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Antisocial Behavior and Antisocial Personality Disorder Among Youth in Ethnic Minority Areas in China: A Cross-sectional Study

ABSTRACT

Objective: Antisocial behavior and antisocial personality disorder (ASPD) cause serious harm to society and families. Ethnicity may have an impact on an individual's antisocial behavior and the incidence of ASPD. Therefore, this study aimed to investigate the current status of antisocial behavior and ASPD among youth and its correlation with ethnicity in ethnic minority areas in China.

Methods: A total of 2475 Chinese youth (1794 under 18 and 681 greater than or equal to 18) were recruited from December 1 to 30, 2021, in Yunnan, China. All participants completed a General Information Questionnaire and the Personality Diagnostic Questionnaire Fourth Edition Plus (PDQ-4+). Associations between antisocial behavior and ASPD and sociodemographic factors such as ethnicity were examined using binary logistic regression analysis.

Results: The positive rate of antisocial behavior screening in youth was 5.4% (95% CI (confidence interval): 4.3-6.4), with a positive rate of ASPD screening of 4.4% (95% CI: 2.9-6.0). Male, single-child and maternal education level at senior high school and above were risk factors for positive antisocial behavior screening, while senior high school grade and medium subjective family economic status were protective factors for positive antisocial behavior screening. Being male and paternal educational background were risk factors for positive ASPD screening.

Conclusion: This study found high rates of positive screening for antisocial behavior and ASPD in youth and no significant differences in ethnicity. These results can be used to inform personality development.

Keywords: Antisocial behavior, antisocial personality disorder, ethnic, youth, related factors

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Introduction

Antisocial personality disorder (ASPD) is characterized by social maladjustment, vulnerability to violent behavior, and high levels of aggression that usually begin in childhood or adolescence and persist into adulthood.[1-3] Such individuals have extremely high unemployment and divorce rates due to compliance difficulties with social norms and laws and the inability to maintain stable working conditions and interpersonal relationships.[1] Most individuals diagnosed with ASPD may have multiple mental disorders such as post-traumatic stress disorder, severe depression, anxiety disorder, and bipolar disorder, which pose a serious burden on society and family.[1,4-8] Previous results have shown that the prevalence rate of ASPD among adults in community samples was 3.3-19%,[4,5,9] while for those ≥65 years old, it was only 0.78%.[6] The prevalence of ASPD may decrease with age, but the level of antisociality increases for some patients.[10-11]

People with ASPD begin to exhibit antisocial behavior from the age of 15, but diagnosis is not possible until the age of 18.[12] In 1993, Moffitt[13] put forward the theory of the maturity

gap. This stated that cognitive ability reached an adult level at the age of about 16 years, but that psychological maturity did not reach an adult level until after 18 years. Although teenagers have a rational cognition of antisocial behavior, they still lack psychological protection. The gap between physical and psychological maturity makes them more prone to antisocial behavior in adolescence.[13] Antisocial behaviors include those that usually infringe upon the rights of others, characterized by continuous aggression, deception, property destruction, and violation of the rules of social conduct.[14,15] Further, by lying, bullying, arson, substance abuse, and interpersonal difficulties.[16] Fortunately, adolescent antisocial behavior predicts the probability of ASPD in adulthood, while intervention against adolescent antisocial behavior reduces the incidence of antisocial personality disorder in adulthood.[17] Therefore, a better understanding of the incidence of antisocial behavior and ASPD is beneficial to the cultivation of youth personality.

There have been several studies conducted on personality disorders in adolescents,[18-20] but few have focused on ASPD and antisocial behavior. Additionally, China has 56 ethnic groups, but it is rare to include ethnicity in studies of personality disorders. From a national cultural perspective, different national cultural backgrounds may shape social groups with different values and patterns of behavior.[21] It has been suggested that the detection rate of personality disorders may be higher among ethnic minorities, as some of them have been isolated for long periods of time and are fighting against various natural aggressions.[22] In China, Yunnan is the province with the largest variety of ethnicities, including 26 ethnic groups. Therefore, this study aimed to investigate the current status of antisocial behavior and ASPD among adolescents in Yunnan, China, and determine whether there is an association with ethnicity, to provide a reference for the cultivation of personality development.

Method

Subjects

The study population was recruited from students in middle schools, high schools, or universities in Yunnan Province. The inclusion criteria for participants were as follows: (1) students studying in Yunnan Province; (2) living and residing in an ethnic minority area for a long period of time; and (3) having the ability to give informed consent. The exclusion criteria were as follows: (1) those who took a leave of absence during the survey; (2) severe physical illnesses such as heart failure, cirrhosis of the liver, or systemic lupus erythematosus; (3) previously diagnosed mental disorders; and (4) those who refused to participate in the survey.

MAIN POINTS

- *The positive rate of antisocial behavior screening in youth was 5.4%, and the positive rate of antisocial personality disorder (ASPD) screening was 4.4%.*
- *Antisocial behavior was strongly associated with gender, grade, single-child status, maternal education level, and subjective family economic status, whereas ASPD was strongly associated with gender and paternal educational level.*
- *This study may provide reliable guidance for personality development in young people.*

Assessment Tools

General Information Questionnaire: The general information questionnaire obtained information concerning age, gender, grade, ethnicity, single-child status, family structure, subjective family economic status, family location, and parental education level.

Personality Diagnostic Questionnaire Fourth Edition Plus: Personality Diagnostic Questionnaire Fourth Edition Plus (PDQ-4+), compiled by Dr. Hyler of the United States, was used to evaluate 12 types of personality disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). The answers in the Personality Questionnaire were either "yes" or "no," scored as 1 and 0, respectively.[23] Personality Diagnostic Questionnaire Fourth Edition Plus was translated into Chinese by Yang Jian and adapted for use in China, with a good alpha coefficient; the ASPD alpha coefficients were 0.69.[24] Each item of the PDQ-4+ accurately reflects a single diagnostic criterion for DSM-IV personality disorders and can be used as a potential screening tool.[19,25] In this study, participants who were ≥18 years old with ASPD scores ≥5 were defined as positive for ASPD screening[19] and participants who <18 years old were defined as positive for antisocial behaviors.[26] The Cronbach's alpha of the PDQ-4+ scale in this study was 0.931.

Quality Control

A convenience sampling method was employed to administer the general data questionnaire and PDQ-4+ survey to students in 9 schools in Lijiang City, Dali Bai Autonomous Prefecture, and Nujiang Lisu Autonomous Prefecture, Yunnan Province, from December 1 to 30, 2021. The questionnaires were collected after completion, and the survey data entry was done via EpiData 3.1 software (EpiData Association, Enghavevej, Odende, DEN). Questionnaires that lacked basic data and had obvious logical errors were discarded.

Ethics Approval and Consent to Participate

The principles of the Declaration of Helsinki were adhered to throughout the study, which was approved by the Ethics Committee of Dali University (November 2, 2021). Informed consent was obtained from all subjects. They were made fully aware of the purpose and potential benefits of the study. Information was collected after obtaining the voluntary informed consent of each subject. They had the right to withdraw from the study at any time. For subjects under the age of 18, after obtaining their informed consent, informed consent of their parents and/or legal guardians was obtained by telephone, as was sub-section ethical approval and consent to participate. The names and personal information of subjects were closely protected throughout the study.

Statistical Analysis

Descriptive analyses, independent sample *t*-tests, chi-square tests, and regression analyses were performed using SPSS 22.0 software (IBM SPSS Corp.; Armonk, NY, USA). Sociodemographic variables—count data such as gender, ethnicity, and household subjective economic status—were described using frequency counts and component ratios; measured data such as age were described using mean ± SD. Independent sample *t*-tests and chi-square tests were used to compare differences in antisocial behavior and ASPD across sociodemographic characteristics. Subsequently, binary logistic regression analyses were used to examine the independent influences of antisocial behavior and positive screening for ASPD. A *P*-value <.05 was assumed to be statistically significant.

Results

Descriptive Statistics of Participants

In this survey, a total of 3006 questionnaires were distributed, 2910 were recovered, and 2475 were valid, giving an effective recovery rate of 85.05%. Among them, 897 were male (36.2%) and 1578 female (63.8%). The age range was from 15 to 24 years old, with an average age of 17.04 ± 1.32 years. Of the 2475 young people, 1794 participants were <18 years of age and 681 were ≥18 years of age (Table 1). The positive rate of antisocial behavior screening of youth in ethnic minority areas in China was 5.4% (95% confidence interval (CI): 4.3-6.4), and the positive rate of ASPD screening was 4.4% (95% CI: 2.9-6.0).

Univariate Analysis of Positive Screening for Antisocial Behavior and Antisocial Personality Disorder

Univariate chi-square tests showed that gender, grade, ethnicity, single-child status, maternal education level, and subjective family economic status were associated with antisocial behavior; age, gender, and paternal education levels were associated with positive screening for ASPD (Table 2).

Multivariate Analysis of Positive Screening for Antisocial Behavior and Antisocial Personality Disorder

Binary logistic regression analysis was performed with antisocial behavior and ASPD as dependent variables and variables with $P < .10$ in univariate analysis as independent variables, respectively. Results showed that male (odds ratio [OR] = 4.836, 95% CI: 2.992-7.816), single-child (OR = 1.927, 95% CI: 1.170-3.173) and maternal education level at senior high school and above (OR = 1.908, 95% CI: 1.019-3.572) were risk factors for antisocial behavior, while senior high school grade (OR = 0.408, 95% CI: 0.223-0.745) and medium/affluence subjective family economic status (OR = 0.588, 95% CI: 0.355-0.974) were protective factors for antisocial behavior (Table 3). Results showed that male (OR = 4.600, 95% CI: 2.038-10.381) and paternal education level at senior high school and above (OR = 3.498, 95% CI: 1.367-8.952) were risk factors for positive ASPD screening (Table 4).

Discussion

This study presents the current situation and influencing factors of antisocial behavior and ASPD among youth in Yunnan, China. The positive rate of antisocial behavior screening among youth in this study was 5.4%, which is consistent with the incidence of 2-10% reported in previous studies.[27,28] Although antisocial behavior is only 1 symptom and characteristic of a variety of mental disorders, the diagnosis of antisocial behavior is necessarily cautious as the personality of children and adolescents is still under development, and diagnosis of personality disorders may cause stigma and psychological harm to them.[28] This study provides some theoretical basis for the development of personality, but no label can be placed on those who screened positive, as this study is only a screening program. The ASPD screening positive rate of youth was 4.4%, which was lower than the positive screening rate of Chinese high school students (11.2 %).[19] These differences may be caused by different sample sources. The population in this study is teenagers living in ethnic minority areas in China, so their developmental environment

Table 1. Socio-demographic Characteristics of Study Participants [mean ± SD; n (%)]

Variables	Category	Total (n = 2,475)	<18 (n = 1794)	≥18 (n = 681)
Age		17.04 ± 1.32	16.39 ± 0.70	18.75 ± 1.00
Gender	Female	1,578 (63.8)	1,112 (62.0)	466 (68.4)
	Male	897 (36.2)	682 (38.0)	215 (31.6)
Grade	Junior high school	184 (7.2)	148 (8.2)	36 (5.3)
	Senior high school	2,021 (81.7)	1,639 (91.4)	382 (56.1)
	University/college	270 (10.9)	7 (0.4)	263 (38.6)
Ethnicity	Han	917 (37.1)	652 (36.3)	265 (38.9)
	Bai	553 (22.3)	470 (26.2)	83 (12.2)
	Yi	497 (20.1)	408 (22.7)	89 (13.1)
	Lisu	332 (13.4)	201 (11.2)	131 (19.2)
	Others	176 (7.1)	63 (3.5)	113 (16.6)
Single-child status	No	2,104 (85.0)	1,489 (83.0)	615 (90.3)
	Yes	371 (15.0)	305 (17.0)	66 (9.7)
Family structure	Raised by parents	2,165 (87.5)	1,555 (86.7)	610 (89.6)
	Other (single-parent/foster/remarried)	310 (12.5)	239 (13.3)	71 (10.4)
Paternal educational level	Primary school and below	892 (36.0)	599 (33.4)	293 (43.0)
	Junior middle school	1,262 (51.0)	964 (53.7)	298 (43.8)
	Senior high school and above	321 (13.0)	231 (12.9)	90 (13.2)
Maternal educational level	Primary school and below	1,189 (48.0)	756 (42.1)	433 (63.6)
	Junior middle school	1,051 (42.5)	853 (47.5)	198 (29.1)
	Senior high school and above	235 (9.5)	185 (10.3)	50 (7.3)
Subjective family economic status	Poor	425 (17.2)	286 (15.9)	139 (20.4)
	Medium/Affluence	2,050 (82.8)	1,508 (84.1)	542 (79.6)
Residence	Rural	2,327 (94.0)	1,685 (93.9)	642 (94.3)
	Urban	148 (6.0)	109 (6.1)	39 (5.7)

SD, Standard Deviation.

Table 2. Univariate Analysis of Positive Screening for Antisocial Behavior and Antisocial Personality Disorder [Antisocial Behavior: Age <18, ASPD: Age ≥18; n (%)]

		Antisocial Behavior (n = 1794)				Antisocial Personality Disorder (n = 681)			
Variables	**Category**	**Positive**	**Negative**	t/χ^2	***P***	**Positive**	**Negative**	t/χ^2	***P***
Age		16.31 ± 0.80	16.39 ± 0.69	1.067	.286	18.40 ± 0.77	18.77 ± 1.01	1.983	.048
Gender	Female	24 (2.2)	1,088 (97.8)	58.877	.000	9 (1.9)	457 (98.1)	21.452	.000
	Male	72 (10.6)	610 (89.4)			21 (9.8)	194 (90.2)		
Grade	Junior high school	20 (13.5)	128 (86.5)	18.528	.000	1 (2.8)	35 (97.2)	0.491	.773
	Senior high school	75 (4.6)	1,564 (95.4)			19 (5.0)	363 (95.0)		
	University/college	1 (14.3)	6 (85.7)			10 (3.8)	253 (96.2)		
Ethnic	Han	26 (4.0)	626 (96.0)	10.279	.032	11 (4.2)	254 (95.8)	6.270	.166
	Bai	39 (8.3)	431 (91.7)			2 (2.4)	81 (97.6)		
	Yi	18 (4.4)	390 (95.6)			1 (1.1)	88 (98.9)		
	Lisu	10 (5.0)	191 (95.0)			7 (5.3)	124 (94.7)		
	Others	3 (4.8)	60 (95.2)			9 (8.0)	104 (92.0)		
Single-child status	No	69 (4.6)	1,420 (95.4)	8.894	.003	27 (4.4)	588 (95.6)	0.000	1.000
	Yes	27 (8.9)	278 (91.1)			3 (4.5)	63 (95.5)		
Family structure	Raised by parents	78 (5.0)	1,477 (95.0)	2.588	.108	27 (4.4)	583 (95.6)	0.006	1.000
	Others (single-parent/foster/remarried)	18 (7.5)	221 (92.5)			3 (4.2)	68 (95.8)		
Paternal educational level	Primary school and below	25 (4.2)	574 (95.8)	3.599	.165	9 (3.1)	284 (96.9)	11.569	.002
	Junior middle school	54 (5.6)	910 (94.4)			10 (3.4)	288 (96.6)		
	Senior high school and above	17 (7.4)	214 (92.6)			11 (12.2)	79 (87.8)		
Maternal educational level	Primary school and below	35 (4.6)	721 (95.4)	12.164	.002	16 (3.7)	417 (96.3)	4.005	.132
	Junior middle school	41 (4.8)	812 (95.2)			9 (4.5)	189 (95.5)		
	Senior high school and above	20 (10.8)	186 (89.2)			5 (10.0)	45 (90.0)		
Subjective family economic status	Poor	24 (8.4)	262 (91.6)	6.210	.013	8 (5.8)	131 (94.2)	0.756	.486
	Medium/Affluence	72 (4.8)	1,436 (95.2)			22 (4.1)	520 (95.9)		
Residence	Rural	87 (5.2)	1,598 (94.8)	1.935	.164	29 (4.5)	613 (95.5)	0.031	.861
	Urban	9 (8.3)	100 (91.7)			1 (2.6)	38 (97.4)		

and personality differences may be quite different from those in other regions. This may also be related to the different scores of positive demarcations used in the study. At present, for Chinese youth, there is no uniform positive demarcation score for PDQ4+ ASPD. In this study, a score of 5 is used as the positive demarcation score for ASPD screening because the specificity of that score is as high as

Table 3. Binary Logistic Regression Analysis of Positive Screening for Antisocial Behavior (Age <18, n = 1794)

		Antisocial Behavior			
Variables	**Category**	β	**OR**	**95% CI**	***P***
Gender	Female	Ref			
	Male	1.576	4.836	2.992-7.816	.000
Grade	Junior high school	Ref.			
	Senior high school	–0.897	0.408	0.223-0.745	.004
	University/college	0.614	1.848	0.162-21.024	.621
Ethnic	Han	Ref			
	Bai	0.560	1.750	0.987-3.104	.056
	Yi	0.021	1.022	0.542-1.926	.947
	Lisu	0.112	1.119	0.512-2.444	.779
	Others	0.030	1.031	0.273-3.895	.964
Single-child status	No	Ref.			
	Yes	0.656	1.927	1.170–3.173	.010
Maternal educational level	Primary school and below	Ref.			
	Junior middle school	–0.054	0.947	0.580-1.546	.828
	Senior high school and above	0.646	1.908	1.019-3.572	.043
Subjective family economic status	Poor	Ref.			
	Medium/Affluence	–0.532	0.588	0.355-0.974	.039

OR, odds ratios; CI, confidence interval; Ref, reference.

Table 4. Binary Logistic Regression Analysis of Positive Screening for Antisocial Personality Disorder (Age ≥18, n = 681)

		Antisocial Personality Disorder			
Variables	**Category**	*β*	**OR**	**95% CI**	***P***
Age		–0.342	0.710	0.417-1.210	.208
Gender	Female	Ref			
	Male	1.526	4.600	2.038-10.381	.000
Paternal educational level	Primary school and below	Ref			
	Junior middle school	0.059	1.061	0.419-2.689	.900
	Senior high school and above	1.252	3.498	1.367-8.952	.009

OR, odds ratios; CI, confidence interval; Ref, reference.

0.96. It can effectively reduce the false positive rate caused by the low positive demarcation score.[29]

This study found that gender, grade level, only child status, maternal literacy, and subjective family economic status were independent influences on the positive rate of youth antisocial behavior screening in ethnic minority areas of China; further, gender and paternal literacy were independent influences on the positive rate of youth ASPD screening in ethnic minority areas of China. The analyses suggest that males are more prone to antisocial behavior compared to females. In school, males face a variety of pressures such as academics, interpersonal relationships, self-identity, and a poor school culture characterized by violence and bullying, which may cause the development of negative emotions such as anxiety and depression, thus increasing the risk of antisocial behavior.[30] Males are also typically more impulsive, irritable, and have difficulty controlling their emotions, which makes them more likely to engage in violent or antisocial behaviors in the face of conflict.[31] Similar to the effect of gender on antisocial behavior, the risk of ASPD in males is typically 3-5 times greater than in females.[11,32] Being an only child is an independent risk factor for the emergence of antisocial behavior. Tan and colleagues[33] screened for personality disorders among all new employees in 12 Chinese machinery factories and showed that employees who were an only child scored significantly higher than those who were not in the subtype of antisocial personality disorder. This is generally consistent with the results of the current study. It is possibly because single children are subject to care from the whole family and are easily overprotected by their parents. However, the lack of parental care and affection or parental overprotection from an early age are major social factors in the formation and development of antisocial behaviors and antisocial personalities.[34] Additionally, the cost of living for a single child as a proportion of family income and interpersonal relationships within the family should also be taken into account.[19] High school grade is a protective factor for the occurrence of antisocial behavior compared to the grade level of middle school. Previous research has also shown that low educational attainment is a high-risk correlate for the occurrence of antisocial behavior[27] and adolescents who engage in antisocial behavior typically exhibit a low level of education.[16] Are these 2 mutually causal? Or is there some other relationship that deserves further study? The current study found that parental literacy was significantly associated with adolescents screening positive for antisocial behavior. Compared to youth whose maternal education level was elementary school and below, children whose maternal literacy was high school and above had a higher rate of positive antisocial behavior screening; compared to youth whose paternal education level was elementary school and below, children whose paternal literacy was high school and above had a higher rate of positive ASPD screening. This is similar to previous research that found higher scores on the psychoticism score in groups with college-educated parents.[35] It is widely believed that highly educated parents have better social resources, and they may be more aware of the impact of their own behavior on their children, thus adopting a more scientific and rational approach to education.[36] However, they may also have stricter standards and requirements for their children, and this excessive expectation and discipline may affect the parent–child relationship and even trigger adolescent resistance and the emergence of rebelliousness, antisocial behavior and ASPD.[35,37] A questionnaire was designed to elucidate the subjective household economic situation to represent the income level of the family rather than specific values. This approach was taken as it is very impolite to openly talk about or query other people's economic situation in Chinese culture, and most children don't know the specific income of their own families. By using the subjective household economic situation to represent the income level of the family, the economic situation can be more accurately reflected. The present study showed that having a moderate or wealthy family economic status was a protective factor for screening positive for antisocial behavior compared to participants whose subjective economic status was poor. Consistent with previous findings, low family income is a social risk factor for antisocial behavior.[27] For youths who have a great inner desire to achieve economic independence but are currently unable to improve the economic level of their families, the gap between this idea and reality leads to great psychological pressure, which, if not channeled and intervened in a timely manner, may cause the development of an antisocial psychology.[19,38] Additionally, families with low household incomes are often unable to provide their children with rich and diverse learning resources and also have difficulty accessing timely mental health services and care, thus increasing the risk of antisocial behavior.[39]

Limitations

First, this study is a cross-sectional study that does not allow for causal inference, so further longitudinal studies are needed to address the causal issues. Second, no formal diagnoses were made, only a PDQ-4+ questionnaire was used to screen antisocial behavior and ASPD. Future research should carry out structured clinical interviews to improve the accuracy of the questionnaire scores. Third, only demographic characteristics were included in this study. It is recommended that future studies add biological, psychological, and sociological influences of relevance. This is due to antisocial behavior and ASPD being influenced by multiple factors. Finally, this study recruited participants in only 1 province, included a limited number of ethnicities and samples, and had an uneven distribution of individual variables.

Further large-sample and multicenter studies are needed to examine the association between ethnicity and antisocial behavior and ASPD.

Conclusion

This study found that the positive rates of antisocial behavior and ASPD screening among youth in Yunnan, China, were 5.4% and 4.4%, respectively. Several factors related to antisocial behavior and ASPD were put forward. Male gender, single-child status, maternal education level at senior high school and these were the risk factors for antisocial behavior, while senior high school and medium subjective family economic status were the protective factors. Additionally, paternal education level at university or above was a risk factor of positive ASPD screening. In contrast, ethnicity did not show significant differences in antisocial behavior and ASPD. With a comprehensive understanding of these factors, preventive and interventional measures can be formulated to provide students with the necessary support and assistance, create a healthy environment for their growth, enhance their mental health, and promote personality development.

Availability of Data and Materials: *The data and materials that support the findings of this study are available from the corresponding author upon reasonable request.*

Preprint: *A previous version of this manuscript was published as a preprint.*[40]

Ethics Committee Approval: *This study was approved by the Ethics Committee of Dali University (Approval No: MECDU-20211-1, Date: November 2, 2021).*

Informed Consent: *Informed consent was obtained from all participants who agreed to take part in the study.*

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