

# Study on the Relationship Between Freshmen's Trait Mindfulness and Mental Health

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## ABSTRACT

From the perspective of trait mindfulness, this study explores the relationship between college freshmen's trait mindfulness and mental health. Based on the results, this study makes specific suggestions for improving the mental health of college freshmen. The study took freshmen from Gannan Medical University as subjects, and explored the relationship between trait mindfulness and mental health of college students by issuing the Mindfulness Attention Awareness Scale (MAAS) and the Symptom Check List-90 (SCL-90). The results show that the level of mindfulness of freshmen in Gannan Medical University is generally at a medium level, and the mental health of freshmen in Gannan Medical University is relatively high. There is a significant negative correlation between the level of mindfulness and the nine factors of mental health in freshmen of Gannan Medical University. Therefore, improving college students' trait mindfulness has important practical significance for improving college students' mental health.

**Keywords:** freshmen, trait mindfulness, mental health

## I. INTRODUCTION

Mindfulness in psychology refers to a mental state or mental trait. Cahn and Polich divide mindfulness into state mindfulness and trait mindfulness. Trait mindfulness refers to an individual's ability to maintain awareness and focus on the current experience, emphasizing the openness and acceptance of his current experience [1]. A large number of studies on mindfulness have found that individual trait mindfulness is inextricably linked with psychological phenomena such as psychological elasticity, depression, subjective well-being, and psychological adjustment capabilities [2] [3]. There is no clear definition of the connotation of mental health. In short, individuals with high levels of mental health will have good mental and psychological states, which are manifested in being able to adapt to the environment, have less negative emotional experience, and control their own behavior and so on. Many research results have confirmed that trait mindfulness has an important effect on individual negative emotions and subjective well-being. Liu Huiqin et al. (2018) found that there is a significant negative correlation between trait mindfulness and depression, and that trait mindfulness can predict depression in a negative direction, that is, the higher the

level of individual trait mindfulness, the lower the possibility of individuals' depression.

Freshmen may face adaptation problems in the new environment, while students with higher levels of trait mindfulness may adapt to the environment more actively, understand and accept their own feelings, and have greater self-regulation ability. This study wants to understand the relationship between trait mindfulness and mental health, so as to improve the mental health of college students by improving their mindfulness.

## II. METHOD

### A. Research objects

In this study, a questionnaire survey was conducted on 2,718 freshmen from Gannan Medical University. A paper-and-pen test was used, 2,718 paper questionnaires were distributed, and 2,674 questionnaires were recovered. After screening and eliminating invalid questionnaires, a total of 2,595 valid questionnaires were collected, and the questionnaire effective rate was 92.68%. The distribution of subjects is as follows ("Table I"):

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TABLE I. DISTRIBUTION OF SUBJECTS

Variable	Variable characteristics	Number of people	Percentage (%)
Gender	Male	1124	43.3
	Female	1471	56.7
Origin of student	City	948	36.5
	Country	1646	63.5
Only child	Yes	560	21.6
	No	2031	78.2
Major	Undergraduate	2270	87.4
	Junior college	325	12.6

B. Research tools

1) *Mindfulness Attention Awareness Scale (MAAS)*: The Chinese version of the MAAS revised by Chen Siyi, Cui Hong and Zhou Renlai was used to measure the level of trait mindfulness. High scores indicate that individuals have a higher level of awareness of current awareness and attention in daily life. The score in MASS will be used as an indicator of the level of trait mindfulness in this study. The factor load of each item of the scale is between 0.46-0.79, the internal consistency reliability coefficient  $\alpha$  is 0.890, and the retest reliability is 0.870, which indicates that the scale has good structural validity and reliability [5].

2) *Symptom Check List-90 (SCL-90)*: The scale includes 90 items on a five-point scale, covering a wide range of psychiatric symptom content. The SCL-90 score will be used as a criterion for measuring the mental health of freshmen. The overall scale has a homogeneity reliability of 0.97; the subgroups have a homogeneity reliability of more than 0.69, a retest reliability of more than 0.7, a correlation coefficient between each item and the total score of more than 0.36, and a significance level of 0.0001. These results show that SCL-90 has better reliability and validity in the normal population [6].

TABLE II. CURRENT STATUS OF FRESHMEN'S MINDFULNESS LEVEL

Number of people	Average	Median	Standard deviation	Minimum value	Maximum value
2595	67.8940	68.0000	9.88429	18.00	90.00

2) *Mental health status of freshmen*: The scores and total scores of the nine subscales of the SCL-90 and the total average score are shown in "Table III". Taking a total score of 160 or more as a standard for some psychological problems, 551 people have a total score of 160 or more, accounting for 21.23% of the total number.

C. Research methods

This study used the MAAS and SCL-90 to conduct a collective test on freshmen of Gannan Medical University in the form of paper-and-pen tests and class units. After the freshmen have completed the test, the relevant staff check and collect the questionnaires for data entry. In this study, a total of 79 invalid data were excluded, including incomplete answers and questionnaires with incorrect data entry. For questionnaires with extreme scores, because this test represents the mental health of freshmen, it is not ruled out that a small number of people may have various psychological problems. Therefore, extreme data were not excluded in this study to ensure research value.

D. Statistical analysis

In this study, SPSS20.0 statistical software was used for statistics and analysis. Descriptive statistics, t-test, and Pearson correlation analysis were performed on the data.

III. RESULTS AND ANALYSIS

A. Overall situation of freshmen's mindfulness and mental health

1) *Status of mindfulness of freshmen*: The 15 topics in the MAAS are all scored in reverse. After the data conversion is added, the higher the total scores, the higher the individual's level of mindfulness. The statistical results of this study show that about 10% of freshmen have a total score of less than 40 points, with a minimum score of 3, and about half of freshmen's scores are concentrated between 46 and 59 points. About 3.69% of freshmen have a total score higher than 70, with a maximum score of 75. Based on the descriptive statistics of the following table ("Table II"), it can be seen that the level of mindfulness of freshmen in Gannan Medical University is generally at a medium level.

TABLE III. CURRENT STATUS OF MENTAL HEALTH OF FRESHMEN IN GANNAN MEDICAL UNIVERSITY

	Average	Median	Standard deviation	Minimum value	Maximum value
Interpersonal sensitivity	15.1407	14.0000	4.81795	9.00	41.00
Depression	19.5611	18.0000	6.26297	12.00	58.00
Anxiety	14.8401	14.0000	4.49229	10.00	41.00
Hostility	8.3750	8.0000	2.67374	6.00	26.00
Paranoid	8.6617	8.0000	2.72336	6.00	29.00
Somatization	14.5125	13.0000	3.86263	11.00	39.00
Terror	9.8960	9.0000	3.29949	7.00	31.00
Obsessive-compulsive symptoms	18.8197	18.0000	5.50403	10.00	45.00
Psychoticism	14.6551	14.0000	4.19146	10.00	39.00
Total score	136.8582	128.0000	34.32119	90.00	346.00
Total average	1.5095	1.4222	0.38135	1.00	3.84

3) *Statistical analysis of demographic variables for freshmen's mindfulness and mental health*

a) *Gender differences in freshmen's mindfulness and mental health:* As can be seen from the "Table IV" below, depression, anxiety, somatization, terror,

obsessive-compulsive symptoms, psychoticism, and SCL90 total scores are significantly different in different genders, and girls are significantly higher than boys. At the level of mindfulness, girls are significantly higher than boys.

TABLE IV. THE DIFFERENCE TEST OF MINDFULNESS LEVEL AND MENTAL HEALTH LEVEL AMONG FRESHMEN OF DIFFERENT GENDERS

	Gender	N	Average	Standard deviation	t	p
Interpersonal sensitivity	Male	1124	14.9671	4.65304	-1.617	0.106
	Female	1471	15.2733	4.93772		
Depression	Male	1124	18.8639	5.78343	-5.064	0.000
	Female	1471	20.0938	6.55812		
Anxiety	Male	1124	14.4324	4.23233	-4.105	0.000
	Female	1471	8.3425	4.65863		
Hostility	Male	1124	8.3997	2.65820	-0.540	0.589
	Female	1471	8.3997	2.68619		
Paranoid	Male	1124	8.6842	2.70366	0.368	0.713
	Female	1471	8.6445	2.73912		
Somatization	Male	1124	14.2482	3.67390	-3.086	0.002
	Female	1471	14.7145	3.99030		
Terror	Male	1124	9.3256	2.86235	-8.005	0.000
	Female	1471	10.3317	3.53737		
Obsessive-compulsive symptoms	Male	1124	18.5302	5.48031	-2.343	0.019
	Female	1471	19.0408	5.51372		
Psychoticism	Male	1124	14.4181	4.08998	-2.520	0.012
	Female	1471	14.8362	4.25988		
Total score of SCL90	Male	1124	133.0472	32.65970	-3.695	0.000
	Female	1471	138.0061	35.39923		
Mindfulness level	Male	1124	68.6361	10.22813	3.320	0.001
	Female	1471	67.3270	9.57810		

b) *Differences between freshmen's mindfulness level and mental health level:* The results about statistical analysis of freshmen's level of mindfulness and mental health in different birthplaces are shown in the "Table V" below. Among the two factors of interpersonal sensitivity and terror, there are obvious differences between the origin cities and rural areas. Students in rural areas are more likely to have interpersonal sensitivity and be horrified than students whose origin place is urban.

**TABLE V. THE DIFFERENCE TEST IN MINDFULNESS AND MENTAL HEALTH AMONG FRESHMEN IN DIFFERENT ORIGINS**

	<b>Origin of student</b>	<b>N</b>	<b>Average</b>	<b>Standard deviation</b>	<b>t</b>	<b>p</b>
Interpersonal sensitivity	Country	1646	15.3694	4.80029	3.174	0.002
	City	948	14.7468	4.82702		
Depression	Country	1646	19.6160	6.06035	0.566	0.572
	City	948	19.4715	6.60295		
Anxiety	Country	1646	14.9040	4.45421	0.939	0.348
	City	948	14.7321	4.55935		
Hostility	Country	1646	8.3761	2.60724	0.005	0.996
	City	948	8.3755	2.78712		
Paranoid	Country	1646	8.6586	2.64542	-0.092	0.927
	City	948	8.6688	2.85592		
Somatization	Country	1646	14.5699	3.86375	0.979	0.327
	City	948	14.4156	3.86196		
Terror	Country	1646	10.0535	3.40099	3.186	0.001
	City	948	9.6255	3.09887		
Obsessive-compulsive symptoms	Country	1646	18.9247	5.38560	1.267	0.205
	City	948	18.6403	5.70429		
Psychoticism	Country	1646	14.7181	4.15616	0.980	0.327
	City	948	17.5506	4.25166		
Total score of SCL90	Country	1646	136.5456	33.89987	1.320	0.187
	City	948	134.6983	35.03029		
Mindfulness level	Country	1646	68.0589	9.59728	1.066	0.286
	City	948	67.6203	10.36082		

*c) Differences between only-children in freshmen's mindfulness and mental health:* According to the statistical analysis of the mindfulness level and mental health level of the freshmen of only and non-only children, interpersonal sensitivity, depression,

anxiety, somatization, terror, obsessive symptoms, mental symptoms and SCL-90 score of the non-only children were significantly higher than that of the only children. ("Table VI")

**TABLE VI. THE DIFFERENCE TEST OF MINDFULNESS LEVEL AND MENTAL HEALTH LEVEL BETWEEN THE FRESHMEN OF ONLY AND NON-ONLY CHILDREN**

	<b>Only child</b>	<b>N</b>	<b>Average</b>	<b>Standard deviation</b>	<b>t</b>	<b>p</b>
Interpersonal sensitivity	Yes	562	14.5356	4.75904	-3.370	0.001
	No	2033	15.3079	4.82189		
Depression	Yes	562	18.8879	6.15002	-2.883	0.004
	No	2033	19.7472	6.28255		
Anxiety	Yes	562	14.3790	14.3790	-2.752	0.006
	No	2033	14.9675	4.53952		
Hostility	Yes	562	8.2295	2.60652	-1.457	0.145
	No	2033	8.4152	2.69127		
Paranoid	Yes	562	8.5302	2.73421	-1.293	0.196
	No	2033	8.6980	2.71991		
Somatization	Yes	562	14.2278	3.66922	-2.049	0.041
	No	2033	14.5912	3.91163		
Terror	Yes	562	9.3452	2.98273	-4.805	0.000
	No	2033	10.0482	3.36664		
Obsessive-compulsive symptoms	Yes	562	18.1940	5.34144	-3.050	0.002
	No	2033	18.9926	5.53696		
Psychoticism	Yes	562	14.1050	3.88076	-3.715	0.000
	No	2033	14.8072	4.26176		
Total score of SCL90	Yes	562	131.8630	32.38803	-3.251	0.001
	No	2033	136.9626	34.76338		
Mindfulness level	Yes	562	66.4484	10.38278	1.503	0.133
	No	2033	67.7408	9.73908		

**B. Correlation analysis between freshmen's mindfulness level and mental health level**

Pearson product difference correlation was used to correlate the mindfulness scale score with the nine

subscale scores of SCL-90 and the total score. The results showed that the level of mindfulness was significantly negatively related to the total score and factors such as interpersonal sensitivity, depression, anxiety, hostility, paranoid, somatization, terror,

obsessive-compulsive symptoms, and psychoticism. The nine factors and the total score have a moderate correlation with the level of mindfulness. Among them,

the two factors with the highest correlation are total score, depression, and obsessive-compulsive symptoms. (“Table VII”)

TABLE VII. CORRELATION ANALYSIS BETWEEN FRESHMEN’S MINDFULNESS AND MENTAL HEALTH IN FRESHMAN OF GANNAN MEDICAL UNIVERSITY

	<b>Interpersonal sensitivity</b>	<b>Depression</b>	<b>Anxiety</b>	<b>Hostility</b>	<b>Paranoid</b>
Mindfulness level	-0.479**	-0.519**	-0.505**	-0.437**	-0.452**
	<b>Somatization</b>	<b>Terror</b>	<b>Obsessive-compulsive symptoms</b>	<b>Psychoticism</b>	<b>Total score</b>
Mindfulness level	-0.402**	-0.403**	-0.522**	-0.500**	-0.571**

<sup>a</sup> \*\*. The correlation is significant at 0.01.

**IV. DISCUSSION**

*A. Analysis of freshmen's mindfulness level*

According to the results of the questionnaire survey and data analysis, in general, the freshmen's mindfulness level is at a medium level. It shows that most freshmen are able to have a good awareness of themselves and the environment, and can see and accept their internal experience well.

There is a gender difference in the level of mindfulness of freshmen, and the level of mindfulness of girls is significantly higher than that of boys. The MAAS is a single dimension, focusing on the level of individual mindfulness. This may be the main reason for the difference in research results. The reason why girls have higher levels of mindfulness may be that, due to differences in physical structure, girls pay more attention to their bodies than boys, and they also pay more attention to their emotional experience.

*B. Analysis of freshmen's mental health level*

Compared with the national norms, individuals with a mental health level of less than 160 freshmen accounted for about 79.5% of the total number of participants, indicating that most freshmen can adapt well to the environment and have better psychology and spirit status.

For gender differences in freshmen's mental health, according to statistical results, it is found that factors such as depression, anxiety, somatization, terror, obsessive-compulsive symptoms, and psychoticism and SCL90 total scores are significantly different in different genders, and girls are significantly higher than boys. SCL-90 measures the individual's feelings within a week. When boys first enter college campuses, they will be more adaptable than girls. During this period, girls may have higher depression, anxiety and terror scores than boys. Girls may pay more attention to themselves than boys, which may be the reason for the difference in somatization and mental symptoms scores. And the reason why girls are significantly higher than boys in terms of obsessive-compulsive symptoms may

be that girls are more attentive to others, they are more cautious in doing things with perfectionist tendency.

Among the two factors of interpersonal sensitivity and terror, students whose birthplace is rural are more likely to be interpersonal sensitive and enter a state of terror than students whose origin is in urban areas. Interpersonal sensitivity is manifested in individuals' strong feelings of inferiority in interpersonal communication. Individuals in rural areas may have strong feelings of inferiority, which is related to their living environment and family income.

*C. Correlation analysis between freshmen's level of mindfulness and mental health*

The results show that freshmen's mindfulness and total mental health scores are negatively correlated with interpersonal sensitivity, depression, anxiety, hostility, paranoid, somatization, terror, obsessive-compulsive symptoms, and psychoticism factors. And the correlation is significant at the 0.01 level, indicating that the higher the level of individual trait mindfulness, the higher the level of mental health. This result supports the hypothesis of this study, which is basically consistent with the results of Hu Bosong's (2017) study [7]. In his research on the relationship between college students' mindfulness level and subjective well-being, Hu Bosong found that the higher the level of mindfulness of college students, the higher the degree of subjective well-being and the less negative emotions they experienced.

**V. CONCLUSION**

Trait mindfulness, as an individual's ability to perceive himself and the environment, has a key effect on the individual's mental health. Therefore, college students, especially freshmen, need to improve their level of mindfulness in daily life in order to cope with various pressures in daily life. Through mindfulness training, they can significantly improve the level of individual trait mindfulness, improve the individual's ability to adapt to the environment and the ability to face setbacks, and improve the individual's mental health.

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