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# THE STATUS OF NATIVE FAMILY, AND ITS INFLUENCE ON ADOLESCENTS' MENTAL HEALTH IN SOUTH CHINA: A CROSS-SECTIONAL STUDY

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**ABSTRACT**

Adolescence psychological problems affects their growing and learning, even will cause serious impact on the development of the society. Native family is the place where adolescents usually live and study in, which might have important influence on adolescents mental health. Therefore, 4415 adolescents in South China were investigated by using questionnaire survey, to explore the status of their native family and mental level, and the influence of native family on adolescent mental health. This study found that among the adolescents surveyed, there were 1881(38.1%) of adolescents considered their family atmosphere is harmonious; 876(19.8%)adolescents considered their parents cared too much about them, 886(20.1%) adolescents thinked their parents didn't care enough about them; only 2291(51.89%) adolescents had good family function; Mental health: Found by the GHQ scale, there were 2052(46.5%) adolescents had psychological disorders, 2842(64.4%) adolescents had previous suicidal ideation or behavior due to mental or psychological problems. Multi-factor analysis found that age, family residence, family type, parenting style, parenting status, family economic status, academic performance, and family function status were the main influencing factors of adolescent mental health. This confirms our hypothesis: Adolescents' mental health level of South China is low, and a good native family is essential for adolescent mental health.

**KEYWORDS:** Native family, adolescent, mental health, influencing factor.

## INTRODUCTION

With the development of the society, schools, parents and medical experts have played high attention on adolescents psychological problem. Adolescence is a special stage in the transition from childhood to adulthood, their bodies grow rapidly, their mental health also changed dramatically. Due to external influences and changes in oneself, Adolescents are prone to psychological problems. Psychological problems will not only affect teenagers' growth, learning performance and communication with others, will even affect their personal safety and social security.[1,2]

Native family refers to the family in which one was born and raised, As opposed to a new family formed after marriage, it is a psychological term, It is the most basic and important environment in one's life. It is very important for the growth and development of adolescents, their mental maturity, outlook on life and the formation of values.[3,4] In recent years, research on adolescent mental health has gradually increased in recent years, and the research on native family factors has attracted more and more attention. Researchers think,

family factors and parent factors is the main factor that native family affects adolescent mental health.

Family factors affecting adolescents' mental health including the interaction mode among family members, family coping style, family help seeking behavior, family economic status, family function, family structure, bad parenting style, family residence and so on.[5] Studies found that the family environment lacking mutual support and help, mutual responsibility and trust, poor emotional expression and a sense of security and achievement is prone to depression and other emotional problems among adolescents. Bad parenting style will make children form negative cognitive style and have psychological problems. The mother's rearing anxiety and bad psychological behavior may be the high-risk factors leading to adolescents' psychological problems.[6,7] The study also found that adolescents with poor family economy are easy to form a negative cognitive model of self denial and doubt, and more likely to have psychological problems. The better the family function, the higher the self-esteem level of teenagers, and the less emotional and behavioral problems. Um et al found that family relationship status and communication

support played a regulatory role between stressful life events and depression. Harmonious family relationship could effectively alleviate the occurrence of depression among adolescents in single parent families.[8-11]

The parental factors affecting adolescents' mental health included parent-child relationship, parents' mental health level, parents' marital status and parents' childbearing age. The study found[12] that negative rejection type, doting type, expectation type and control type parent-child relationship were unfavorable to adolescents' mental health. It was also found that parents with high education give their children more respect and understanding, which was easy to guide their children's mental health. Parents with low socio-economic status were more likely to have high control and low support for their children, while parents with high socio-economic status were more self-directed and self-control, and more likely to adopt democracy, authority and appropriate monitoring over their children, Maintain adolescents' mental health; Adolescents with high parental expectations were more likely to have mental health problems.[13,14]

To sum up, the impact of native family on adolescents' mental health was all-round, which was the result of the joint action of multiple factors. The members of this subject were middle school students. Through the retrieval and learning of network resources and understanding the people and things around them, it was found that the proportion of Chinese adolescents with psychological problems was on the rise.[15,16] In addition to the pressure of learning and social environment, the influence of native family was very obvious. Therefore, the topic of mental health and native family has become our research interest. We proposed a hypothesis: some bad characteristics, atmosphere and practices of native families will have a great negative impact on children's mental health. Therefore, we intended to analyze the mental health status of native families and adolescents in South China through questionnaire survey, explored the relationship between native families and adolescents' mental health, and put forward targeted intervention strategies.

## 2. RESEARCH METHODS
**2.1 Literature analysis:** Relevant literature about the mental health of native families and adolescents published in recent five years were searched by Pubmed, Medline, CNKI, Google and Baidu, and analyzed the main impact of native families on adolescents' mental health, and summarized the intervention measures that could reduce the adolescents' mental problems.

### 2.2 Questionnaire survey
1. Participants: Adolescents aged 10-25 in South China (Guangdong Province) were selected as the research object. The stratified random sampling method was used to select 8 classes in Grade 5-6 of 2 primary schools, 20 classes in junior middle school and 20

classes in senior high school, and 40 classes in 2 colleges and universities; The selected class adopts the cluster sampling method to conduct a questionnaire survey on the students in the whole class.

2. Questionnaire: According to the results of literature review and the purpose of this study, a questionnaire was designed. The main contents included: Demographics (including age, gender, whether the only child, family residence), Native family status (including family type, family economic status, parental rearing style, parents' educational status, family atmosphere, parents' care for you, APGAR family function questionnaire)[17], self-rated academic performance, mental health status (including self-rated mental health status, general mental health questionnaire GHQ-12)[18], beliefs and related behaviors about mental health.

3. Investigation methods: The anonymous on-site survey and online questionnaire survey of adolescents in school were carried, the on-site survey took back the questionnaire on the spot, and the online survey was submitted only after all questions were filled in.

4. Evaluation criteria of questionnaire scale: APGAR family function evaluation scale: Compiled by Smilkstein of the University of Washington in the United States, it is used to evaluate individual family functions, including five dimensions of adaptability, cooperation, growth, emotion and intimacy of family functions, including five questions. Each topic has three options: often, sometimes and rarely. Each option gets 2 points, 1 point and 0 point respectively, and the total score is 0-10. Total score: 7-10 points: good family function; Total score: 4-6 points: moderate impairment of family function, 0-3 points: severe impairment of family function. The higher the score, the better the family function.

5. General mental health questionnaire GHQ-12: Prepared by Goldberg, the questionnaire has 12 questions to evaluate the mental health status of subjects in recent 4 weeks. Topics 1, 2, 7, 10, 11 and 12 are disease topics. Options include none at all, as many as usual, more than usual and much more than usual; Topics 3, 4, 5, 6, 8 and 9 are health topics. Options include better than usual, the same as usual, worse than usual and a lot of time difference. For each topic, 0 point will be given if the first two items are selected, and 1 point will be given if the last two items are selected, with a total score of 0-12 points. The higher the score, the worse the overall mental health of the subjects. Generally, a total score of 3 is used as the dividing point. If the total score of GHQ questionnaire is less than 3, it means that the initial screening psychological state is normal, and if it is greater than or equal to 3, it means that the initial screening psychological state is abnormal.

**2.3 Statistical analysis** SPSS20.0 statistical software package was used to establish database and input all data, and conduct statistical analysis. The comparison of each constituent ratio and rate by $\chi^2$ test, independent sample t-test was used to compare the mean of the two groups, one-way ANOVA was used for the comparison of the mean of more than three groups, and logistic regression was used for multivariate analysis.

## 3. RESULTS
### 3.1 Demographic information of the respondent
4415 valid questionnaires were collected in this study. Among the respondents, 2998 were male (67.9%) and 1417 were female (32.1%),491 adolescents aged 10-13 (11.1%), 1965 (44.5%) aged 14-17 and 1959 (44.4%) aged 19-25,2748 only children (62.2%).1666 people (37.7%) rated themselves as having good academic performance. There were 44.4%, 38.5% and 17.7% of families lived in cities, towns and rural areas respectively.The parents of 1803 students (40.8%) have both high school education or below, as shown in Table 1.

### 3.2 The current situation of teenagers' native family
Among the respondents, 15.3%, 68.1% and 14.5% were from single parent families, two parent families and reorganized families respectively; Parents' way of educating their children: 999 students(22.6%) thought that their parents' way of rearing was autocratic, and only 903 students(20.5%) thought it was democratic; 2498 students(56.6%) think their home is equivalent to the average level of the local economy; 1881 students(38.1%) thought their family atmosphere was harmonious; 876 students(19.8%) thought that their parents cared too much about themselves; 886 students(20.1%) thought that their parents did not care enough about themselves, as shown in Table 2.

### 3.3 Family function
APGAR family function scale was used to evaluate the family function of the respondents, with a full score of 10. The total score of the respondents was 6.68 ± 2.48, of which the score of family function of boys was higher than that of girls.The score of only child was higher than that of non only child; The scores of students whose families live in cities were significantly higher than those in towns and rural areas. Among them, the self-rated family function of students whose families live in rural areas was only 6.09 ± 2.69, as shown in Table 3.

### 3.4 MENTAL HEALTH STATUS
**3.4.1** Score of each question in GHQ questionnaire The students' mental health status in the past 4 weeks were evaluated using GHQ questionnaire. Among the 12 questions in GHQ questionnaire, the top three problems with positive results were: feeling unable to solve their own problems (29.8%), feeling unhappy and depressed (29.4%) and insomnia due to excessive worry (29.2%). Among them, the positive result rates of non only child adolescents were higher than those of only child

adolescents, with statistical difference (P < 0.05), as shown in Table 4.

### 3.4.2 Total scores of GHQ questionnaire for different types of adolescents
The total score of GHQ questionnaire was calculated , it was found that the total score of the adolescents was 2.882 ± 2.966, and the GHQ score gradually decreases with the increase of adolescents' age. The scores of adolescents from rural families were higher than those from urban; The score of only child adolescents was lower than that of non only child adolescents; The total score of GHQ questionnaire of adolescents with family function disorder was higher than that of those with good family function (P < 0.05), as shown in Figure 1.

### 3.4.3 Mental health status of different types of adolescents
According to the evaluation standard of GHQ questionnaire, the total score <3 means initial screening psychological state was normal, while ≥3 means abnormal.The results showed that ,with the increase of adolescents' age, the abnormal rate of primary screening psychological status decreased gradually; The abnormal rate of psychological status of female adolescents was higher than that of male adolescents; The rate of non only child adolescents was higher than that of only child adolescents; The abnormal rate of adolescents from rural families was higher than that from urban or rural areas; The abnormal rate of psychological status of adolescents with poor self-rated academic performance was higher than that of adolescents with good performance; The abnormal rate of adolescents from reorganized families was higher than that of other family types. The abnormal rate of psychological status of adolescents with parents' indulgent rearing style was higher than that of other types. The abnormal rate of psychological status of adolescents with depressed family atmosphere was higher than that of other families. The abnormal rate of psychological status of adolescents with family function disorder was higher than that of those with good family function. The worse the self-rated psychological status of adolescents, the higher the rate of abnormal psychological status evaluated by GHQ questionnaire. There were statistically difference (P < 0.05), as shown in Table 5.

### 3.5 Multivariate analysis of adolescent mental health
GHQ questionnaire was used to evaluate whether the initial screening psychological status was abnormal as the dependent variable (1 = yes, 0 = no). Age, gender, whether the only child, family residence, self-rated academic achievement, parents' educational status, family type, rearing style, family economic status, family atmosphere, parents' care for their children, family function were analyzed by single factor Logistic regression and multi factor unconditional logistic regression. The multi logistic regression model was established by backward: LR method. The level of variables entering the equation was a = 0.05 and the

exclusion level was below a = 0.1. Multivariate analysis showed that the factors that finally entered the regression equation were: age (OR = 0.481), gender (OR = 0.664), family residence (OR = 1.197), family type (OR = 1.475), parenting style (OR = 0.832), parents' educational status (OR = 1.650), family economic status (OR = 2.055), academic achievement (OR = 1.629), family function status (OR = 2.690), Those were the main influencing factors of adolescent mental health.These results were shown in Table 6.

**3.6 Mental health related beliefs and behaviors of adolescents**
Among the factors that adolescents thought the greatest impact on their mental health in the questionnaire survey,

the top three were family (1288 people, accounting for 29.17%), society (1051 people, accounting for 23.81%) and school (912 people, accounting for 20.66%), as shown in Figure 2A. 32.43% of adolescents have never sought help from others due to mental or psychological problems (multiple-choice questions), and the top three objects in need of help were friends (38.87%), relatives (36.33%) and classmates (33.64%). See Figure 2B. 2842 people (64.37%) had suicidal thoughts or behaviors due to mental or psychological problems in the past, of which the rate of boys (69.0%) was higher than that of girls (54.6%); The rate of only child (72.3%) was higher than that of non only child (51.3%) (P < 0.05).

**Table 1 Demographic information of the respondents.**

|  | Male, n(%) | Female, n(%) | Total, n(%) |
|---|---|---|---|
| **Age** | | | |
| 10-13 years old | 366 (12.2) | 125 (8.8) | 491 (11.1) |
| 14-17years old | 1276 (42.6) | 689 (48.6) | 1965 (44.5) |
| 19-25years old | 1356 (45.2) | 403 (42.6) | 1959 (44.4) |
| Is he/she only child | | | |
| yes | 2025 (67.5) | 723 (51.0) | 2748 (62.2) |
| no | 973 (32.5) | 694 (49.0) | 1667 (37.8) |
| Self rated academic achievement | | | |
| very good | 1208 (40.3) | 458 (32.3) | 1666 (37.7) |
| preferable | 1200 (40.0) | 497 (35.1) | 1697 (38.4) |
| commonly | 498 (16.6) | 408 (28.8) | 906 (20.5) |
| bad | 92 (3.1) | 54 (3.8) | 146 (3.3) |
| Family residence | | | |
| city | 1404 (46.8) | 555 (39.2) | 1959 (44.4) |
| township | 1159 (38.7) | 542 (38.2) | 1701 (38.5) |
| countryside | 435 (14.5) | 320 (22.6) | 755 (17.7) |
| Educational status of parents | | | |
| Both high school and below | 1167 (38.9) | 636 (44.9) | 1803 (40.8) |
| University degree or above of one parent | 1459 (48.7) | 581 (41.0) | 2040 (46.2) |
| University degree or above of both parents | 372 (12.4) | 200 (14.1) | 572 (13.0) |

**Table 2: Current situation of native families of teenagers surveyed.**

| Family status | Gender | | Only child | | Family residence | | | Total |
|---|---|---|---|---|---|---|---|---|
|  | Male | Female | yes | no | City | Town ship | Countryside | |
| **home style** | | | | | | | | |
| Single-Parent Family | 499 (16.6) | 177(12.5) | 486(71.9) | 190(11.4) | 434(22.2) | 173(10.2) | 69(9.1) | 676(15.3) |
| Two-Parent Family | 1955 (66.5) | 1013(71.5) | 1828(66.5) | 1180(70.8) | 1384(70.6) | 1124(66.1) | 500(66.2) | 3008(68.1) |
| Reorganize the Family | 449 (15.0) | 192(13.5) | 401(14.6) | 240(14.4) | 116(5.9) | 373(21.9) | 152(20.1) | 641(14.5) |
| other | 55 (1.8) | 35(2.5) | 33(1.2) | 57(3.4) | 25(1.3) | 31(1.8) | 34(4.5) | 90(2.0) |
| **parenting style** | | | | | | | | |
| autocratic | 668 (22.3) | 331(23.4) | 686(68.0) | 313(18,8) | 596(30.4) | 254(14.9) | 149(19.7) | 999(22.6) |
| Doting type | 1158(38.6) | 355(25.1) | 1004(36.5) | 509(30.5) | 653(33.3) | 735(43.2) | 125(16.6) | 1513(34.3) |
| Indulgent type | 687(22.9) | 313(22.1) | 619(22.5) | 381(22.9) | 295(15.1) | 472(27.7) | 233(30.9) | 1000(22.7) |
| Democratic type | 485(16.2) | 418(29.5) | 439(16.0) | 464(27.8) | 415(21.2) | 240(14.1) | 248(32.8) | 903(20.5) |
| **household economy** | | | | | | | | |
| better | 814(27.2) | 373(26.3) | 877(31,9) | 310(18.6) | 702(35.8) | 345(20.3) | 140(18.5) | 1187(26.9) |
| Quite | 1679(56.0) | 819(57.8) | 1480(53.9) | 1018(61.1) | 1116(57.0) | 995(58.5) | 387(51.3) | 2498(56.6) |
| poor | 505(16.8) | 225(15.9) | 391(14.2) | 339(20.3) | 141(7.2) | 361(21.2) | 228(30.2) | 730(16.5) |
| **family atmosphere** | | | | | | | | |
| Very harmonious | 1184(39.5) | 497(35.1) | 1090(39.7) | 591(35.5) | 987(50.4) | 402(23.6) | 292(38.7) | 1881(38.1) |
| Not bad | 1248(41.6) | 565(39.9) | 1128(41.0) | 685(41.1)) | 636(32.5) | 894(52.6) | 283(37.5) | 1813(41.1) |
| commonly | 498(16.6) | 300(21.2) | 467(17.0) | 331(19.9) | 302(15.4) | 355(20.9) | 141(18.7) | 798(18.1) |

| Depress | 69(2.3) | 55(3.9) | 63(2.3) | 60(3.6) | 34(1.7) | 50(2.9) | 39(5.2) | 123(2.8) |
|---|---|---|---|---|---|---|---|---|
| **Parents' care** | | | | | | | | |
| Excessive care | 654(21.8) | 222(15.7) | 720(26.2) | 156(9.4) | 566(28.9) | 231(13.6) | 79(10.5) | 876(19.8) |
| Moderate care | 1758(58.6) | 895(63.2) | 1550(56.4) | 1103(66.2) | 1076(54.9) | 1089(64.0) | 488(64.6) | 2653(60.1) |
| Lack of care | 515(17.2) | 245(17.3) | 414(15.1) | 346(20.8) | 282(14.4) | 324(19.0) | 154(20.4) | 760(17.2) |
| Don't care at all | 71(2.4) | 55(3.9) | 64(2.3) | 62(3.7) | 35(1.8) | 57(3.4) | 34(4.5) | 126(2.9) |

**Table 3: Family function status of adolescents surveyed.**

| Items | Gender | | Only child | | Family residence | | | Total |
|---|---|---|---|---|---|---|---|---|
| | **Male** | **Female** | **Yes** | **No** | **City** | **Township** | **Countryside** | |
| **(1)When I have problems, I can get satisfactory help from my family.** | | | | | | | | |
| Often | 1268(68.1) | 594(31.9) | 1306(70.1) | 558(29.9) | 1124(60.4) | 501(26.9) | 237(12.7) | 1862(100.0) |
| Sometimes | 1506(70.1) | 641(29.9) | 1238(57.7) | 909(42.3) | 704(32.8) | 1027(47.8) | 416(19.4) | 2147(100.0) |
| Almost few | 224(55.2) | 182(44.8) | 204(50.2) | 202(49.8) | 131(32.3) | 173(42.8) | 102(25.1) | 406(100.0) |
| **(2) I am satisfied that my family discusses various matters and shares problems with me.** | | | | | | | | |
| Often | 1218(67.6) | 584(32.4) | 1268(70.4) | 534(29.6) | 1027(57.0) | 526(29.2) | 249(13.8) | 1802(100.0) |
| Sometimes | 1513(70.9) | 622(29.1) | 1224(57.3) | 911(42.7) | 786(36.8) | 959(44.9) | 390(18.3) | 2135(100.0) |
| Almost few | 267(55.9) | 211(44.1) | 256(53.6) | 222(46.4) | 146(30.5) | 216(45.2) | 116(24.3) | 478(100.0) |
| **(3)When I want to try something new in life or study, my family can support me.** | | | | | | | | |
| Often | 1409(69.0) | 634(31.0) | 1412(69.1) | 631(30.9) | 1100(53.8) | 661(32.4) | 282(13.8) | 2043(100.0) |
| Sometimes | 1375(69.3) | 609(30.7) | 1144(57.7) | 840(42.3) | 738(37.2) | 886(44.7) | 360(18.1) | 1984(100.0) |
| Almost few | 214(55.2) | 174(44.8) | 192(49.5) | 196(50.5) | 121(31.2) | 154(39.7) | 113(29.1) | 388(100.0) |
| **(4) I am very satisfied with my family's care and love for my mood changes.** | | | | | | | | |
| Often | 1344(68.9) | 606(31.1) | 1380(70.8) | 570(29.2) | 1026(52.6) | 664(34.1) | 260(13.3) | 1950(100.0) |
| Sometimes | 1355(69.2) | 603(30.8) | 1092(55.8) | 866(44.2) | 785(40.1) | 806(41.2) | 367(18.7) | 1958(100.0) |
| Almost few | 299(59.0) | 208(41.0) | 276(54.4) | 231(45.6) | 148(29.2) | 231(45.6) | 128(25.2) | 507(100.0) |
| **(5) I am satisfied with the time my family spend with me.** | | | | | | | | |
| Often | 1452(69.8) | 627(30.2) | 1295(62.3) | 784(37.7) | 1038(49.9) | 675(32.5) | 366(17.6) | 2079(100.0) |
| Sometimes | 1223(67.7) | 584(32.3) | 1144(63.3) | 663(36.7) | 754(41.7) | 775(42.9) | 278(15.4) | 1807(100.0) |
| Almost few | 323(61.1) | 208(38.9) | 309(58.4) | 220(41.6) | 167(31.6) | 251(47.4) | 111(21.0) | 529(100.0) |
| Family functioning score | 6.79±2.34 | 6.46±2.73 | 6.97±2.41 | 6.20±2.52 | 7.35±2.39 | 6.18±2.30 | 6.09±2.69 | 6.68±2.48 |

**Table 4: Mental health status of adolescents surveyed (comparison of positive results in GHQ).**

| Items (0 points for the first 2 items, 1 point for the second 2 items) | Gender | | Only child | | Total |
|---|---|---|---|---|---|
| | **Male (n=2998)** | **Female (n=1417)** | **Yes (n=2748)** | **No (n=1667)** | |
| Be able to concentrate when doing things | 465(15.5) | 266(18.8) | 403(14.7) | 328(19.7) | 731(16.6) |
| Some people suffer from insomnia due to excessive worry | 815(27.2) | 472(37.3) | 665(24.2) | 622(37.3) | 1287(29.2) |
| Feel useful | 343(11.4) | 182(12.8) | 225(8.2) | 300(18.0) | 525(11.9) |
| Think you have judgment | 818(27.3) | 339(23.9) | 587(21.4) | 570(34.2) | 1150(26.2) |
| Always in a state of tension | 773(25.8) | 338(23.9) | 598(21.8) | 513(30.8) | 1111(25.2) |
| I feel I can't solve my problems | 960(32.0) | 357(25.2) | 741(27.0) | 576(34.6) | 1317(29.8) |
| Can enjoy daily life | 614(20.5) | 294(20.7) | 525(19.1) | 383(23.0) | 908(20.6) |
| Be able to face the problems faced | 762(24.2) | 341(24.1) | 649(23.6) | 418(25.1) | 1067(24.4) |
| Feel unhappy and depressed | 844(28.8) | 454(32.0) | 752(27.4) | 546(32.8) | 1298(29.4) |
| Lose confidence in study and life | 808(27.0) | 352(24.8) | 676(24.6) | 848(29.0) | 1160(26.3) |
| People who feel worthless | 721(24.0) | 343(24.2) | 592(21.5) | 472(28.3) | 1064(24.1) |
| I think everything is going well | 714(23.8) | 384(27.1) | 650(23.7) | 448(26.9) | 1098(24.9) |

**Table 5: Mental health status of different types of adolescents.**

| Item | Score | | Total | value | P value |
|---|---|---|---|---|---|
| | <3points (normal) | ≥3 points (abnormal mental condition) | | | |
| age | | | | | |
| 10-13years old | 171(34.8) | 320(65.2) | 491(100.0) | 160.252 | <0.001 |
| 14-17years old | 955(48.6) | 1010(51.4) | 1965(100.0) | | |
| 19-25years old | 1236(63.1) | 723(36.9) | 1959(100.0) | | |
| Gender | | | | | |
| Male | 1566(52.2) | 1432(47.8) | 2998(100.0) | 6.005 | 0.014 |
| Female | 796(56.2) | 621(43.8) | 1417(100.0) | | |
| Only child | | | | | |
| yes | 1565(57.0) | 1183(43.0) | 2748(100.0) | 34.843 | <0.001 |
| no | 797(47.8) | 870(52.2) | 1667(100.0) | | |
| Family residence | | | | | |
| city | 1304(66.6) | 655(33.4) | 1959(100.0) | 265.534 | <0.001 |
| Town ship | 677(39.8) | 1024(60.2) | 1701(100.0) | | |
| countryside | 381(50.5) | 374(49.5) | 755(100.0) | | |
| Self-evaluation of academic performance | | | | | |
| Very good | 1210(72.6) | 456(27.4) | 1866(100.0) | 434.382 | <0.001 |
| good | 788(46.4) | 909(53.6) | 1697(100.0) | | |
| general | 325(35.9) | 581(64.1) | 906(100.0) | | |
| poor | 39(26.7) | 107(73.3) | 146(100.0) | | |
| Educational background of parents | | | | | |
| Both high school and below | 1146(63.3) | 657(36.4) | 1803(100.0) | 124.488 | <0.001 |
| Either party has a college degree or above | 957(46.9) | 1083(53.1) | 2040(100.0) | | |
| University degree or above else | 259(45.3) | 313(54.7) | 572(100.0) | | |
| Homestyle | | | | | |
| Single parent families | 363(53.7) | 313(46.3) | 676(100.0) | 466.436 | <0.001 |
| Both parents | 1865(62.0) | 1143(38.0) | 3008(100.0) | | |
| Reorganization of the family | 100(15.6) | 541(84.4) | 641(100.0) | | |
| other | 34(37.9) | 56(62.2) | 90(100.0) | | |
| Parenting style | | | | | |
| authoritarian style | 688(68.9) | 311(31.1) | 999(100.0) | 546.993 | <0.001 |
| Doting type | 654(43.2) | 859(56.8) | 1513(100.0) | | |
| Indulgence type | 322(32.2) | 678(67.8) | 1000(100.0) | | |
| democratic | 698(77.3) | 205(22.7) | 903(100.0) | | |
| Family financial situation | | | | | |
| better | 850(71.6) | 337(28.4) | 1197(100.0) | 396.030 | <0.001 |
| Quite | 1330(53.2) | 1168(46.8) | 2498(100.0) | | |
| poor | 192(24.9) | 548(75.1) | 730(100.0) | | |
| Family atmosphere | | | | | |
| Very harmonious | 1267(75.4) | 414(24.6) | 1691(100.0) | 593.201 | <0.001 |
| Not bad | 817(45.1) | 996(54.9) | 1813(100.0) | | |
| general | 262(32.8) | 536(67.2) | 798(100.0) | | |
| depressed | 16(13.0) | 107(87.0) | 123(100.0) | | |
| How much parents care about their children | | | | | |
| Too much care | 633(72.3) | 243(27.7) | 976(100.0) | 468.867 | <0.001 |
| Take care of moderate | 1524(57.4) | 1129(42.6) | 2653(100.0) | | |
| Lack of concern | 175(23.0) | 585(77.0) | 760(100.0) | | |
| Don't ask | 30(23.8) | 96(76.2) | 126(100.0) | | |
| Family function | | | | | |
| good | 1646(71.8) | 645(28.2) | 2291(100.0) | 696.636 | <0.001 |
| Moderate disabilities | 637(37.7) | 1054(62.3) | 1691(100.0) | | |
| Severe obstacle | 79(18.2) | 354(81.8) | 433(100.0) | | |
| Self rated mental health | | | | | |
| excellent | 1217(83.1) | 247(16.9) | 1464(100.0) | 987.625 | <0.001 |
| good | 848(50.3) | 839(49.7) | 1687(100.0) | | |
| okay | 217(25.1) | 647(74.9) | 864(100.0) | | |

| commonly | 70(22.6) | 240(77.4) | 310(100.0) | | |
|---|---|---|---|---|---|
| difference | 10(11.1) | 80(88.9) | 90(100.0) | | |

**Table 6: Multivariate logistic regression analysis of adolescent mental health.**

| Variable | B | S.E. | Wald | df | P | OR | 95.0% C.I.for OR | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Age group | -0.732 | 0.056 | 169.773 | 1 | 0.000 | 0.481 | 0.431 | 0.537 |
| gender | -0.409 | 0.080 | 26.446 | 1 | 0.000 | 0.664 | 0.568 | 0.776 |
| Family residence | 0.180 | 0.054 | 11.269 | 1 | 0.001 | 1.197 | 1.078 | 1.329 |
| Family type | 0.389 | 0.063 | 38.334 | 1 | 0.000 | 1.475 | 1.304 | 1.669 |
| Parenting styles | -0.183 | 0.037 | 24.974 | 1 | 0.000 | 0.832 | 0.775 | 0.895 |
| education status of parents | 0.501 | 0.056 | 79.678 | 1 | 0.000 | 1.650 | 1.478 | 1.841 |
| Family economic status | 0.720 | 0.061 | 140.267 | 1 | 0.000 | 2.055 | 1.824 | 2.315 |
| Academic record | 0.488 | 0.049 | 98.023 | 1 | 0.000 | 1.629 | 1.479 | 1.795 |
| Family function status | 0.990 | 0.060 | 268.543 | 1 | 0.000 | 2.690 | 2.390 | 3.028 |
| Constant | -3.302 | 0.245 | 182.299 | 1 | 0.000 | 0.037 | | |
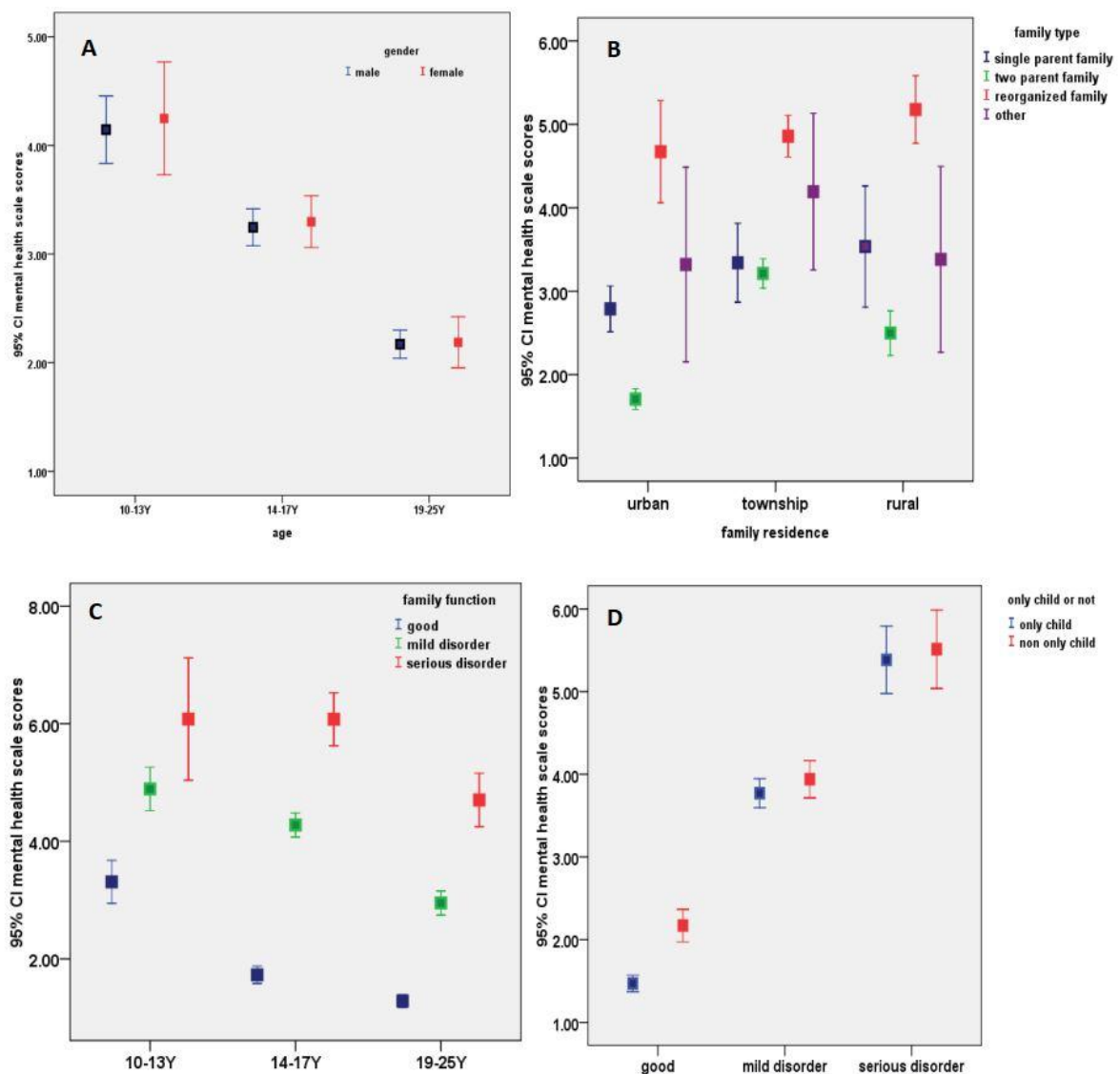


**Figure 1: Mental health scale scores of different types of adolescents.**
(A) Mental health scale scores in different age adolescents
(B) Mental health scale scores of adolescents from different family residence and family type
(C) Mental health scale scores of adolescents from different age and family function
(D) Mental health scale scores of adolescents in different family function and only child or not

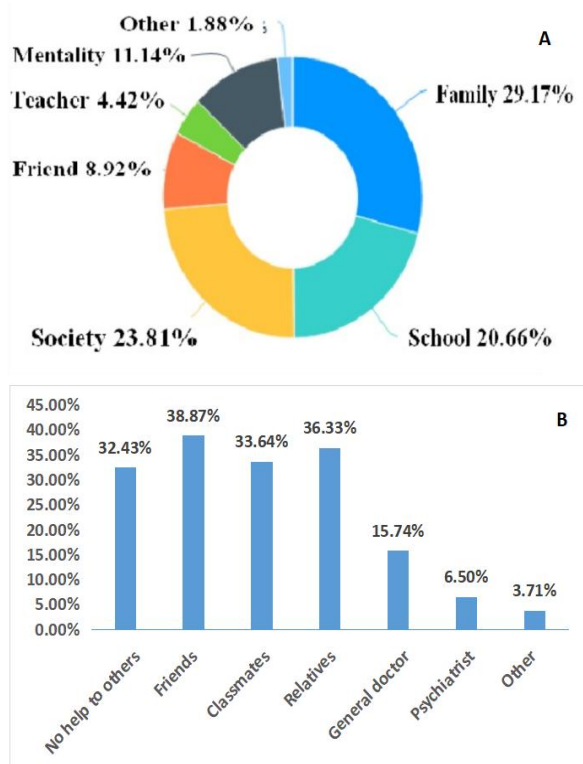**Figure 2: Mental health related beliefs and behaviors of adolescents.**
(A)The factors that adolescents thought the greatest impact on their mental health. (B)Who have adolescents asked for help because of mental or p sychological problems

## 4. DISCUSSION

Adolescents are a special period in life. During this period, their psychology will experience many contradictions, and even some psychological problems, such as depression, anxiety, obsessive-compulsive disorder, autism, inferiority complex, jealousy, rebellion. Studies found that the prevalence of some psychological problems among Chinese adolescents increased in recent years. The psychological development of adolescents was affected by genetic factors and environmental factors. Genetic factors may determine that adolescents have some psychological tendencies, which may make them more prone to some psychological problems.[19,20] Environmental factors refer to the family, school and social factors in the process of adolescents' growth and development, which will have an important impact on adolescents' psychological development. Many studies have found that the native family status of teenagers played an important role in adolescents' mental health, but different studies have increased differences, and how the characteristics of native families affect adolescents' mental health was also different in different studies.[21-25]

Our research group put forward this study after reading a large number of documents and combined with their own Growth experience. A questionnaire survey was conducted among 4415 adolescents in South China. The study found that the self-evaluation for their native

family by school adolescents in South China needs to be improved: only 38.1% of students thought their family atmosphere was harmonious, and 20.1% of students thought their parents didn't care enough about themselves; Only 51.89% of families had good functions. The mental health status of adolescents is not high: nearly half (46.5%) of the students had abnormal psychological status, and more than 60% (64.4%) of the students had suicidal thoughts or behaviors due to mental or psychological problems in the past. These situations deserved the attention of relevant families, schools and education departments.[26,27]

In terms of the impact of native family on adolescents' mental health, through multi factor analysis, we found that age, family residence, family type, rearing style, parents' educational status, family economic status, academic achievement and family function were the main influencing factors of adolescents' mental health. Among them, the mental health status of adolescents with poor academic performance, family residence in rural areas, poor family economic status, from reorganized families, indulgent upbringing, insufficient parental care for their children, and family dysfunction were even worse. This confirms our hypothesis: the mental health level of adolescents in South China is not high, and a good native family is very important to their mental health.

According to the findings of this study, it is suggested that relevant departments should pay more attention to the mental health problems of adolescents, strengthen the mental health screening of adolescents in the annual physical examination, strengthen the construction of adolescents' psychological quality, give play to the role of family education, find out the adverse effects of native families on adolescents as soon as possible, vigorously improve family functions and family atmosphere, and enhance family support ability. Schools and health departments jointly carry out psychological counseling, strengthen the mental health education of teenagers, and conduct dynamic evaluation and follow-up[28-32], so as to improve the mental health level of adolescents in an all-round way.

Based on the results of this survey, the following conclusions were drawn: the mental health level of adolescents in South China is not high. The native family residence, family type, rearing style, parents' educational background, family economic status and family function status are the main influencing factors of adolescents' mental health. A good native family is very important for adolescents' mental health. The society should pay attention to the mental health problems of adolescents, encourage the improvement of the native family situation, and increase the support of families to adolescents to help them maintain a healthy mental state.

**Limitations and prospects:** Although this study has achieved satisfactory results, there were still some

limitations: (1) due to the limited time and limited resources available to us, the survey sample of this study was 4415 people, but the sample size still needs to be increased to improve the reliability of this study; (2) The subjects of our survey were all students in school, but did not include adolescents that were not in school, so we can not represent all adolescents; (3) All scales (APGAR scale and GHQ-12 scale) in this study were preliminary screening scales, and their accuracy needs to be improved. However, psychological problems were relatively general and no detailed classification research was made, which needs to be verified by more detailed and accurate diagnostic scales.

**CONFLICT OF INTEREST**
The authors have declared that no competing interests exist.

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