

Guilt Characteristics of Deaf Middle School Students and Its Relationship with Prosocial Tendency

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Abstract: 275 middle school deaf students and 298 healthy hearing students were selected as subjects to investigate the guilt characteristics of middle school deaf students and their relationship with prosocial tendencies. The results showed that: (1) The gender differences of guilt and prosocial tendencies of deaf students in middle schools were significant, and the guilt and prosocial tendencies of female students were significantly higher than that of male students. (2) Guilt of middle school deaf students is significantly lower than that of healthy hearing students, while there is no significant difference in prosocial tendencies between middle school deaf students and healthy hearing students. (3) Whether hearing aids are worn or not and the wearing time have a moderating effect on the relationship between guilt and prosocial tendencies; The more deaf middle school students wear hearing aids or wear them for a long time, the more obvious the guilt prediction of prosocial tendencies is.

Keywords: Deaf Middle School Students; Guilty Pro-social Tendency

1. Asking Questions

The characteristics of deaf students' moral and psychological development have gradually attracted the attention of researchers, and some progress has been made in the fields of deaf students' moral cognitive development and prosocial behavior. In the development of moral cognition, Sam and Wright found that, 12-15 deaf students' moral judgment is in the first and second stage^[1]. Research on deaf students' cognition of moral and non-moral rules in middle schools shows that most deaf students accept the moral rules and social customs formulated by their peers, teachers or schools, but their acceptance of safety rules is much worse, and they have not yet realized that personal events are subject to personal decisions rather than authority^[2]. The development level of deaf-mute teenagers' moral judgment ability is different from that of normal hearing groups. This difference mainly comes from the difference in cognitive development and non-actual behavior difference^[3]. In terms of prosocial behavior, some studies have found that deaf children have lower prosocial behavior than healthy listeners^[4-6]. However, other studies have shown that there is no significant difference in prosocial behavior between deaf students and healthy listeners^[7].

More and more studies on moral emotions show that guilt has an important function of moral motivation. When individuals make internal, unstable and controllable attribution of failure, guilt is more likely to occur^[8]. Guilt is a kind of contempt and loathes one's own painful experience, usually accompanied by urgency, tension and regret^[9]. As an important self-awareness emotion, guilt can make individuals enter a certain state of motivation and cognition. Motivation drives them to consider other people's requirements and viewpoints, while cognition enables them to understand other people's viewpoints, i.e. increases the tendency of individuals to perform relevant behaviors. Thus, it can encourage individuals to recognize their moral responsibilities and take compensatory actions, such as apologizing to the victim or helping others other than the victim^[10]. Guilt is particularly likely to trigger prosocial behavior in highly empathetic children. Fifth graders who are prone to experiencing guilt in their teens are less likely to be detained, sentenced

and imprisoned, more likely to have safe sex, and less likely to take drugs^[11]. The study also found that there is a significant negative correlation between guilt susceptibility and juvenile delinquency^[12]. College students with high guilt susceptibility are less likely to take drugs and drink^[13]. Guilt susceptibility assessed shortly after imprisonment can significantly reverse predict recidivism and drug addiction^[14] in the first year after release. Guilty-prone subjects showed higher levels of prosocial behavior in subsequent follow-up^[15]. In addition, relevant research reveals that virtual guilt and violation guilt have different ways of acting on the motives of prosocial behavior: the former is generated against external social moral standards, and the compensation behavior caused by the former is non-sustainable and meets social requirements. However, the latter is due to the self-belief that it violates the personal moral standards, and the compensation behaviors caused by the latter are mostly spontaneous and continuous^[16].

Some studies have begun to pay attention to the moral and emotional characteristics of deaf students such as guilt. For example, interviews with 22 deaf students in grade one, grade three and grade five showed that deaf students in primary school made good moral evaluations. The characteristics of moral emotion comprehension are different from grade to grade. With the growth of age, the orientation of moral emotional reasons gradually diversified and complicated^[17]. The research on hearing-impaired children in junior high school and senior high school found that their understanding of guilt was at a low level and there was no significant difference between different grades^[18]. However, on the whole, the current research on moral emotions such as guilt mostly focuses on ordinary teenagers and pays little attention to the development characteristics of deaf students' moral emotions and their relationship with prosocial behaviors.

Therefore, this study intends to examine the guilt characteristics of deaf middle school students and the relationship between guilt and prosocial behavior from the perspectives of gender difference, grade difference and comparison with healthy listening middle school students.

2. Research Methods

2.1 Subject

Select 322 Deaf Middle School Students from Jiangsu, Shandong and Hebei Special Schools in Anhui and Guangdong as subjects, and collect 275 valid questionnaires, with an effective recovery rate of 85.40%. Among them, boys 144 people, girls 131 people; First-year 20 People, Second-year 41 People, Third-year 55 People, First-year 58 People, Second-year 69 People, Third-year 32 People. At the same time, two ordinary high schools in Jiangsu selected 320 healthy listening students as subjects, and collected 298 copies of valid questionnaires with an effective recovery rate of 93.13%. Among them, boys 143 people, girls 155 people; First-year 40 People, Second-year 44 People, Third-year 44 People, First-year 59 People, Second-year 68 People, Third-year 43 People.

2.2 Research Tool

2.2.1 Self-Awareness Emotion Test (Youth Edition)

The self-awareness emotion test (adolescent edition) (test of self-conscious affects for adolescents, TOSCA-A) was compiled by Tangney and Wagner *et al.*^[19]. The test includes 15 a description of situations (ten negative situations and five positive situations) that are easy to cause guilt and other emotions. Each situation has four to five options, each option represents different reactions that may occur in such situations, and different reactions correspond to different self-awareness emotions. This scale has six sub-scales: shame, guilt, arrogant pride, real pride, externalization and alienation. Questionnaire adopts likert and five-point scoring method, "1" indicates "completely impossible", "5" indicates "very likely". The subjects evaluated each option according to their own actual situation, and then obtained the tendentiousness of various self-awareness emotions. This study only uses this test to measure guilt. In the deaf students in this study, the internal consistency reliability of guilt emotion (Cronbach, α and coefficient) is 0.80; The result of confirmatory analysis is " $\chi^2/df = 1.65$, RMSEA=0.049, CFI=0.96, NNFI=0.95. In the healthy listening students of this study, the internal consistency reliability of guilt emotion (Cronbach, α and coefficient) is 0.73; The result of confirmatory analysis is $\chi^2/df=1.79$, RMSEA=0.054, CFI=0.91, NNFI=0.90. It can be seen that the self-awareness emotion test (adolescent version) has high reliability and validity.

2. 2. 2 Prosocial Tendency Scale (Chinese Revision)

Prosocial Tendencies Scale (PTM) was originally developed by Carlo and contains 23 items. It comprehensively examines the prosocial behavior of adolescents from six dimensions, namely openness, anonymity, altruism, compliance, emotionality and urgency. The scale uses 5 points for scoring, 1 means “ very unlike me ”, 5 means “ very like me ” and all items are positive scoring. Domestic scholar Kou Yu and others revised it in Chinese. The revised questionnaire includes 26 items with good psychological measurement indicators^[20]. In the deaf students in this study, the internal consistency reliability (Cronbach, α , coefficient) of the total questionnaire is 0.91; The result of confirmatory analysis is “ $\chi^2/df = 1.79$, RMSEA=0.073, CFI=0.92, NNFI=0.91.

2. 3 Research Program

Class-based group tests will be conducted with trained sign language teachers as the main test, and the test will be conducted after the subjects fully understand the requirements of the topic. Adopt SPSS23.0 Data Entry for Effective Data Obtained in Chinese Version, T, F Inspection, Correlation Analysis and Regression Analysis. Adopt Lisrel 8.70 Perform confirmatory factor analysis.

3. Research Results

3. 1 General Characteristics of Guilt and Prosocial Tendencies of Deaf Middle School Students

The scores of guilt and prosocial tendencies of middle school students of different genders and grades are shown in the table 1. The variance analysis of sex and grade as independent variables, secondary school deaf students guilt and prosocial tendency scores as dependent variables shows that secondary school deaf students guilt ($F(1, 263)=5.20$, $p<0.05$) and pro-social tendencies ($F(1,263)=6.93$, $p<0.01$) has significant gender differences, and female students' guilt and prosocial tendencies are significantly higher than those of male students. Grade difference ($f(5, 263)=0.92$, $p>0.05$; $F(5,263)=0.45$, $p>0.05$) and the interaction between gender and grade ($f(5, 263)=0.46$, $p>0.05$; $F(5, 263)=0.92$, $p>0.05$) is not significant.

A comparative analysis of deaf students and healthy hearing students found that the guilt score of deaf students was significantly lower than that of healthy hearing students ($t = 7.44$, $p<0.01$, but there is no significant difference in prosocial tendencies between deaf students and healthy hearing students ($t = -0.86$, $p>0.05$).

Table 1 Comparison of guilt and prosocial tendency scores of deaf students of different genders and grades

		guilt	Prosocial tendency
gender	male (M \pm SD)	50.87 \pm 7.99	18.54 \pm 3.40
	female (M \pm SD)	54.33 \pm 8.36	19.52 \pm 3.93
	F _{gender}	5.20*	6.93**
grade	junior Grade one (M \pm SD)	50.50 \pm 9.25	18.27 \pm 3.94
	junior Grade two (M \pm SD)	52.35 \pm 8.93	19.03 \pm 3.24
	junior Grade Three (M \pm SD)	53.64 \pm 7.69	18.81 \pm 3.62
	Senior Grade One (M \pm SD)	51.89 \pm 8.08	19.43 \pm 3.16
	Senior Grade Two (M \pm SD)	53.88 \pm 8.66	19.32 \pm 4.01
	Senior Grade Three (M \pm SD)	50.29 \pm 7.52	18.33 \pm 4.38
	F _{grade}	0.92	0.45
gender \times grade	F _{gender \times grade}	0.46	0.92

Note : * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (The same below)

3. 2 Relationship between Guilt and Prosocial Tendency of Deaf Middle School Students

Correlation analysis shows that the scores of guilt and prosocial tendencies of deaf middle school students ($r = 0.43$, $p < 0.01$), Anonymous Prosocial Tendency ($R = 0.39$, $p < 0.01$), Altruistic Prosocial Tendency ($R = 0.31$, $p < 0.01$), Compliance Prosocial Tendency ($R = 0.40$, $p < 0.01$), Emotional Prosocial Tendency ($R = 0.33$, $p < 0.01$) and emergency prosocial tendencies ($r = 0.44$, $p < 0.01$) have significant positive correlation.

In order to further investigate the relationship between guilt and prosocial tendencies of deaf students in secondary schools, the guilt scores of the subjects were first processed centrally, and then the centering prosocial tendency scores were used as dependent variables. Whether the hearing aid device was worn with virtual codes (1= worn, 0= not worn), the centering guilt scores and the product of the two were used as independent variables for hierarchical regression analysis to explore whether wearing the hearing aid device has a moderating effect between guilt and prosocial tendencies. From the table 2, it can be seen that after sex discrimination is controlled, wearing hearing aids or not plays a significant role in regulating guilt and prosocial tendencies ($\beta = 0.23$, $p < 0.05$). Through simple slope analysis, it is found that the guilt of deaf middle school students who do not wear hearing aids predicts prosocial tendencies ($\beta = 0.26$, $p < 0.05$) is lower than that of middle school deaf students wearing hearing aids ($\beta = 0.48$, $p < 0.01$). That is to say, for the subjects who did not wear hearing aids, the increase of pro-social tendency caused by the increase of guilt level was slower; However, for the subjects wearing hearing aids, the pro-social tendency caused by the improvement of guilt level increased faster. That is, the guilt of deaf middle school students wearing hearing aids can significantly predict their prosocial tendencies compared to deaf middle school students without hearing aids (**Figure 1**).

The analysis of the adjustment function between guilt and prosocial tendencies of the time of wearing hearing aids also shows that the time of wearing hearing aids is the adjustment variable between guilt and prosocial tendencies of deaf middle school students after controlling sex differences ($\beta = 0.25$, $p < 0.05$ (Table 2).) Through simple slope analysis, it is found that the standard regression coefficients for guilt prediction of subjects wearing hearing aids 1 years and below, 1 years to 10 years, 10 years and above are 0.31($p < 0.01$), 0.46($p < 0.01$) and 0.51($p < 0.01$). For subjects wearing hearing aids 1 years and below, the increase of pro-social tendency caused by the increase of guilt level is the slowest. For the subjects wearing hearing aids 1 to 10 years, the increase of prosocial tendency caused by the increase of guilt level is in the middle. For those who wear hearing aids 10 for more than years, the increase in pro-social tendency caused by the increase in guilt level is the fastest. It can be seen from this that the longer hearing aids are worn by deaf middle school students, the more obvious their guilt prediction of prosocial tendencies is (**Figure 2**).

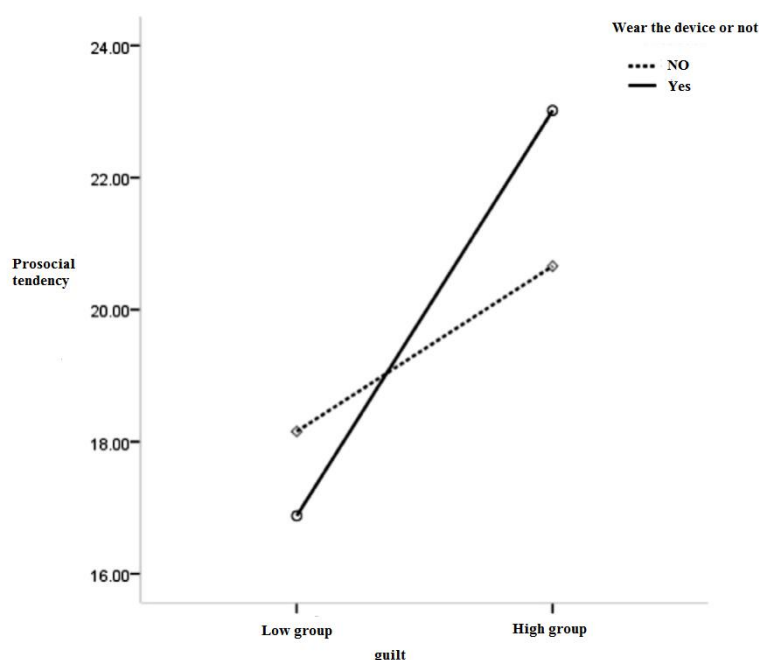


Figure 1 Moderating Effect of Wearing Hearing Aids or Not on Guilt and Prosocial Tendencies

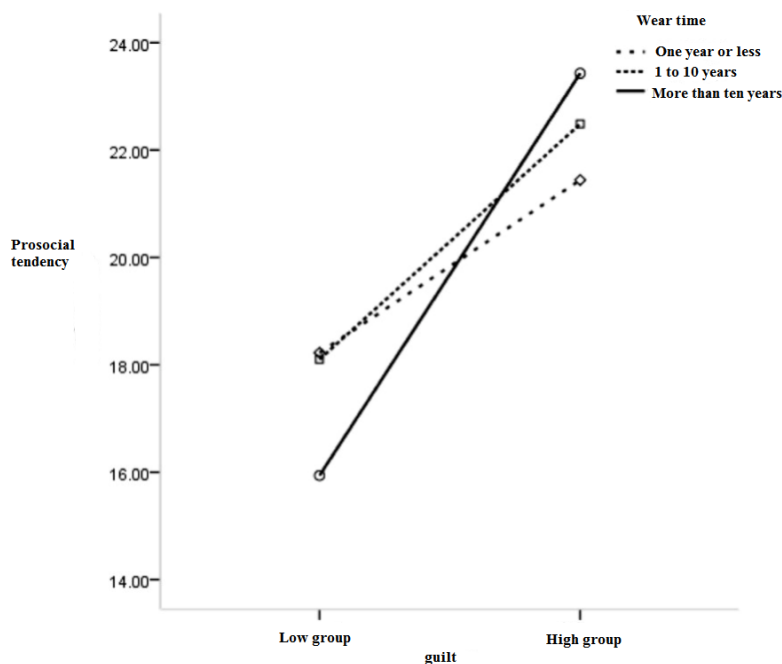


Figure 2 Moderating Effect of Time Wearing Hearing Aids on Guilt and Prosocial Tendencies

Table 2 Hierarchical regression analysis of pro-social tendency on the wearing of hearing AIDS and guilt on the wearing time of hearing AIDS and guilt

	model 1	model 2	model 3	model 1	model 2	model 3
gender	-.12*	-.05	-.04	gender	-.13*	-.05
Wear or not	.05	.01	.01	Wear time	.03	-.06
guilt		.42***	.23*	guilt		.43***
Wear or not * guilt			.23*	Wear time * guilt		.25*
ΔR^2	.01	.16	.01	ΔR^2	.01	.17
ΔF	2.73	20.44***	16.88***	ΔF	2.51	20.82***

4. Discussion

4.1 General Characteristics of Guilt and Prosocial Tendencies of Deaf Middle School Students

This study reveals the gender differences in guilt and prosocial tendencies of deaf middle school students. In terms of guilt, the scores of female deaf students in secondary schools are significantly higher than those of male deaf students in secondary schools. The research on the gender difference of guilt feelings of ordinary middle school students shows that the guilt tendency of girls is higher than that of boys^[21-24]. That is to say, deaf middle school students and ordinary middle school students have the same gender difference in guilt. It may be due to the comprehensive influence of cultural tradition, macro and micro social environment and other factors, girls are more compassionate and amiable in social interaction activities, and are more likely to be moved by others than boys^[25]. Jaffee and Hyde also believe that although there is no significant difference in moral beliefs between men and women, in practice, women are more inclined to consider the needs and feelings of others^[26]. In terms of prosocial tendencies, the scores of female students' prosocial tendencies are also significantly higher than those of male students, which is consistent with the existing researches on prosocial behaviors of ordinary teenagers^[27-28]. Further analysis of the specific prosocial tendencies of deaf male and female students found that female students' compliance, Anonymity and emergency prosocial tendencies were significantly higher than that of male students*. Studies have shown that women show more prosocial behaviors related to communication and relationships, while men show more prosocial behaviors related to heredity and strength^[29]. Since the scale used in this study mostly involves prosocial tendencies related to communication and relationships, and it is difficult

to detect prosocial behaviors related to heredity and strength, the gender differences in prosocial tendencies found in this study may be related to research tools.

Through comparison with the healthy hearing students, it is found that the guilt scores of deaf middle school students are significantly lower than those of the healthy hearing students. The reason may be that the cognitive level of deaf students in middle schools is lower than that of healthy listening students. In addition, the living and learning environment of deaf students in middle schools is not as rich as that of healthy listening students. The development of abstract thinking is limited to a certain extent, and moral development may be relatively slow. Therefore, the development of guilt emotion is restricted to a certain extent^[30]. However, this study did not find any significant difference in prosocial tendency between deaf and hearing students in middle school, which supported Huber and Kipman's conclusion^[31]. Although there are some differences in moral cognitive development and emotional development between deaf and hearing-impaired students in secondary schools, this does not mean that the pro-social level of deaf students is lower than that of hearing-impaired students.

4.2 Relationship between Guilt and Prosocial Tendency of Deaf Middle School Students

The research results show that there is a significant positive correlation between the guilt of deaf middle school students and their prosocial tendencies. Guilt includes empathy response to the pain of others and awareness of the causes of pain. It can enhance the prosocial tendencies of individuals from the aspects of internalization of moral values, moral self-improvement and moral motivation enhancement, thus having positive social adaptation value.

This study also found that wearing hearing aids or not and wearing time have a moderating effect on the relationship between guilt and prosocial tendencies. In summary, the longer middle school deaf students wore hearing AIDS, the greater the effect of guilt on pro-social tendencies. Compared with deaf students who do not wear hearing aids, the hearing of students who wear hearing aids can be restored to a certain extent, and the integrity and comprehension of information processing are restricted to a lower degree. Therefore, the frequency of communication with peer groups or adults increases, the quality and quantity of social interaction are greatly improved, and the views of others can be fully understood^[32]. These have promoted the development of their moral cognition and, together with a higher level of guilt experience, have jointly strengthened their pro-social tendencies. The analysis of the adjustment of wearing hearing aids and wearing time not only confirms once again the close relationship between guilt and prosocial behavior, but also shows to a certain extent the important influence of external environment on the moral development of deaf students in middle schools.

4.3 Educational Inspiration

This study has some inspiration for the moral education practice of deaf students in middle schools. On the one hand, help deaf middle school students adjust their guilt level properly. As mentioned earlier, guilt is significantly related to prosocial tendencies. However, excessive guilt may also lead to maladaptive or immoral behavior. For example, guilt is easy to cause self-denial and self-punishment when there is no chance to implement compensation behavior^[33]. Therefore, special lectures, Situational Discussion, Role Playing and Social Practice and other forms can be used to enhance the understanding of guilt feelings of deaf middle school students and cultivate their moderate guilt level. In this process, it is important to inspire deaf middle school students to realize their own failures and violations, to take appropriate responsibility for their own faults, to form and implement compensation behaviors consistent with the degree of violations, and to properly play the moral motivation function of guilt. On the other hand, providing More Interpersonal Interaction for Deaf Middle School Students. This study found that the guilt of deaf middle school students who wear hearing aids for a long time is more significantly related to prosocial tendencies. This actually reveals the important role of interpersonal interaction in the social development of deaf students. Some studies have shown that students with hearing impairment have higher ability to understand guilt feelings in the context of friends than in the context of parents^[34]. Therefore, we should actively encourage the deaf students in high schools to interact with each other, especially with their peers. And objectively analyze the problems existing in the interaction between deaf middle school students and their parents, and put forward constructive countermeasures.

5. Conclusion

(1) There are significant gender differences in guilt and prosocial tendencies of deaf students in secondary schools. The guilt and pro-social tendencies of female students are significantly higher than those of male students.

(2) The guilt of middle school deaf students was significantly lower than that of healthy hearing students, while there was no significant difference in the pro-social tendency between middle school deaf students and healthy hearing students.

(3) Whether or not the hearing aid device is worn and when it is worn depends on guilt and kinship. There is a regulatory effect in the relationship of tendency. The more deaf middle school students wear hearing aids or wear them for a long time, the more obvious guilt predicts prosocial tendencies.

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