

The impact of local colleges' interference in middle school students' family psychological intervention on the psychological health status of students learning at home – a case study of northern Guangdong

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Abstract. – **OBJECTIVE:** Using college psychological resources, this paper attempts to intervene in the family psychology of middle school students learning at home during the epidemic in northern Guangdong. Focusing on the impact of family system on the psychological health status of middle school students learning at home, it provides reference for targeted family psychological intervention and treatment of students.

SUBJECTS AND METHODS: The “Psychological Health Survey Questions for Middle School Students Learning at Home during the Epidemic” was compiled to conduct a class-based random sampling survey of primary and secondary schools in northern Guangdong. Family psychological intervention is provided for key groups.

RESULTS: (1) The middle school students' psychological health level was above average on the whole, but with great individual differences. (2) Families have a significant impact on students' psychological health, among which parents' occupation, family integrity, family economy, family atmosphere, and the number of children in the family all exert a significant impact on middle school students' psychological health. (3) Stepwise regression analysis reveals that the six factors of gender, grade, ethnicity and place of residence, family economy and atmosphere in the family environment system are included in the regression equation, explaining 11.6% of middle school students' psychological health. (4) Family psychological intervention significantly improves middle school students' psychological health.

CONCLUSIONS: Local colleges' interference in middle school students' family psychological intervention can effectively improve psychological health of middle school students learning at home. Society, families and schools should value family psychological construction, and effectively unite social forces to jointly promote students' psychological health.

Key Words:

Local colleges, Psychological intervention, Learning at home, Middle school students, Psychological health.

Introduction

The outbreak of COVID-19 has triggered a series of stress responses or psychological deviations in people¹, leading to denial, doubt, anxiety, fear, and even fear caused by excessive attention. Lifestyle changes owing to the epidemic prevention, such as fewer outdoor activities, fewer gatherings with friends, and more time at home, have brought loneliness and isolation to a certain extent, which exacerbates the occurrence of negative emotions and psychological illnesses.

For middle school students in adolescence period, their emotional experiences are strong and enthusiastic, and easily change. Middle school students have stronger self-awareness and independent awareness but are more susceptible to the external environment psychologically. After the outbreak of COVID-19, due to original learning pressure and the double pressure of the epidemic on the work and economy of important family members, middle school students are prone to conflicts while learning at home, which causes psychological crises, and even extreme events. Northern Guangdong is in Guangdong's economically backward area. There are insufficient psychology teachers to serve school students, the psychological health education system is incomplete, and social and psychological service resources are in severe shortage. It is necessary to give full play to the social service function of local colleges and let college psychology teachers and students interfere in local students' psychological intervention, thereby jointly maintaining the psychological health of middle school students.

Psychological intervention falls in the category of generalized psychotherapy, which is to employ simple psychological interventions to help clients correct their psychological problems and behaviors,

deal with impending problems, restore psychological equilibrium, improve psychological health, and increase behavioral efficiency. Family is the most direct environment of students' life, which creates a profound, real and direct impact on students' psychological health^{2,3}. The epidemic shocks many families, leading to economic income decline, unstable income, or even unemployment, or parents work outside for a long time, unable to regularly care for and accompany children, etc. Maintaining psychological health of important family members and building a good family psychological atmosphere carries practical significance for the healthy emotions of middle school students learning at home for a long time.

Subjects and Methods

Research Objects

A survey was conducted on students from 9 middle schools in northern Guangdong through a new media platform, and a total of 7472 valid questionnaires were collected. There are 3,432 boys and 4,040 girls; 4,317 junior high school students (1,583 in grade one, 1,449 in grade two, and 1,285 in grade three); 3,155 senior high school students (1,815 in grade one, 1,332 in grade two, and 8 in grade three).

Survey Tools

The emotional and behavioral psychology health questionnaire was compiled for middle school students, which makes analysis from four aspects: emotional response (6 items), interpersonal communication (5 items), avoidance behavior (3 items), and self-cognition (8 items). The scale has a total of 22 items, and the α reliability coefficient is 0.884. The questionnaire has good reliability, which adopts a 5-point rating scale with a total score of 110 points. A higher overall score indicates better psychological health of middle school students during the epidemic.

Family Psychological Intervention

Based on the survey data, 17 groups of families were enrolled for 2 months of voluntary investigation through the school. Group intervention was given once every two weeks to provide individual family consultation as needed through regular follow-up visits. The intervention includes two parts: (1) Group psychological intervention. Through group discussions, explain how to deal with parent-child conflicts for families, and promote changes in parents' family education concepts. Cases are used to illustrate the psychological health education and scientific education concepts of middle school students, the

laws, characteristics and methods of family education. Special cases are analyzed to let parents grasp the initiative to control the family atmosphere. (2) Individual consultation. Conduct home visits, solve specific problems for individual families.

Statistical Analysis

The questionnaire data were statistically analyzed using SPSS 22.0 (IBM, Armonk, NY, USA). The psychological health scores of middle school students' home study were analyzed and compared the psychological health levels under different factors such as gender, grade and family background factors, which $p < 0.05$ means statistical difference and $p < 0.01$ means very significant difference. Independent sample t -test was performed on the family intervention results, where $p < 0.05$ means statistical difference and $p < 0.01$ means very significant difference.

Results

Analysis on Psychological Health of Middle School Students Learning at Home in Northern Guangdong

Differential analysis of middle school students' psychological health in individual systems

The overall average score of psychological health of middle school students in northern Guangdong is (152.73±24.57) points. The scores of each dimension are ranked in descending order as: self-management (25.04±5.40) points, learning and life emotions (23.39±5.29) points, interpersonal communication (23.36±4.65) points, self-cognition (23.06±4.57) points, learning effect at home (19.42±3.91) points, learning and living habits (18.18±4.24) points, family support (10.21±3.29) points, diet and sleep (10.06±3.12) points (Table I).

Boys and girls have significantly different scores in emotional response, avoidance behavior and self-cognition, but no significant difference is exhibited in interpersonal communication ($t = -1.82$, $p > 0.05$), and boys have significantly higher psychological health level than girls ($t = 5.96$, $p < 0.01$) (Table I).

Middle school students of different grades have significantly different scores in emotional response, interpersonal communication, avoidance behavior and self-cognition, and junior high school students generally have higher psychological health level than senior high school students ($F = 11.54$, $p < 0.01$). Grade three of senior high school has a highest psychological health score of 75.63 points, and grade

Table I. Differential analysis of middle school students' psychological health in individual systems.

Variable	Statistical value	Emotional Response	Interpersonal communication	Avoidance behaviour	Self-cognition	Total Psychological Health Score
Gender	Male	20.60±4.67	16.35±3.47	10.22±2.54	27.24±5.09	74.41±12.59
	Female	19.36±4.85	16.50±3.45	9.86±2.46	26.92±5.05	72.64±12.96
	T	11.22	-1.82	6.17	2.70	5.96
	p	0.00**	0.07	0.00**	0.01*	0.00**
Grade	Grade one of junior high school	20.52±5.23	16.56±3.68	10.25±2.70	27.65±5.37	74.98±13.94
	Grade two of junior high school	19.78±5.23	16.29±3.75	10.02±2.68	26.92±5.40	73.00±14.09
	Grade three of junior high school	19.96±5.07	16.64±3.71	10.17±2.54	27.51±5.08	74.28±13.53
	Grade one of senior high school	19.52±4.08	16.14±3.08	9.82±2.26	26.39±4.62	71.87±10.84
	Grade two of senior high school	19.93±4.37	16.61±3.04	9.91±2.29	27.00±4.78	73.45±11.48
	Grade three of senior high school	22.38±4.34	16.13±3.14	9.62±2.56	27.50±4.31	75.63±9.84
	F	8.22	5.12	6.32	12.95	11.54
p	0.00**	0.00**	0.00**	0.00**	0.00**	

Note: * represents $p < 0.05$, ** represents $p < 0.01$, the same below.

one of senior high school has a lowest psychological health score of 71.87 points (Table I).

Differential Analysis on the Impact of Family Background on Middle School Students' Psychological Health in Northern Guangdong

Middle school students living in different family types have significantly different scores in emotional response, interpersonal communication and avoidance behavior, but no significant difference is exhibited in self-cognition scores ($F=2.51, p > 0.05$). Middle school students living in complete families have lower avoidance behavior score than left-behind middle school students, but have the highest scores in emotional response, interpersonal communication and self-cognition. Middle school students from single-parent families and orphan families are not significantly different in the scores of each dimension. On the whole, psychological health scores of middle school students are significantly different between different family types ($F=6.67, p < 0.01$). Where middle school students from complete families have a highest psychological health score of 73.74 points; middle school students from orphan families have a lowest psychological health score of 71.53 points (Table II).

Middle school students from families with different economic levels have significantly different scores in various dimensions of psychological

health. Psychological health scores are ranked in descending order as those of students from families with fairly good economy > students from families with good economy > students from families with general economy > students from poor families.

Middle school students under different family atmospheres have significantly different scores in emotional response, interpersonal communication, avoidance behavior and self-cognition. Middle school students in a relaxed and harmonious atmosphere have the highest scores in all dimensions of psychological health, while those in atmosphere with frequent quarrels and conflicts have the lowest scores in all dimensions of psychological health. On the whole, psychological health scores of middle school students are significantly different under different family atmosphere ($F=291.13, p < 0.01$), and the psychological health scores are ranked in descending order as those of students in relaxed and harmonious atmosphere > students in basically harmonious atmosphere > students in relatively tense atmosphere > students in atmosphere with frequent quarrels and conflicts (Table II).

Effect of Family Psychological Intervention on the Psychological Health Level of Middle School Students

Families of middle school students were randomly enrolled for family psychological intervention. After two months of family psychological intervention, middle school students have better psychological health. Parents learning intervention

Table II. Differences in psychological health of middle school students from different family environment systems

Variable	Statistical value	Emotional Response	Interpersonal communication	Avoidance behaviour	Self-cognition	Total Psychological Health Score
Family type	Complete family	20.03±4.76	16.51±3.45	10.05±2.49	27.14±5.06	73.74±12.77
	Left-behind children	19.75±4.83	15.83±3.28	10.12±2.49	26.56±5.11	72.27±12.67
	Single parent (divorced) family	19.27±5.05	15.92±3.44	9.84±2.49	26.66±4.97	71.69±12.72
	Orphan	19.21±4.82	15.98±3.22	9.53±2.59	26.82±5.16	71.53±13.07
	F	6.15	8.33	3.31	2.51	6.67
	<i>p</i>	0.00**	0.00**	0.02*	0.06	0.00**
Family economy	Quite good	19.77±6.69	16.45±4.71	9.74±3.73	30.21±5.53	76.17±17.31
	Fairly good	20.68±4.90	16.94±3.57	10.18±2.58	28.41±5.07	76.19±12.97
	General	19.91±4.69	16.42±3.38	10.04±2.45	26.83±4.97	73.19±12.52
	Poor	18.41±5.008	15.26±3.62	9.56±2.64	25.97±5.38	69.21±13.56
	F	26.28	27.65	7.34	50.49	38.641
	<i>p</i>	0.00**	0.00**	0.00**	0.00**	0.00**
Family atmosphere	relaxed and harmonious	21.24±4.89	17.53±3.41	10.54±2.55	28.71±5.15	78.02±13.06
	Basically harmonious	19.80±4.38	16.30±3.16	9.95±2.36	26.64±4.59	72.69±11.39
	Tense	17.76±4.81	14.63±3.37	9.22±2.51	24.93±5.13	66.54±12.18
	With frequent quarrels and conflicts	16.14±5.14	13.38±3.64	8.69±2.71	24.16±5.71	62.37±13.39
	F	192.91	260.28	95.20	188.16	291.13
	<i>p</i>	0.00**	0.00**	0.00**	0.00**	0.00**

skills value family psychological education, develop skills for handling parent-child conflicts, and master ways to regulate emotions. After the intervention, parents' parenting style, family environment, family intimacy and adaptability are significantly better, which effectively improves middle school students' psychological health (Table III).

Discussion

The Overall Psychological Health Level of Middle School Students Learning at Home Needs to be Improved

Studies have shown that during the epidemic, boys have higher psychological health level than girls, and girls are more susceptible to the epi-

dem, showing lower psychological health levels. This has something to do with the cognitive emotion regulation strategies of middle school students of different genders. Adolescents of different genders display significant differences in anxiety and negative emotions. Girls are more prone to anxiety than boys^{4,5}. Junior high school students generally have higher psychological health level than senior high school students. Senior high school students face greater academic pressure. Due to the COVID-19 epidemic, students can only study online at home. With interference of various factors, they have low learning efficiency. Senior high school students suffer from greater learning pressure and more psychological problems than junior high school students, so their degree of crisis is higher^{5,6}.

Table III. The effect of family psychological intervention on the psychological health of middle school students (N=17)

	Emotional response	Interpersonal communication	Avoidance behavior	Self-cognition	Total score
Before intervention	16.54±5.24	15.38±4.64	8.99±3.71	25.36±6.61	69.67±6.96
After intervention	19.90±4.38	17.30±3.16	8.95±2.36	28.64±3.59	73.43±7.84
T	12.71	10.27	1.60	6.26	21.33
<i>p</i>	0.00**	0.00**	0.87	0.00**	0.00**

Family Atmosphere Significantly Affects the Psychological Health of Middle School Students Learning at Home

Family structure mainly refers to the composition of family members and the internal structure of the family, including population of the family. A complete family structure exerts an important impact on the physical and psychological health development of middle school students. Structural function theory emphasizes that in family as a structure, each family member plays a unique role. Fathers and mothers play many roles in the growth process of adolescents, such as leaders of values, shapers of self-confidence, and instructors of social skills^{7,8}. In this study, students living in complete families have a high psychological health level, while middle school students in single-parent and orphan families have poor psychological health. Family incompleteness results in unbalanced family roles, incomplete fatherly or motherly love, making students more vulnerable to social pressure^{9,10}. In particular, during the epidemic, a major negative life event, these students lack warmth and care in their families, resulting in lack of psychological attachment, lack of a complete social support system, which is unfavorable for students' smooth handling of this crisis period.

For middle school students, poor family economic conditions will not only limit material living conditions and high-quality educational resources, but also mean a worse family environment, more negative emotions and poor psychological health¹¹.

Family Psychological Intervention Promotes Healthy and Benign Psychological Health Development of Middle School Students Learning at Home

During the period of home isolation, quarrels and conflicts will inevitably occur in the family, forming a tense family atmosphere, which negatively affects feelings between parents and children by passing on bad emotions. Family atmosphere is highly positively correlated with middle school students' psychological health. A harmonious parent-child relationship and family atmosphere can improve students' psychological health. During the epidemic, adolescents may develop various negative emotions and behavioral reactions¹². In particular, adolescent middle school students have poor emotional stability. Living in a family environment full of indifference, alienation and tension will lead to unhealthy psychological health in

students and increase psychological deviation behavior. However, after adoption of comprehensive psychological intervention measures, the family environment, parenting style, family intimacy and students' adaptability are significantly improved, with students' bad behavior and emotions effectively reduced, which contributes to significantly better psychological health.

Parents should adjust and control their emotions, get along with their children in an amicable and calm way, respect and love each other to create a harmonious family atmosphere. Parents should try to participate in children's learning and life, express their expectations reasonably, train their children's will and quality, and cultivate positive and stable healthy emotions. They can help children jointly formulate work and rest schedule, improve children's self-confidence and self-discipline, and plan their everyday learning and living. Rich and healthy family life contributes to the formation and stability of middle school students' psychological health. In addition, parents can report more to the school about the life and psychological changes of students learning at home, so that the school can implement psychological health education and psychological crisis intervention and consultation in a timely and effective manner.

Colleges Intervene in Social Psychological Services to Jointly Maintain the Psychological Health of Middle School Students

The health of middle school students is not a personal problem, nor a family problem, but a social problem. Although psychological health has entered the public eye, the psychological health maintenance system is still extremely imperfect in underdeveloped areas. Colleges should gather professional resources, conduct psychological professional practice and co-construction with local basic education schools, intervene in family psychological construction, which is an effective way for colleges to participate in social services and train professional talents through social services.

Conclusions

The family system significantly affects the mental health of middle school students, of which the most important factors are the parental occupation, family integrity, family economy and family atmosphere.

Family intervention can effectively improve the mental health status of middle school students during home study.

Conflict of Interest

The Authors declare that they have no conflict of interests.

Informed Consent

This study abides by the ethics of psychological research. All participant participated voluntarily and signed the informed consent before family intervention.

Authors' Contributions

The paper was written by Suqun Liao; the data were collected by Jianghao Ye, Jie Chen and Wanchun Yan. All the authors participated in the data analysis.

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