

## The Influences of Adult Attachment and Gender on Mental Health among Medical Undergraduates

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### Abstract

**Objective** To explore the present status of adult attachment and mental health, and analyze the influences of gender and adult attachment style on mental health among medical undergraduates. **Methods** A stratified random sampling is used to select 855 medical undergraduates from Guangdong Province, China. They are investigated with Experiences in Close Relationships Inventory (ECR) and Symptom Check-List90 (SCL-90). **Results** (1) The scores of attachment anxiety and attachment avoidance are  $(3.89\pm 0.74)$  and  $(3.77\pm 0.55)$ , respectively. There are 30.53%, 12.63%, 15.09% and 41.75% of students with a secure, infatuated, apathetic, and phobic attachment style, respectively. (2) The total score of SCL-90 is  $(1.87\pm 0.47)$ , and the scores of obsessive-compulsive and interpersonal sensitivity are higher than 2.0, the lower score limit of positive symptom. (3) The positive rates of mental problems of students with different genders and attachment styles are significantly different ( $\chi^2=107.598$  to 303.919, all  $P<.001$ ). **Conclusion** The adult attachment and mental health of medical undergraduates need to be improved. Gender and adult attachment style may be two important influencing factors of mental health.

**Keywords:** Medical Undergraduates, Adult Attachment, Gender, Mental Health, Questionnaire

## 1. Introduction

Adult attachment is a stable psychological tendency that urges individuals to approach specific objects that they believe can provide them with physical satisfaction and psychological security and establish strong, lasting, and close emotional connection with them [1], which is manifested in attachment avoidance and attachment anxiety [2]. Adult attachment is an individual's unconscious memory and internalized psychological representation of the relationship between childhood and parents at present. Its core psychological mechanism is internal working mode, which is based on maternal and infant attachment and runs through the life [3].

In the process of interacting with the objects of attachment, individuals form a cognitive structure or psychological representation about themselves and others, that is, the "internal working model" (IWM). The attachment styles based on IWM guide individuals to interpret and process information with a

specific tendency and take specific actions in interpersonal interactions [4]. Therefore, attachment styles can have a profound impact on individuals' cognition, emotion, interpersonal relationship, and even mental health. Generally speaking, safe attachment individuals show more adaptive and healthy patterns in all aspects above. Previous studies have shown that attachment anxiety and attachment avoidance are positively correlated with pathological network use [5], psychological distress [6], depression [6], loneliness [6], and other psychological or behavioral problems, and negatively correlated with curiosity [7], exploratory behavior [7], creativity [7], emotion regulation ability [8], internality [9], stress resistance [9], subjective well-being [9], social self-efficacy [6, 10], social ability [10] and other psychological qualities. On the other hand, the risk of psychological diseases such as depression, anxiety, and obsessive-compulsive disorder among individuals with safe attachment is significantly lower than those with unsafe attachment [11-13], and their mental health is also better.

With regard to the impact of adult attachment on individuals' mental health, previous studies focused on the correlation between the dimension level of attachment and mental health. In fact, the type of adult attachment can more clearly and comprehensively depict the overall picture and key characteristics of individual attachment. On the other hand, gender is the main demographic factor affecting mental health and attachment styles. We can speculate that the variable combination of "gender+attachment type" has an important impact on mental health.

Based on the above analysis, this study intends to take medical undergraduates in Guangdong Province as an example (in order to better eliminate the influence of interference factors such as region, discipline, specialty, and education background) to explore the above speculation.

## 2. Objects and Methods

### 2.1. Objects

A stratified random sampling is adopted to select medical undergraduates from 7 colleges in Guangdong Province, namely Guangdong Medical University, Sun Yat-sen University School of Medicine, Southern Medical University, Guangzhou University of Traditional Chinese Medicine, Guangdong Pharmaceutical University, Shantou University School of Medicine and Guangzhou Medical University. A total of 900 questionnaires are distributed, 855 valid questionnaires are collected, with an effective rate of 95.0%. Among them, there are 447 boys and 408 girls; 160 from Guangdong Medical University, 85 from Sun Yat-sen University School of Medicine, 171 from Southern Medical University, 144 from Guangzhou University of Traditional Chinese Medicine, 94 from Guangdong Pharmaceutical University, 77 from Shantou University School of Medicine, and 124 from Guangzhou Medical University; 222 freshmen, 188 sophomores, 161 juniors, 146 seniors and 138 seniors.

### 2.2. Tools

#### 2.2.1 Experiences in Close Relationships Inventory, ECR

It is compiled by Brennan et al. (1998) [16] and revised by Li Tonggui (2006)[17] into Chinese version. There are 36 items, divided into two dimensions of attachment anxiety and attachment avoidance. Likert 7-point scoring method is used to score from 1 to 7 points corresponding to "completely disagree" to "completely agree". The higher the score, the more obvious the tendency of the item or dimension. The two dimensions are divided into high and low levels by four points, thus forming four types of attachment styles, namely, secure (low anxiety and low avoidance), infatuated (high anxiety and low avoidance), apathetic (low anxiety and high avoidance) and phobic (high anxiety and high avoidance). In this study, the Cronbach's  $\alpha$  coefficient of total scale is 0.822, and Cronbach's  $\alpha$  coefficients of attachment anxiety and attachment avoidance are 0.751 and 0.687, respectively.

#### 2.2.2. Symptom Check-List 90, SCL-90

It is a self-assessment scale, compiled by DeRogatis et al (1975) [16], and revised by Chen Huichang (1998) [17] into Chinese version. A total of 90 items are divided into the following 10 factors: somatization (SM), obsessive-compulsive (OC), interpersonal sensitivity (IS), depression (DE), anxiety (AN),

hostility (HO), phobic anxiety (PA), paranoid ideation (PI), psychoticism (PS) and additional items (AI). Likert 5-point scoring method is used to score from 1 to 5 points corresponding to "never" to "always". The higher the score, the more serious the symptom. In this study, the Cronbach's  $\alpha$  coefficient of total scale is 0.952, and the Cronbach's  $\alpha$  coefficients of 10 factors are 0.703-0.865 respectively.

#### 2.2.3 Self-complied personal general situation questionnaire

Including the 4 aspects of gender, grade, school, and age.

### 2.3. Data Processing

SPSS 20.0 software is used for statistical analysis. The main statistical methods include descriptive statistics, t-test, and  $\chi^2$ -test, etc.

## 3. Results

### 3.1. Common method deviation test

Since the data are all from questionnaires (namely self-reported by the subjects), there may be common bias. Harman single factor test [11] is used to test the common method deviation. The results show that there are 12 factors with eigenvalue greater than 1, and the first factor explains 19.68% of the total variation, which is less than the critical standard of 40%. Therefore, the influence of common method deviation on the results of this study can be excluded.

### 3.2. General situation of adult attachment of medical students

#### 3.2.1. Distribution of adult attachment types among medical students

The distribution of attachment patterns of medical students in this group is as follows: 261 students with safe, accounting for 30.53%; 108 with infatuated, accounting for 12.63%; 129 with apathetic, accounting for 15.09%; 357 with phobic type, accounting for 41.75%.

#### 3.2.2. Overall situation of dimensions (factors) of adult attachment and mental health among medical students

It can be seen from table 1 that the score of attachment anxiety is lower than the cut-off point [14-15] ( $t=-2.372$ ,  $P=.018$ ), belonging to the low score; the score of attachment avoidance is higher than the cut-off point [14-15] ( $t=4.767$ ,  $P<.001$ ), which is a high score; the total average score of SCL-90 and the scores of 10 factors are significantly higher than the norm of college students, and the scores of obsessive-compulsive and interpersonal sensitivity are significantly higher than the lower limit of positive [16, 17].

**Table 1 Descriptive statistics of ECR and SCL-90**

Dimension	N	M	SD	MIN	MAX
Attachment anxiety	855	3.89	.74	1.83	5.56
Attachment avoidance	855	3.77	.55	2.11	5.55
SCL-90	855	1.87	.47	1.01	3.02
Somatization	855	1.61	.49	1.00	3.00
Obsessive-compulsive	855	2.25	.60	1.00	4.03
interpersonal sensitivity	855	2.21	.61	1.00	3.22
Depression	855	1.85	.55	1.00	3.00
Anxiety	855	1.83	.58	1.00	3.60
Hostility	855	1.65	.52	1.00	3.00
Phobic anxiety	855	1.84	.59	1.00	3.57
Paranoid ideation	855	1.95	.79	1.00	4.67
Psychoticism	855	1.85	.76	1.00	3.50
Additional items	855	1.81	.59	1.00	3.29

**3.3. Gender differences in adult attachment and mental health of medical students**

**3.3.1 Gender differences in the type distribution of adult attachment among medical students**

The distribution of attachment types of male and female students is as follows: 234 male students are safe, 75 infatuated, 81 apathetic and 84 phobic, and 27 female students are safe, 33 infatuated, 48 apathetic, and 273 phobic. The distribution difference of attachment types between boys and girls is statistically significant ( $\chi^2=282.230, P < 0.001$ ).

**3.3.2 Gender differences in scores of adult attachment and mental health among medical students**

It can be seen from table 2 that the scores of attachment anxiety and attachment avoidance of male students are lower than the cut-off point, while the scores of attachment anxiety and attachment avoidance of female students are higher than the cut-off point. The differences of the scores of attachment anxiety and attachment avoidance between male and female students are statistically significant ( $t=-12.291, -16.615$ ; both  $P < .001$ ).

It can be seen from table 2 that the differences of total average score of SCL-90 and the scores of 10 factors between boys and girls are statistically significant ( $|t|= 2.163$  to  $11.295$ , all  $P < 0.05$ ).

**Table 2 Gender differences on the scores of ECR and SCL-90**

	Boys (n=474)	Girls (n=381)	t	P
Attachment anxiety	3.70±0.67	4.24±0.61	-12.291	<.001
Attachment avoidance	3.86±0.48	4.36±0.40	-16.615	<.001
SCL-90	1.75±0.46	2.02±0.43	-8.483	<.001
Somatization	1.49±0.50	1.76±0.45	-7.946	<.001
Obsessive-compulsive	2.08±0.62	2.46±0.50	-9.967	<.001
Interpersonal sensitivity	2.01±0.53	2.45±0.62	-11.295	<.001
Depression	1.68±0.52	2.05±0.51	-10.318	<.001
Anxiety	1.76±0.63	1.91±0.49	-3.869	<.001
Hostility	1.76±0.50	1.52±0.51	6.731	<.001
Phobic anxiety	1.87±0.64	1.79±0.52	2.163	.031
Paranoid ideation	1.78±0.63	2.13±0.81	-6.958	<.001
Psychoticism	1.62±0.54	2.12±0.88	-9.811	<.001
Additional items	1.76±0.64	1.86±0.51	-2.588	.010

**3.4. Influence of variable combination "gender+attachment type" on mental health**

Matching gender (male or female) and attachment type (safe, infatuated, apathetic or phobic) one by one to get eight groups: male safe (G1), male infatuated (G2), male apathetic (G3), male phobic (G4), female safe (G5), female infatuated (G6), female apathetic (G7), and female phobic (G8).

**3.4.1 Overall effect of variable combination "gender+attachment type" on general mental health**

It can be seen from table 3 that there are significant inter-group differences in the percentages of the three grades of total average score of SCL-90 ( $\chi^2=296.286, P < 0.001$ ). The positive rate (ie. the percentage with SCL-90 total mean score  $\geq 2$ ) of the total mean score of SCL-90 of the apathetic boys is the lowest (accounting for 0%), and that of the phobic girls is the highest (accounting for 68.9% of the group).

**Table 3 Inter-group differences in the distribution of SCL-90 total mean score**

group	G1	G2	G3	G4	G5	G6	G7	G8	$\chi^2$	P
<2.0	165	6	81	24	24	18	42	85	296.286	<.001
2.0≤ZJ<3.0	57	69	0	60	3	15	6	179		
3.0≤ZJ<4.0	12	0	0	0	0	0	0	9		

**3.4.2 Effect of variable combination "gender+attachment type" on the factor of somatization**

It can be seen from table 4 that there are significant inter-group differences in the percentages of the three grades of somatization score ( $\chi^2=303.919, P < 0.001$ ). Apathetic boys, apathetic girls, and infatuated boys have the highest percentage of somatization score<2.0 (all accounting for 100% of the group), and phobic girls have the highest positive rate of somatization score (accounting for 56.0% of the group).

**Table 4 Inter-group differences in the distribution of somatization score**

group	G1	G2	G3	G4	G5	G6	G7	G8	$\chi^2$	P
<2.0	177	75	81	18	24	24	48	120	303.919	<.001
2.0≤ZJ<3.0	45	0	0	66	3	9	0	153		
3.0≤ZJ<4.0	12	0	0	0	0	0	0	0		

**3.4.3 The influence of variable combination "gender+attachment type" on the factor of obsessive-compulsive**

It can be seen from table 5 that there are significant inter-group differences in the percentages of the three grades of obsessive-compulsive score ( $\chi^2=290.554, P < 0.001$ ). Apathetic boys have the highest percentage of somatization score<2.0 (accounting for 66.7% of the group), and the phobic girls have the highest positive rate (90.1% of the group).

Table 5 Inter-group differences in the distribution of obsessive-compulsive score

group	group								$\chi^2$	P
OC	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	120	15	54	27	15	15	27	27	290.554	<.001
2.0≤ZI<3.0	99	54	27	48	12	9	15	228		
3.0≤ZI<4.0	15	6	0	0	0	9	6	18		
4.0≤ZI<5.0	0	0	0	9	0	0	0	0		

**3.4.4 Influence of variable combination "gender+attachment type" on the factor of interpersonal sensitivity**

It can be seen from table 6 that there are significant inter-group differences in the percentages of the three grades of interpersonal sensitivity score ( $\chi^2=302.011$ ,  $P<0.001$ ). The apathetic girls have the highest percentage of interpersonal sensitivity score<2.0 (75.0% of the group), and the phobic girls have the highest positive rate (96.7% of the group).

Table 6 Inter-group differences in the distribution of interpersonal sensitivity score

group	group								$\chi^2$	P
IS	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	111	15	36	42	15	15	36	9	302.011	<.001
2.0≤ZI<3.0	108	60	36	33	12	9	12	147		
3.0≤ZI<4.0	15	0	9	9	0	9	0	117		

**3.4.5 Effect of variable combination "gender+attachment type" on the factor of depression**

It can be seen from table 7 that there are significant inter-group differences in the percentages of three grades of depression score ( $\chi^2=237.294$ ,  $P<0.001$ ). Apathetic boys and girls have the highest percentage of depression score<2.0 (both accounting for 100% of the group), and the phobic girls have the highest positive rate (accounting for 69.2% of the group).

Table 7 Inter-group differences in the distribution of depression score

group	group								$\chi^2$	P
DE	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	168	60	81	60	24	15	48	84	237.294	<.001
2.0≤ZI<3.0	66	15	0	24	3	18	0	180		
3.0≤ZI<4.0	0	0	0	0	0	0	0	9		

**3.4.6 Effect of variable combination "gender+attachment type" on the factor of anxiety**

It can be seen from table 8 that there are significant inter-group differences in the percentages of three grades of anxiety score ( $\chi^2=223.691$ ,  $P<0.001$ ). The apathetic girls have the highest percentage of anxiety score <2.0 (accounting for 100% of the

group), and the phobic girls have the highest positive rate (accounting for 65.9% of the group).

Table 8 Inter-group differences in the distribution of anxiety score

group	group								$\chi^2$	P
AN	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	159	60	69	48	24	15	48	93	223.691	<.001
2.0≤ZI<3.0	51	6	12	36	3	18	0	171		
3.0≤ZI<4.0	24	9	0	0	0	0	0	9		

**3.4.7. Effect of variable combination "gender+attachment type" on the factor of hostile**

It can be seen from table 9 that there are significant inter-group differences in the percentages of three grades of hostile score ( $\chi^2=173.207$ ,  $P<0.001$ ). The apathetic girls have the highest percentage of hostility score<2.0 (accounting for 100% of the group), and the phobic girls have the highest positive rate (accounting for 54.5% of the group).

Table 9 Inter-group differences in the distribution of hostility score

group	group								$\chi^2$	P
HO	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	153	60	45	57	24	15	48	124	173.207	<.001
2.0≤ZI<3.0	81	15	21	27	3	18	0	125		
3.0≤ZI<4.0	0	0	15	0	0	0	9	24		

**3.4.8 The influence of the variable combination "gender+attachment type" on the factor of phobic anxiety**

It can be seen from table 10 that there are significant inter-group differences in the percentages of three grades of phobic anxiety score ( $\chi^2=138.273$ ,  $P<0.001$ ). The infatuated boys have the highest percentage of phobic anxiety score <2.0 (accounting for 100% of the group), and phobic girls have the highest positive rate (accounting for 56.0% of the group).

Table 10 Inter-group differences in the distribution of phobic anxiety score

group	group								$\chi^2$	P
phobic anxiety	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	129	75	60	42	15	24	33	120	138.273	<.001
2.0≤ZI<3.0	78	0	21	42	12	9	15	144		
3.0≤ZI<4.0	27	0	0	0	0	0	0	9		

**3.4.9. Effect of variable combination "gender+attachment type" on the factor of paranoid**

It can be seen from table 11 that there are significant inter-group differences in the percentages of the three grades of paranoid score ( $\chi^2=267.816$ ,  $P<0.001$ ). The infatuated boys have the highest percentage of paranoid score<2.0 (accounting for 100% of the group), and the phobic girls have the highest positive rate (accounting for 60.4% of the group).

Table 11 Inter-group differences in the distribution of paranoid score

group	group								$\chi^2$	P
paranoid	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	156	75	42	54	24	24	42	108	267.816	<.001
2.0≤ZI<3.0	39	0	39	21	2	0	6	48		
3.0≤ZI<4.0	39	0	0	9	0	9	0	117		
4.0≤ZI<5.0	0	0	0	0	1	0	0	0		

**3.4.10 Effect of variable combination "gender+attachment type" on the factor of psychoticism**

It can be seen from table 12 that there are significant inter-group differences in the percentages of the three grades of psychoticism score ( $\chi^2=289.533, P<0.001$ ). The safe girls have the highest percentage of psychoticism score<2.0 (88.9% of the group), and the phobic girls have the highest positive percentage (57.1% of the group).

Table 12 Inter-group differences in the distribution of psychoticism score

group	group								$\chi^2$	P
PS	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	169	65	57	54	24	24	27	117	289.533	<.001
2.0≤ZI<3.0	65	10	24	30	3	8	15	129		
3.0≤ZI<4.0	0	0	0	0	0	1	6	27		

**3.4.11 The influence of variable "gender+attachment type" on additional items**

It can be seen from table 13 that there are significant inter-group differences in the percentages of the three score grades of additional items. ( $\chi^2=107.598, P <0.001$ ). The safe girls have the highest percentage of additional items score<2.0 (accounting for 88.9% of the group), and the infatuated boys have the highest positive percentage (accounting for 56.0% of the group).

Table 13 Inter-group differences in the distribution of additional items score

group	group								$\chi^2$	P
additional items	G1	G2	G3	G4	G5	G6	G7	G8		
<2.0	171	33	45	42	24	15	33	117	107.598	<.001
2.0≤ZI<3.0	36	42	36	33	3	18	15	147		
3.0≤ZI<4.0	27	0	0	9	0	0	0	9		

**4. Discussion**

The scores of attachment anxiety and attachment avoidance of this group are (3.94±0.69) and (4.08±0.51) respectively, which were higher than the results of previous studies [18-24]. It is suggested that the level of attachment anxiety and attachment avoidance of Chinese college students (including medical students) has been increasing year by year in the past 10 years, and the rate of increase of attachment avoidance is significantly higher than that of

attachment anxiety and has exceeded the cut-off point in the past 3 years.

At the same time, the distribution of adult attachment patterns of medical students in this group is significantly different from previous studies [19-21, 25-27]. It is suggested that the distribution of adult attachment types is changing dynamically with the changes of times and cultures. Specifically, in the past 10 years, the proportion of safe attachment of college students (including medical students) in China has been less than 50% every year, and this percentage is decreasing year by year, while the proportion of unsafe attachment is increasing year by year.

The scores of attachment anxiety and attachment avoidance of boys in this group are lower than the cut-off point, while the scores of attachment anxiety and attachment avoidance of girls are higher than the cut-off point. There are statistically significant differences in the scores of attachment anxiety and attachment avoidance between boys and girls; There are also statistically significant differences in the distribution of attachment types between male and female: most male students (49.4%) are safe attachments, and most female students (92.9%) are unsafe attachments. The results of this study are inconsistent with those of Zhang Hongmei [19] and Yan Gui [28], which may be caused by different ages and sampling groups. It suggests that female medical students are more likely to have problems with adult attachment than male medical students.

Previous studies have pointed out that safe attachment individuals show more adaptive and healthy patterns in cognitive, emotional, interpersonal, and even mental health [4]. Their risk of mental illness is lower than that of unsafe attachments [11-13], and their mental health is also better. This study finds that there is statistically significant difference in the incidence of mental health problems among medical students with different gender and different attachment types. Specifically, on the total average score of SCL-90 and the score of 10 factors, the positive rate of medical students with safe attachment (the percentage with score ≥ 2) is significantly lower than that of medical students with unsafe attachment; Among the eight groups, the positive rate of the total mean score of SCL-90 and 10 factors of the apathetic attachments are the lowest, followed by the safe attachments, and the positive rate of phobic attachments is the highest. The research result of this study is inconsistent with those of previous research [29], which may be caused by the different ages and sampling groups, suggesting that the social and cultural background has a significant impact on psychological quality. Fundamentally, "adult attachment" deals with a series of issues such as "who is reliable", "who is the object to rely on", and "where to find the object to rely on". With the accelerated development of social economy, in the past decades, people's moral quality has declined significantly, and vicious events such as bullying and fraud have occurred frequently, making people vulnerable to injury but difficult to prevent, thus interpersonal trust has been lost, and reliable attachment objects are not easy to find. In this situation, the adoption of apathetic attachment mode can be said to be a "protective color". On one hand, the apathetic attachments think that they are valuable and capable, and insists on "relying on themselves". Therefore, they

will strive to develop their problem-solving ability, make their lives more independent and self-help, and have less psychological distress. On the other hand, because they think that others and interpersonal communication are worthless, and they keep a considerable distance from others without being close to them, they suffer very few negative and malignant interpersonal events and have less impact on their mental health. They also easily recover their calm mood and life order from major negative events, so the indifferent attachments have the best mental health. The safe attachments think that they and others are valuable and believe that others are worthy of trust, so it is easy for them to establish attachment relationship. At the same time, because of their good cognitive and emotional adjustment abilities, they have strong ability to withstand pressure and maintain their mental health. However, because the safe attachments are easier to establish attachment relationships, they are also more vulnerable to the interference of interpersonal negativity and malignant events, and because they are willing to rely on and seek help from others, their independence and self-help are not as good as the indifferent attachment. In the current context of diversified interpersonal relationships, their lives are prone to fall into a passive situation, causing psychological distress and affecting their mental health, and their mental health is not as good as that of apathetic attachment. As for infatuated adherents and phobic adherents, conceptually, they are closely related to psychological diseases: infatuated adherents are always worried about being abandoned by others, they are excessively involved in the painful emotions related to the attachment relationship; they also deny their own values, and show excessive concern about the availability and responsiveness of others. This excessive anxiety has a negative impact on many aspects of mental health, such as depression, obsessive-compulsive, and increased interpersonal sensitivity. When encountering negative events, they will experience more stress and have more loneliness, sadness, and anxiety related to threats [10]. The phobic attachments have a negative self-model and a negative model of others. They feel that they have no value or ability, and others are not trustworthy, so they are afraid and alienate others. This cognitive model will distort perception, make individuals tend to view themselves, the world, and the future negatively, overestimate others' negative behaviors and underestimate their own negative behaviors, and even subconsciously cite others' behaviors to prove that they are not cute. So, this cognitive model is prone to cause depression, which can be said to be the precursor of depression.

According to the distribution of the total mean score of SCL-90 and the scores of 10 factors in 8 groups, the apathetic boys have the highest percentages of <2.0 in the total mean score, somatization, obsessive-compulsive and depression, the infatuated boys have the highest percentages of <2.0 in the somatization, phobic anxiety and paranoia, the apathetic girls have the highest percentages of <2.0 in the somatization, interpersonal sensitivity, depression, anxiety and hostility, and the percentages of female safe attachments who score less than 2.0 in psychoticism and additional items are the highest; The positive rates of 8 factors of phobic girls, such as total average score, somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, paranoid, and psychoticism, are the

highest among the 8 groups, while the positive rates of hostility and phobic anxiety are the highest for infatuated girls, and the positive rate of additional items is the highest for infatuated boys. Based on the factor scores of SCL-90 and the distribution of scores in the three score segments, we can draw the following conclusions: boys' mental health is better than girls'; the apathetic attachments have the best mental health, followed by the safe attachments, the infatuated and phobic attachments successively. In general, the mental health of the eight groups from high to low is apathetic boys, apathetic girls, safe boys, safe girls, infatuated boys, infatuated girls, phobic boys, and phobic girls. It can be seen that gender has a significant impact on the mental health of medical students, which makes boys' mental health better than girls of the same attachment type. Why? Is it caused by physiological factors (such as differences in sex hormones) or social factors? This question needs large sample of cross-cultural studies to answer.

## 5. Conclusion

This study has preliminarily proved the influence of the variable combination of "gender+adult attachment type" on the mental health of college students, and to a certain extent confirmed that the psychological quality of individuals is the result of the interaction between the innate biological traits (gender) and the acquired social living conditions (such as parent-child interaction and adult attachment caused by parenting style). Follow-up research needs to further explore the mechanism of the impact of gender and adult attachment on individuals' mental health.

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