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A STUDY ON THE STATUS OF ADVERSE CHILDHOOD EXPERIENCES OF COLLEGE STUDENTS IN GUANGXI UNIVERSITIES AND ITS CORRELATION WITH MENTAL HEALTH

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Abstract

Objectives: To understand the prevalence of adverse childhood experiences (ACEs) among undergraduates in Guangxi colleges and universities, and the correlation between adverse childhood experiences (ACEs) and mental health. **Methods:** College students from 11 undergraduate colleges and universities in Guangxi were selected for an online questionnaire survey by convenience sampling. The Chinese version of the Adverse Childhood Experiences questionnaire (C-ACE-IQ) was used to measure college students' adverse childhood experiences (ACEs), and SCL_90 was used to measure mental health. **Results:** The prevalence of ACEs was high in Guangxi college universities. There were significant differences between different types of ACEs in terms of gender, grade, whether they were only child, family type, place of birth, family economic status, and parents' education level, etc. ACEs were significantly and positively correlated with various factors of psychological symptoms among university students. **Conclusion:** Screening for ACEs may help to identify students with mental health problems. Schools, families, and relevant departments of society should work together to help college students with ACEs and safeguard their physical and mental health.

Keywords: ACEs, College students, Mental health,

Introduction

Adverse childhood experiences (ACEs) is primarily a collective term for many types of actual or potential harms to physical and mental health, survival, or development suffered before the age of 18 years, including physical abuse, emotional abuse, sexual abuse, and physical neglect, emotional neglect, or living in a dysfunctional family (where a family member is an alcoholic, drug addict, or has a mental illness), etc (Kalmakis & Chandler, 2015). It has been shown that at least 73.65% of people have experienced one type of adverse

childhood experience (Jackson et al., 2022). Research on adverse childhood experiences (ACEs) in China is still very limited, and there are few comprehensive assessment scales for ACEs that have been developed independently in China so far. There are mainly seven assessment scales for retrospectively assessing adverse childhood experiences worldwide, and the Adverse Childhood Experiences Questionnaire (ACE-IQ), which was compiled and introduced by WHO in 2016, has the feature of good international comparability, and the Adverse Childhood Experiences International Version Questionnaire (C-ACE-IQ), which was sinicized into the Simplified Chinese version by Professor HO et al. (Ho et al., 2019), was used to survey Hong Kong adolescents in China in 2019. was used to investigate the pattern of adverse childhood experiences among adolescents in Hong Kong, China, in 2019, and had good reliability and validity. The scale has been used in China to investigate the status of adverse childhood experiences in groups such as senior students (Jing-Yu et al., 2023), middle school students (Lulu, 2022), and parents of preschoolers (Xiao-yi et al., 2023), and has not yet been investigated in the group of university students. In this study, the International Scale of Adverse Childhood Experiences in Simplified Chinese (C-ACE-IQ) was used to investigate the prevalence of adverse childhood experiences among college students in Guangxi universities, and the Symptom Self-assessment Scale (SCL_90) was used to investigate their mental health status, to analyze the associations between adverse childhood experiences and mental health, and to provide scientific basis for the promotion of the mental health development of college students.

Research objectives

1. To investigate the prevalence of ACEs among college students in Guangxi colleges and universities.
2. To analyze the characteristics of ACEs among college students in Guangxi universities.
3. To analyze the correlation between ACEs and mental health of college students.

Scope of the research

1. College students enrolled in undergraduate colleges and universities in the Guangxi Zhuang Autonomous Region of China, encompassing first through fifth years.
2. The survey was conducted in January-February 2024, and consisted of feedback from college students on their adverse childhood experiences and mental health status.

Research Methodology

1. Research Methods

1.1 Basic data collection General demographic characteristics were collected using a structured questionnaire, including gender, ethnicity, grade level, only child, family type, place of birth, annual family per capita monthly income, mother's and father's education level respectively (elementary school and below/junior high school/high school/college/undergraduate degree or above).

1.2 Adverse Childhood Experiences Survey The Chinese version of the Adverse Childhood Experiences Scale (C-ACE-IQ) was used to measure adverse experiences. The scale contains 12 adverse childhood experience categories: emotional neglect, physical neglect, emotional abuse, physical abuse, sexual abuse, having an alcohol or drug abuser in the family, having a chronically depressed, mentally ill, chronically hospitalized, or suicidal individual in the family, having a family member who is incarcerated, having lost a parent, having parents who are separated or divorce, domestic violence, bullying, community violence. The score of adverse childhood experiences was calculated using the two-point scoring method. The total score was 0-12 points. The higher the score, the more types of adverse childhood experiences existed.

1.3 Mental health status survey Mental health status was measured with the SCL_90, which included 90 items and was divided into 5-level mental symptom self-assessment scale. The scale includes factors such as somatization (SOM), obsessiveness (OC), interpersonal sensitivity (IS), depression (DEP), anxiety (ANX), hostility (HOS), fear (PHOB), paranoia (PAR), and psychosis (PSY). Using the 5-point Likert scale, the higher the score, the more serious the mental health problems of the individual.

2. Data collection

In this study, the whole group sampling method was used to select 11 colleges and universities in Guangxi Zhuang Autonomous Region in January-February 2024, and students from freshmen to seniors were organized to fill out the questionnaires during classroom time with the assistance of the counselors, and the questionnaires were filled out by scanning the code on the site of the cell phone in order to ensure the validity of the answers and the representativeness of the samples. A total of 1,801 questionnaires were obtained from the 11 universities, and 1,792 valid questionnaires were obtained after excluding 9 questionnaires that were not completed or were filled out with obvious errors. The study was approved by the Medical Ethics Committee of Guangxi Medical University (Number: 2024 KY 0002).

3. Data analysis

Statistical analyses were performed using SPSS 27.0 to describe qualitative data using frequency and component ratios, χ^2 test, independent samples t-test for one-way analysis, and $p < 0.05$ as the critical value to determine statistical significance. Spearman correlation was used to analyze the correlation between ACEs and the factors of mental health, and $p < 0.05$ was used as the correlation was statistically significant.

Research results

1. Basic Characterization of Research Subjects

A total of 1,792 college students were surveyed. Among them, the mean age of the college students was 20 years old, with a standard deviation of 1.478 years old; 650 (36.3%) were male college students, and 1,142 (63.7%) were female college students; 744 (41.5%) were first-year students, 634 (35.4%) were sophomores, 3 297 (16.6%), and 116 (6.5%) juniors and seniors.

2. Prevalence of ACEs among college students and unifactorial analysis

Among the 1,161 college students with ACEs, the detection rate was 64.8%, with the highest rate of emotional neglect (40.4%), the second and third highest rate of domestic violence (23.5%), and loss of parents (16.9%), and the lowest rate of family history of mental illness (2.5%), incarceration of family members (2.7%), and bullying (2.8%), with the rates of the different types of ACEs detailed in Figure 1. detection rates are detailed in Figure 1.

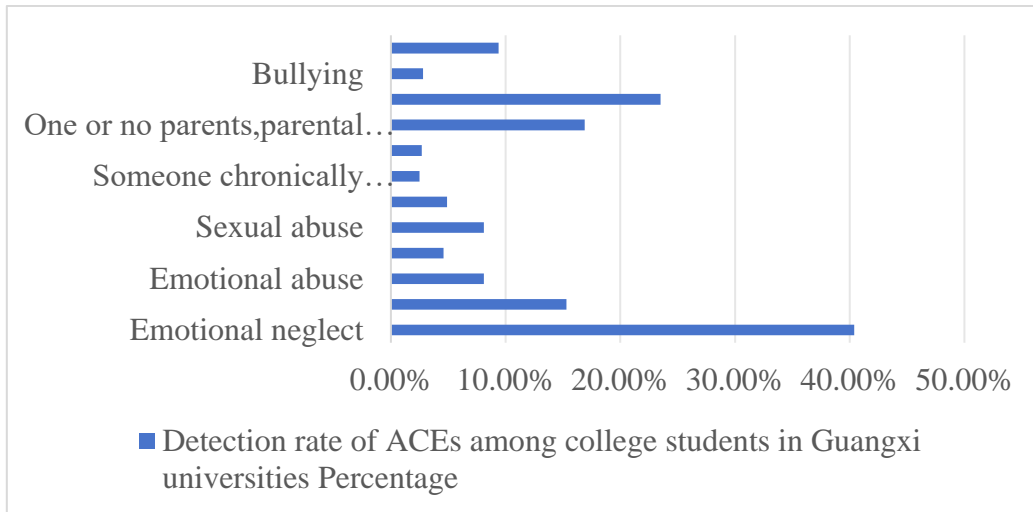


Figure 1: Detection rate of ACEs among college students in Guangxi universities

In this study, the general demographic information of college students was subjected to a chi-square test with the ACEs score profile. The results show that there are significant differences among the college students with family members incarcerated and bullied in different family types. College students with emotional neglect experience have significant differences in different grades, whether they are the only child or not, different family types, places of origin, annual per capita family income, and the educational level of mothers and fathers. College students with emotional abuse experience have significant differences in different family types and father's education level. There is a significant gender difference between college students with physical abuse and sexual abuse experience; College students who have lost their parents have significant differences in whether they are the only child or not and in different family types. See Table 1 for details.

Table 1 Comparison of ACEs Scores of College Students with Different Demographic Characteristics

Independent Variable	Emotional neglect (M SD P)	Emotional abuse (M SD P)	Physical abuse (M SD P)	Sexual abuse (M SD P)	Incarcerated household member (M SD P)	One or no parents, parental separation or divorce (M SD P)	Household member treated violently (M SD P)	Bullying (M SD P)	Community violence (M SD P)
Gender									
Male n=650	2.141	0.064	12.124	11.224	1.074	0.285	2.29	2.106	24.000
Female n=1142	0.143	0.800	0.001	0.01	0.300	0.593	0.130	0.147	0.001
Grade									
One n=744									
Two n=634	15.319	2.162	7.565	2.079	5.909	5.746	12.954	4.234	22.202
Three n=297									
Four n=109	0.01	0.706	0.109	0.721	0.206	0.219	0.05	0.375	0.001
Five n=8									
Only child									
Yes n=358	0.285	0.178	0.545	0.435	12.328	1.327	3.548	1.143	0.074
No n=1434	0.01	0.673	0.461	0.509	0.001	0.249	0.06	0.285	0.786
Type of family									
Nuclear family n=1582									
Single parent divorced families n=91	17.106	12.942	5.291	0.397	764.377	22.575	17.849	8.081	0.991
Reorganized family n=54	0.01	0.01	0.152	0.941	0.001	0.001	0.001	0.05	0.803
Bereaved families n=65									
Region									
City n=493	20.787	3.863	2.324	0.264	0.267	0.069	14.249	0.626	9.778
Townships n=428									
Rural n=869	0.001	0.145	0.313	0.876	0.875	0.966	0.01	0.731	0.01
Income(monthly)									
<¥3000 n=717	17.327	0.866	4.586	4.463	5.865	0.927	16.361	4.123	12.552
¥3000-¥6000 n=663									
¥6000-¥10000 n=263	0.01	0.834	0.205	0.216	0.118	0.819	0.01	0.248	0.01
>¥10000 n=149									
Mother's education									
Elementary and below n=679									
Middle School n=654	35.389	6.254	1.619	3.326	9.043	0.262	18.641	1.058	5.860
High School n=183									
College n=152	0.001	0.181	0.805	0.505	0.060	0.992	0.01	0.901	0.210
Bachelor's degree or above n=124									
Father's education									
Elementary and below n=412									
Middle School n=794	36.165	13.799	2.933	4.07	2.736	6.44	24.453	0.44	2.373
High School n=269									
College n=176	0.001	0.01	0.569	0.397	0.603	0.169	0.001	0.979	0.667
Bachelor's degree or above n=142									

3. Correlation analysis between ACEs and psychological symptoms in college students

Spearman correlation analysis was conducted between ACEs scores and SCL_90 scores. The results showed that the scores of different types of ACEs were significantly and positively correlated with 10 factors, including somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, horror, paranoia, psychoticism, sleep and diet, etc., as shown in Table 2.

Table 2 Correlation Analysis Between ACEs and SCL_90

Independent Variable	SOM	OC	IS	DEP	ANX	HOS	PHOB	PAR	PSY	Others
Emotional neglect	.075* *	.164 **	.151 **	.144* *	.101* *	.087**	.076**	.089 **	.110 **	.105* *
Physical neglect	.164* *	.125 **	.127 **	.148* *	.150* *	.159**	.137**	.164 **	.157 **	.157* *
Emotional abuse	.146* *	.149 **	.153 **	.154* *	.158* *	.169**	.091**	.157 **	.166 **	.145* *
Physical abuse	.107* *	.105 **	.126 **	.102* *	.119* *	.154**	.059*	.122 **	.102 **	.095* *
Sexual abuse	.145* *	.129 **	.171 **	.167* *	.164* *	.129**	.145**	.124 **	.164 **	.132* *
Alcohol and/or drug abuser in the household	.062* *	.075 **	.084 **	.064* *	0.044	.068**	0.046	.067 **	.065 **	.066* *
Someone chronically depressed, mentally ill, institutionalized or suicidal	.066* *	.072 **	.088 **	.065* *	.053* *	.060*	0.044	.076 **	.068 **	.066* *
Incarcerated household member	.061* *	0.033	0.038	.057* *	.051* *	0.042	.058*	0.039	.053 *	.058* *
One or no parents, parental separation or divorce	.057* *	.058 *	.062 **	.078* *	.052* *	.063**	0.044	.047 *	.065 **	0.042
Household member treated violently	.152* *	.222 **	.194 **	.200* *	.184* *	.182**	.139**	.153 **	.185 **	.187* *
Bullying	.156* *	.134 **	.141 **	.147* *	.143* *	.127**	.096**	.138 **	.132 **	.131* *
Community violence	.119* *	.134 **	.130 **	.140* *	.123* *	.140**	.088**	.140 **	.141 **	.161* *

Notes : * $P < 0.05$, ** $P < 0.01$

Discussion

1. Analysis of the current situation of ACEs in college students

In this study, the detection rate of ACEs among college students was 64.8%, a study on ACEs among college students enrolled in a higher vocational college in Suzhou City was 75.1% (Jing-Yu et al., 2023), and a study on ACEs among secondary school students in Hunan Province was 87.6% (Lulu, 2022). The results of the study showed that adverse childhood experiences were prevalent and high in prevalence in Guangxi University of Higher Education. The detection rate was lower than that of senior and middle school students, and the difference may be related to different types of students, with more ACEs among senior college students and middle school students. In addition, the type of childhood adverse experience with the highest detection rate in this study was affective neglect (40.4%), and the survey conducted by Jingyu Zhao (Jing-Yu et al., 2023) also had the highest detection rate of affective neglect (75.1%), and both studies demonstrated that emotional neglect was the type of ACEs that was experienced the most by college students at school. This may be due to the fact that parents are more concerned with the materialistic needs of their children and hardly have room to understand their own or their children's emotional feelings.

2. Characterization of the problem of ACEs among college students

The data of this study show that there are significant differences in different types of ACEs among college students in terms of gender, grade level, whether they are only child, family type, place of birth, family economic status, and parents' education level, while there is no significant difference in terms of ethnicity. This is consistent with the findings of Zhang Aohan (Aohan et al., 2022) et al. that there were significant differences in ACE-IQ factor scores for neglect abuse, family dysfunction, and community violence among college students of different grades. It is worth noting that there were significant family structure differences in the adverse childhood experiences of college students, and there were significant differences among college students with different family types in the six types of adverse childhood experiences: incarceration of a family member, bullying, emotional neglect, emotional abuse, loss of a parent, and domestic violence, which is consistent with the findings of Chenlu (Chenlu, 2022). In addition, this study presents significant differences in demographic characteristics such as gender, whether or not the only child, place of birth and family economic status of some types of adverse childhood experiences among college students, which has not been presented in existing studies. The percentage of male students experiencing physical abuse and community violence was significantly higher than that of female students, and the percentage of female students experiencing sexual abuse was significantly higher than that of male students, which was related to the social roles of gender; the percentage of non-only children experiencing emotional neglect was higher, and the percentage of only children experiencing the loss of a parent was higher; the percentage of college students from rural areas experiencing emotional neglect, domestic violence, and community violence was higher than that of those from townships and cities; and the economic situation of families. The more difficult a college student is, the higher the rate of experiencing emotional neglect, domestic violence, and community violence.

3. Correlation analysis between ACEs and mental health of college students

The data in this study showed that ACEs were significantly and positively correlated with all factors of psychological symptoms in college students, which is consistent with the findings that the more ACEs there are, the higher the risk of mental health problems (Aohan et al., 2022), and therefore screening for ACEs may be helpful in identifying students with mental health problems. Colleges and universities can conduct surveys on ACEs to ensure confidentiality of information, which can help to reveal the true results, and intervene as early as possible for individuals with ACEs, by opening one-on-one counseling rooms, and inviting experts in related fields of psychology to conduct relevant lectures. The relevant departments of the society should also pay attention to the relevant social problems, in order to avoid the occurrence of ACEs from the source. In addition, for individuals with ACEs, the warmth of the family is essential, encouraging them to talk about their traumatic experiences with their family members, who should also provide sufficient care and support to increase their sense of security.

In conclusion, this study shows that ACEs and mental health are positively correlated. As the successors of the new era, the mental health of college students is crucial, and schools, families, and relevant departments of the society should join forces to build a platform for the healthy growth of college students, provide a warm harbor for those with ACEs, and safeguard their physical and mental health. Since the population of this study is limited to college students, the applicability of the conclusions to other groups needs to be further verified, and future studies can be conducted on other groups (such as socially disadvantaged groups) to verify the generalizability of the conclusions.

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