

INVESTIGATION ON THE AGGRESSION LEVEL OF PRIMARY SCHOOL STUDENTS

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Abstract: Objective This study aimed to investigate the aggression level of primary school students, explore the differences in aggression among different groups of students, and analyze the influencing factors. Method A total of 1,281 primary school students from 12 schools in 5 provinces were surveyed using the Buss-Perry Aggression Scale. Results The results showed that the overall detection rate of aggression among primary school students was 49.80%, and the total average score was 2.51, indicating a moderately high level of aggression. There were significant differences in aggression among students of different genders, grades, and family types. Conclusions These findings suggest that aggression is prevalent among primary school students and should be taken seriously in mental health education.

Keywords: Primary school students; Aggression; Demographic variables; Influencing factors

1 INTRODUCTION

In recent years, with the increasing prevalence of campus violence among younger children, aggression, a personality trait that emerges early in life and persists throughout, has received extensive attention from society[1]. For primary school students, who are in the initial stage of various psychological developments, aggression during childhood not only negatively impacts their current physical and mental health but also increases the risk of criminal behavior in adulthood[2].

In response to this issue, the Chinese department has issued several policies emphasizing the importance of assessing and preventing psychological problems in the early stages. For example, the "Opinions on Strengthening the Construction of the Safety Risk Prevention and Control System for Primary and Secondary Schools and Kindergartens" issued by the General Office of the State Council in 2017 clearly pointed out the need to predict and monitor adolescent delinquency. Such policies underscore the significance of early intervention in dealing with students' psychological problems.

Given this context, this study aims to address the following questions: What is the current level of aggression among primary school students? Are there differences in aggression levels among students of different genders, grades, birth orders, family types, and from different regions? What are the influencing factors? Answering these questions can help us better understand the aggression situation of primary school students and provide a basis for formulating targeted intervention measures.

2 SUBJECTS AND METHODS

2.1 Subjects

A total of 1,300 primary school students (aged 6 - 12 years) from 12 schools in Shandong, Hainan, Xinjiang, Shaanxi, and Hubei provinces were selected as the research subjects using the random cluster sampling method. After excluding invalid questionnaires, 1,281 valid questionnaires were obtained, with an effective rate of 98.54%. The distribution of demographic variables of the subjects is shown in Table 1.

Table 1 Distribution of demographic variables and descriptive statistical values of subjects (N=1281)

Variable category	option	Number (n)	Percentage (%)	M±SD
Gender	Male	695	54.3%	1.46±0.49
	Female	586	45.7%	
Grades	1	18	1.40%	3.50±1.14
	2	249	19.4%	
	3	373	29.1%	
	4	429	33.5%	
	5	134	10.5%	
	6	78	6.10%	
Family structure	Single	72	5.60%	2.86±0.48
	Regrouping	30	2.40%	
Birth order	Integrity	1179	92.0%	2.30±1.14
	Eldest	471	36.8%	
	Second	170	13.3%	

	Youngest	422	32.9%	
	Only child	218	17.0%	
Source of students	Rural	607	47.4%	1.59±0.41
	Urban	674	52.6%	

2.2 Methods

In this study, the Buss - Perry Aggression Scale revised by Liu Junsheng et al[3] was used to measure the aggression level of the research subjects. The revised scale consists of 20 questions, including 6 questions on physical aggression, 4 on hostility, 5 on anger, and 5 on substitute aggression. The scale uses a five - point scoring system, with "1" indicating that the content of the question is very different from one's own situation and "5" indicating that it is very similar. The theoretical median of the scale is 2.5 points, and the higher the total score, the more prominent the subject's aggression. In this study, the Cronbach coefficient of the full scale was 0.88, and the Cronbach α coefficients of the factors of anger, substitute aggression, physical aggression, and hostility were 0.74, 0.70, 0.70, and 0.69, respectively, indicating that the scale can be directly used to assess the aggression of primary school students.

2.3 Statistical Processing

2.3.1 Statistical Methods

SPSS26.0 software was used for data analysis. Mean and variance ($M \pm SD$) in descriptive tests were calculated to obtain the total aggression and scores of each dimension of primary school students. Independent - sample t - test was used to analyze the differences in aggression levels among students of different genders and from different regions. One - way ANOVA was used to analyze the differences in aggression levels among students with different demographic backgrounds such as grades, family types, and birth orders.

2.3.2 Implementation Procedures

The assessment was carried out in the classroom on a class - by - class basis. Before the test, the research purpose was explained in detail to the subjects, and an informed consent form was obtained from the subjects and their guardians. During the test, the filling order and precautions were explained according to the unified instructions. For lower - grade primary school students, the examiner explained the meaning of the questions by combining common examples in students' lives. To avoid interference and imitation among subjects, they were required to sit at a distance where they could not see others' questionnaires. The examiner recorded the subjects' behaviors and language during the preparation and creation process. After the test, the questionnaires were immediately collected on - site, and the examiner further verified the demographic information of the subjects based on the materials provided by the class teacher and subject teachers.

3 RESULTS

3.1 Overall Aggression Level and Descriptive Statistics of Each Dimension

The total aggression level and scores of each dimension of the 1,281 valid data in this study are shown in Table 2.

Table 2 Total Aggression Level and Scores of Each Dimension ($N=1,281$)

Variable	M	SD
Physical Aggression	2.53	1.03
Hostility	2.80	1.09
Anger	2.44	1.04
Substitute Aggression	2.32	0.90
Total Aggression	2.51	0.85

The average scores of physical aggression, hostility, anger, substitute aggression, and total aggression of the surveyed subjects were 2.53, 2.80, 2.44, 2.32, and 2.51, respectively. The average score of total aggression was 2.51, which was higher than the theoretical median of 2.5, indicating that the overall aggression of primary school students was at a moderately high level. Further analysis showed that 643 students had an average aggression score lower than 2.5, accounting for 50.20%, while 638 students had an average score exceeding 2.5, accounting for 49.80%, indicating the universality and extensiveness of aggression among primary school students. By comparing the scores of each dimension of aggression, it was found that the score of hostility (2.8 points) was the highest, much higher than the theoretical median of the hostility dimension of 2 points, indicating that primary school students mainly expressed aggression through implicit hostile attitudes. Followed by physical aggression (2.53 points), while the scores of

substitute aggression and anger were lower than the total average score of aggression, indicating that primary school students mainly expressed aggression through direct external physical aggression and implicit hostile attitudes.

3.2 Differences in Aggression among Students with Different Demographic Variables

3.2.1 Gender differences

The scores of 1,281 subjects in aggression and its various dimensions by gender are shown in Table 3. There were significant differences ($p < 0.001$) in the scores of physical aggression, hostility, anger, substitute aggression, and total aggression between male and female students. Specifically, male students had higher scores.

Table 3 Gender Differences in Aggression and Its Dimensions ($N=1,281$)

Variable	Male	Female	t	p
Physical Aggression	2.77±1.06	2.24±0.92	9.70	0.000
Hostility	2.95±1.08	2.61±1.07	5.71	0.000
Anger	2.58±1.02	2.27±1.04	5.48	0.001
Substitute Aggression	2.50±0.92	2.12±0.83	7.82	0.000
Total Aggression	2.69±0.84	2.29±0.81	8.77	0.000

3.2.2 Grade Differences

The scores of 1,281 subjects in each dimension of aggression and the total score by grade are shown in Table 4. There were significant differences ($p < 0.001$) in the total scores of aggression and the scores of each dimension among students of different grades. Post - hoc tests found that the total score of aggression of sixth - grade students was higher than that of other grades, indicating that aggression was more likely to occur in upper - grade primary school students.

Table 4 Grade Differences in Aggression and Its Dimensions ($N=1,281$)

Variable	1 st grade	2 nd grade	3 rd grade	4 th grade	5 th grade	6 th grade	F	p
Physical	3.05±0.88	2.37±0.89	2.60±1.13	2.38±1.02	2.45±0.98	3.04±0.91	8.27	0.000
Hostility	2.51±1.04	2.52±1.02	2.98±1.05	2.75±1.13	2.87±1.08	2.94±0.95	10.69	0.000
Anger	2.18±0.49	2.24±0.88	2.85±1.00	2.17±0.99	2.40±0.97	2.78±1.42	6.86	0.009
Substitute	2.15±0.41	2.13±0.73	2.16±0.81	2.13±0.90	2.79±0.68	2.81±0.73	9.64	0.000
Total Score	2.28±0.72	2.34±0.64	2.35±0.76	2.28±0.75	2.40±0.70	2.94±0.72	11.55	0.000

3.2.3 Birth order differences

The scores of 1,281 subjects in each dimension of aggression and the total score by birth order are shown in Table 5. There were no significant differences ($p > 0.05$) in the aggression of primary school students with different birth orders.

Table 5 Birth Order Differences in Aggression and Its Dimensions ($N=1,281$)

Variable	Eldest	Second born	Youngest	Only Child	F	p
Physical Aggression	2.47±1.01	2.49±0.95	2.61±1.11	2.53±1.01	1.50	0.21
Hostility	2.73±1.09	2.79±1.02	2.86±1.11	2.83±1.11	1.11	0.35
Anger	2.40±1.07	2.38±0.92	2.53±1.04	2.39±1.04	1.57	0.20
Substitute Aggression	2.26±0.86	2.31±0.81	2.38±0.92	2.37±0.99	1.61	0.19

Variable	Eldest	Second born	-	Youngest	Only Child	F	p
Total Aggression	2.45±0.83	2.48±0.76		2.58±0.87	2.51±0.89	1.85	0.14

3.2.4 Regional differences

The scores of 1,281 subjects in each dimension of aggression and the total score by regional source are shown in Table 6. There were no significant differences ($p > 0.05$) in the aggression of rural and urban school students. However, the total score of aggression of urban students was higher than that of rural students.

Table 6 Regional Differences in Aggression and Its Dimensions ($N=1,281$)

Variable	Urban	Rural	t	p
Physical Aggression	2.39±0.92	2.35±0.89	1.28	0.28
Hostility	2.73±1.03	2.71±1.01	0.46	0.71
Anger	2.32±1.01	2.16±0.96	1.01	0.39
Substitute Aggression	2.23±0.87	2.13±0.96	1.07	0.36
Total Aggression	2.99±0.76	2.81±0.76	1.22	0.30

3.2.5 Family type differences

The scores of 1,281 subjects in each dimension of aggression and the total score by family type are shown in Table 7. There were differences in aggression among different family structures ($p < 0.001$). Post - hoc test results showed that the total scores of aggression and the scores of each dimension of primary school students from divorced and re - combined families were significantly higher than those of students from intact families.

Table 7 Family Type Differences in Aggression and Its Dimensions ($N=1,281$)

Variable	Divorced	Re - combined	Intact	F	p
Physical Aggression	3.05±0.96	3.16±2.19	2.48±0.98	16.27	0.000
Hostility	3.30±0.95	3.01±1.14	2.76±1.09	8.88	0.000
Anger	3.20±0.93	2.74±1.05	2.38±1.03	22.84	0.000
Substitute Aggression	2.94±0.89	2.68±0.98	2.28±0.88	21.60	0.000
Total Aggression	3.11±0.79	2.91±1.13	2.46±0.83	23.87	0.000

4 DISCUSSION

4.1 Overall Aggression Level of Primary School Students

The results of this study show that the overall aggression level of primary school students is moderately high, which is consistent with the findings of Ma Hejing[4]. However, some studies have indicated that the number of primary school students with aggressive personality traits is very small[5]. These differences may be attributed to several factors. Firstly, different assessment tools were used. Many previous studies used methods such as parental and teacher ratings, which may be affected by social desirability and self - protection mechanisms. Parents tend to choose positive options to quantify their children's aggression, and teachers may have biased evaluations due to stereotypes. Secondly, factors such as the sample size, sample source region, and testing time of the research can also influence the results.

In terms of the specific dimensions of aggression, primary school students tend to express aggression through implicit hostile attitudes and external physical attacks. This is consistent with previous research. However, some scholars have pointed out that due to their young age and lack of strength, primary school students may mainly use verbal means to express aggression when in conflict[6]. There are also differences in the manifestation of aggression among different grades. Lower - grade students may use more physical attacks, while higher - grade students may be more inclined to use hostile means. These differences may be related to the selected assessment tools and the grade distribution of the

research subjects. In this study, the selected sample covered all grades of primary school, and lower - grade students may show more implicit hostile attitudes due to self - protection or fear of authority.

4.2 Gender Differences in Aggression

The finding that male students are more aggressive than female students in this study is consistent with previous research on the aggression level of primary school students[7-9]. There are two possible reasons for this difference. Firstly, there are gender differences in innate physiological development. Although both boys and girls start physical and mental development in primary school, boys generally develop faster, which makes them more likely to use physical means to solve conflicts when facing setbacks. In contrast, girls are physically weaker and tend to hide their anger. Secondly, social culture defines gender roles. In many cultures, men are expected to be brave and powerful, while women are expected to be gentle and reserved. As a result, men may be more inclined to use violent means to solve problems to meet these expectations. However, some studies have found that there is no gender difference in aggression. For example, Zhang Ping[10]found that the aggression levels of male and female students aged 9 - 18 were similar. This may be related to the age range of the selected subjects. As students grow older, the difference in growth rates between male and female students decreases, and girls may even be more mature than boys in junior high school.

4.3 Grade Differences in Aggression

The significant differences in aggression scores among different grades in this study are consistent with the research of Liu Jia. The higher aggression scores of upper - grade students may be related to their self - concept development. As students grow older, their self - concept develops, and they may be more likely to initiate conflicts in interpersonal communication[11]. However, some studies have found that the aggression level of fifth - grade students is the highest[12-13]. This may be because the emotional regulation ability of fifth - grade students has not been fully developed, resulting in more frequent physical attacks. By the sixth grade, students' psychological maturity may enable them to better solve conflicts through effective strategies.

4.4 Birth Order Differences in Aggression

The finding that there is no significant difference in aggression among primary school students with different birth orders in this study is consistent with the discovery of Ma Hejing. In multi - child families, the eldest child may be more tolerant and accommodating as they have younger siblings to take care of. According to the resource allocation theory, the second - born and youngest children may face limited resources, which can lead to jealousy and competition, and they may express their dissatisfaction through aggression. Regarding the difference between only - children and non - only - children, some studies have found that non - only - children have higher aggression scores[14-15], while others believe that only - children are more likely to show aggressive behavior. The inconsistent conclusions may be due to differences in the survey samples and the way of classifying birth order. In this study, non - only - children were further refined, which may have affected the results.

4.5 Regional Differences in Aggression

The result that there is no significant difference in aggression between rural and urban primary school students in this study is consistent with the research of Liu Lu. However, some researchers believe that urban students have higher aggression levels[16]. This may be because urban parents are often busy with work and have less time to accompany their children. In addition, the developed media in big cities may expose children to more violent content, which can be a source of imitation. On the other hand, some studies have found that rural students have higher aggression levels. This may be related to the low educational level of rural parents and the lack of positive role models and effective conflict - solving strategies. The difference between this study's conclusion and others may be due to the fact that the rural schools selected in this study are mostly located in the urban - rural fringe, which is different from traditional rural schools.

4.6 Family Type Differences in Aggression

The finding that primary school students from divorced and re - combined families have higher aggression levels than those from intact families is consistent with the research of Liu Lu. The lack of parental involvement in single - parent families may lead to parenting distress and dysfunctional parent - child interaction, which can increase children's aggression[17]. Some scholars also believe that the lack of material resources in single - parent families may cause children to feel deprived and lead to aggressive behavior [18]. However, Zhao Zhu found no significant difference in verbal and physical aggression between primary school students from intact and divorced families. This may be due to differences in the research tools used and the sample selection[19]. In this study, the proportion of intact families in the sample was relatively large, which may have affected the results. This reminds us to increase the sample size and balance the sample source in future research to improve the generalizability and ecological validity of the research results[20].

5 CONCLUSION

This study investigated the aggression level of 1,281 primary school students using the aggression scale and found the following results:

- (1) The overall detection rate of aggression among primary school students was 49.80%, and the total average score was 2.51, which was higher than the theoretical median of 2.50. Implicit hostile attitudes and external physical attacks were the main manifestations of aggression.
- (2) Due to innate physiological development characteristics and social cultural expectations for gender roles, there were significant differences ($p < 0.001$) in the total scores of aggression and the scores of each dimension among primary school students of different genders. Specifically, male students had higher aggression levels than female students.
- (3) Due to the imbalance and mismatch in physical and mental development, there were significant differences ($p < 0.001$) in the total scores of aggression and the scores of each dimension among primary school students of different grades. The first - grade students had higher physical aggression scores, the third - grade students had more prominent anger and hostility, and the sixth - grade students had a higher total aggression score. In other words, primary school students at the young - to - primary and primary - to - junior high school transition stages had stronger aggression.
- (4) There were no significant differences ($p > 0.05$) in the total scores of aggression and the scores of each dimension among primary school students with different birth orders, and there was no difference in aggression between only - children and non - only - children.
- (5) There were no significant differences ($p > 0.05$) in the total scores of aggression and the scores of each dimension among primary school students from different regions, indicating that there was no significant difference in the aggression levels of rural and urban primary school students.
- (6) There were significant differences ($p < 0.001$) in the aggression levels of primary school students from different family types. Specifically, the aggression of primary school students from divorced and re - combined families was generally higher than that of students from intact families.

In conclusion, aggression, as a negative and implicit personality trait, is particularly obvious in the primary school student group. Due to differences in innate physiological development, social culture, role expectations, and living environment, there are significant differences in aggression among different demographic variables. Therefore, in future clinical psychological counseling and front - line mental health education, it is necessary to use multiple assessment tools to accurately identify primary school students with aggressive tendencies in advance, strengthen the prevention and attention to primary school students' aggression, and formulate targeted educational plans and intervention measures for timely guidance and education.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

FUNDING

The research was supported by the 2024 Shaanxi Province Education Science "14th Five-Year Plan" Project (Project No.: SGH24Y1457)

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