$ ) and psychological resilience ( $\beta = -0.399$ ) had statistical significance ( $P < 0.001$ ). The perceived social support had a negative significant prediction of psychache. After the mediating variable of psychological resilience was added, the regression coefficient of perceived social support still had statistical significance, but it declined significantly (the partial regression coefficient decreased from 0.465 to 0.290). According to the results, psychological resilience had partial significant mediating effect between perceived social support and psychache. The mediating effect was  $-0.175$  ( $0.439 \times -0.399$ ), and the direct effect was  $-0.290$ . The overall effect (mediating effect + direct effect) was  $-0.465$  ( $-0.175 - 0.290$ ). The mediating effect/overall effect was 0.376, and the direct effect/overall effect was 0.624. In other words, the effect of perceived social support on psychache comprised 62.4% of direct effect and 37.6% of mediating effect by psychological resilience (Table 4).

**Table 4:** Mediating effect analysis of psychological resilience between perceived social support and psychache

Model	Dependent variable	Independent variable	R <sup>2</sup>	Adjusted R <sup>2</sup>	F value	β	t
1	Psychache	Perceived social support	0.201	0.214	117.870***	-0.465	-10.857***
2	Psychological resilience	Perceived social support	0.193	0.191	102.140***	0.439	10.106***
3	Psychache	Perceived social support				-0.290	-8.641***
		Psychological resilience	0.344	0.341	112.140***	-0.399	-9.146***

\*  $P < 0.05$ , \*\*  $P < 0.01$ , and \*\*\*  $P < 0.001$

## Discussions

Psychological health is the core factor of the psychological quality of teachers. It is not only related with the individual health level of teachers but also it determines the health of students directly.

The psychological health of teachers can also promote the protection of students' psychological health, and it can decrease the negative effects of potential psychological diseases on students. Moreover, improving the psychological health literacy level of teachers can improve their psy-

chological health level (24). According to Table 1, teachers' psychache level is above the average, whereas perceived social support is below the average, indicating that teachers' psychache is at the marginalization level and the perceived social support is relatively low. Table 2 also shows that female teachers have significantly more severe psychache than male teachers, indicating significant gender differences. This finding conforms to previous study (25). Generally, female teachers undertake more role conflicts between family and career than male teachers do; thus, they experience more psychache. However, no significant gender differences exist in terms of perceived social support and psychological resilience, which differs from previous studies to some extent (26). With respect to teaching age and teacher classes, no significant differences are observed in terms of psychache, further indicating the generality of teachers' psychache. This finding supports the view psychache theory of Shneidman as the primary psychological causes of suicide (27).

The analysis results in Tables 3 and 4 indicate that teachers' psychache has significantly negative correlations with perceived social support and psychological resilience. This finding conforms to previous associated studies (28). This result implies that teachers with stronger perceived social support have a relatively serious psychache level, whereas teachers with a lower psychological resilience level have a relatively weaker psychache level. According to our study, teachers' perceived social support can make a negative prediction of psychache, and psychological resilience plays some mediating effect between perceived social support and psychache. This finding reflects that teachers who perceive support that is more social have better psychological resilience and thus have weaker psychache, thereby enabling to experience happiness that is more subjective. This finding is consistent with previous study (29). According to further analysis, support from friends, family, leaders, colleagues, and relatives has significantly negative correlations with teachers' psychache, indicating that concerns and support of family, schools, and friends to teachers can relieve their psychache. Moreover, previous studies have

demonstrated that the social support that individuals perceive can strengthen their subjective happiness more than practical social support (30). According to the test results and the effect of mediation model, perceived social support influences psychache either directly or indirectly through psychological resilience. Specifically, the direct effect of perceived social support accounted for 62.4%, and the indirect effect accounted for 37.6%. This finding implies that perceived social support is an important factor that influences psychache directly and indirectly through psychological resilience (31).

Based on the above analysis, some suggestions on mental health intervention can be drawn. Teachers' psychache is serious without intergroup differences. Psychache is a general phenomenon in teachers. Hence, schools shall provide psychological health examination to teachers regularly, especially psychache symptom check, and provide teachers with serious psychache with timely psychological counseling or treatment in professional medical institutions, aiming to avoid crisis events. Moreover, support to teachers from friends, family, leaders, colleagues, and relatives should be strengthened, and their sense of belonging to schools should be enhanced, because perceived social support is an important background variable for teachers to participate in school activities. In addition, attention shall be paid to support the strength and quality of teachers. In other words, attention shall be paid to feelings of teachers and help them experience care and support from their family, school, and society, thereby decreasing their psychache (32).

Finally, psychological resilience is an important protection factor of teachers' psychache. Teachers should be helped in strengthening their psychological resilience and improve their psychological adaptation ability to relieve psychache. Specifically, schools can help teachers to improve their psychological resilience level through professional ways, such as holding psychological counseling activities. Such an approach can relieve psychache and improve the psychological health conditions of teachers.

In addition, survey respondents mainly consist of respondents involve few provinces, thus influencing the representativeness of the samples. Accordingly, future studies can expand the scope of respondents.

## Conclusion

Teachers' psychache is at the marginalization level, with general symptoms. Moreover, teachers' psychache shows significantly negative correlations with perceived social support and psychological resilience, but teachers' psychological resilience has a significantly positive correlation with perceived social support. Finally, teachers' perceived social support could influence psychache directly and indirectly through psychological resilience.

## Ethical considerations

Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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## Conflict of interest

The authors declare that there is no conflict of interests.

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