



Measuring left-behind children's discrimination perception in China: the development of discrimination perceptions of left-behind children Scale

Wangqian Fu¹, Wenjun Tang², Lei Zhang³

¹Institute of Special Education, Faculty of Education, Beijing Normal University, Beijing, 100875, China.

²Changsha Institute of Educational Science, Changsha, 410000, China.

³Department of Ideological and Political, Beijing Health Vocational College, Beijing, 101101, China

Correspondence

Dr. Wangqian Fu,

Assistant Professor, Institute of Special Education, Faculty of Education, Beijing Normal University, Beijing, 100875, China

E-mail: tiffanyfu001@163.com

Mr. Lei Zhang

Assistant Researcher, School of Nursing, Beijing Health Vocational College, Beijing - 101101, China

E-mail: leizhang@163.com

- Received Date: 25 Oct 2022
- Accepted Date: 28 Oct 2022
- Publication Date: 02 Nov 2022

Keywords

left-behind children, children's discrimination perceptions, scale development

Copyright

© 2022 Authors. This is an open- access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Abstract

With the advancement of urbanization in China, there are millions left-behind children whose parents left home to support families, experiencing lot of discrimination. The study aims to develop a scale measuring left-behind children's discrimination perceptions (discrimination perceptions of left-behind children, DPLC) in China and investigate the discrimination perceptions of left-behind children using the DPLC scale. The data for 105 left-behind children were used to measure the reliability and analyze the items of the DPLC scale in the pre-test. The data for 402 left-behind children were used to verify the construct validity and internal consistency of the DPLC scale and investigate children's discrimination perceptions of left-behind in China. This study reports the development process of the DPLC scale and presents a valid scale for measuring discrimination perceptions of left-behind in the future.

Introduction

From the late 1980s to the early 1990s in China, a large number of rural labor force went to cities to work, which made the problem of floating population become an important social phenomenon in China's cities. In this process, a considerable part of the rural labor force brought their children to the city, thus forming a group of migrant children in the city. However, there are a few children who can migrate with their parents and receive education in the city due to the China's household registration policy, most of them are far away from their parents and study and live in the countryside. Thus, a group of left behind children come up in China. The term left behind children refers to children under 16 years old who are left in their hometown because both or one of their parents is working, doing business, or studying outside, and need to be taken care of by other relatives, friends, and teachers [1]. According to the data of the sixth national census in China, the scale of left-behind children aged 0 to 17 (defined as left-behind children when one of their parents goes out) is 69.7million, and the number of left-behind children in rural areas is 61million [2].

The disadvantaged children, including migrant children and left behind children, often face cross learning environment and unfriendly treatment of some urban people in the process of education, which makes children suffer a series of institutional and

structural discrimination [3]. Discrimination is often defined as some form of differential consideration or treatment which, among other features, entails a disadvantage for discriminates [4]. It's found left behind children often experience the perception of discrimination [5]. Shen et al. [6] point out that left behind children will feel the exclusive attitude from peers, teachers, neighbors, and communities, resulting in the perception of individual discrimination. Meanwhile, left behind children will also have the awareness when they feel that their group is excluded or treated unfairly, that is they have the perception of group discrimination.

Discrimination perception and its impact

Perception of discrimination refers to an individual's perception that he or she and the group he or she belongs to have received negative evaluation or unjust treatment from the outside world [7]. It is an individual's subjective experience, which is closely related to an individual's membership [8]. Although previous studies cannot equate discrimination perception with objective discrimination behavior, discrimination perception, as an important psychological reality variable of vulnerable groups, has attracted a large number of researchers' attention. Liu et al. [9] believe that the perception of discrimination is a subjective experience relative to objective discrimination, which refers to the different or unfair treatment

Citation: Fu W, Tang W, Zhang L. Measuring left-behind children's discrimination perception in China: the development of discrimination perceptions of left-behind children Scale. *Med Clin Sci.* 2022; 4(4):25-33.

perceived by individuals due to their group membership (such as race, household registration, etc.). Discrimination perception is better than objective discrimination behavior as a practical variable of individual's behavior and psychology [10].

Brown and Bigler [11] put forward the mechanism of discrimination perception. They proposed three factors that affect children's perception of discrimination: (1) cognitive factors, that is, children's cognitive ability to detect other people's or their own discrimination behavior. For example, if a child's emotional intelligence quotient is relatively low, it is difficult to perceive the discrimination information conveyed by other people's emotional disclosure; (2) Situational factors, i.e. the situational cues that children may refer to when classifying others' behaviors as discriminatory or non-discriminatory behaviors; (3) Individual difference factor, that is, some children are more likely than others to perceive the individual difference factor of discriminatory behavior. An individual's self-concept is mainly established through the interaction with important others. To a large extent, individuals need to rely on others' feedback evaluation to establish their self-concept. Individuals who have been discriminated against for a long time may internalize other people's prejudices into their own views, thus affecting their sense of self-worth and gradually showing a behavior consistent with other people's negative stereotypes.

According to the above point of view, the disadvantaged position of left behind children will make them in a dangerous situation, which makes them vulnerable to the situational stimulation of discrimination. Once left behind children perceive their disadvantaged position and do not have enough social support or do not feel enough social support to deal with their dangerous situation, they will experience pressure. In the face of that, left behind children will take corresponding coping methods, or resist their unfair situation, or avoid, or actively respond.

The discrimination perception of left-behind Children is closely related to their mental health [7,12-14]. Fan et al. [15] explored the relationship between family economic status and subjective well-being of left-behind children and found that perceived discrimination played a partial mediating role between family economic status, life satisfaction and positive emotions, while it played a complete mediating role between negative emotions. There is a significant negative correlation between left-behind children's perceived discrimination and various variables of happiness: the stronger the left-behind children's perceived discrimination, the worse their happiness [6]. The discrimination perceived by left-behind children has a negative impact on their physical and mental development. High levels of discrimination perception are often accompanied by negative emotions [16] and problem behaviors [17].

Measurement of left behind children's discrimination perception

Based on a large number of studies on investigate perceived discrimination, including the domestic questionnaire on the study of migrant children's perceived discrimination, more classic foreign literature on discrimination, such as Allport's theory [18], and the questionnaire on perceived discrimination, including Schmitt et al.'s [19] Legitimacy of Discrimination Questionnaire and Krahé et al.'s [20] Perceived Discrimination Questionnaire.

There are two main ways to measure the perception of individual discrimination. One is to examine the perception of

discrimination under the attribution framework [11]. According to this point of view, the perception of discrimination is related to whether a potential victim attributes others' behavior to prejudice, which suggests that the perception of discrimination can be examined by examining the individual's attribution of negative events. The other is let individuals report the degree of discrimination they feel or the degree of harm caused by discrimination [21], which is a common way for researchers at present. The later one is more frequently applied in the studies [12,18,21,22].

Researches mainly investigate the degree of individual discrimination from two aspects: first, the overall study of individual discrimination perception. For example, "do you feel discriminated against because of your group (race, gender or other characteristics)? Second, examine the perception of discrimination in specific situations. For example, Vasquez [22] investigated the discrimination perception of foreign students from three aspects: lifetime discrimination, recent discrimination and appraised aggression. Krahé et al. [20] investigated the discrimination perception of foreign students from four aspects: language discrimination, avoidance or avoidance, direct discrimination and physical aggression according to the type and severity of objective discrimination.

Influencing factors of left behind children's discrimination perception

In terms of environmental factors, the social, political, economic [23], and cultural environment is the key factors affecting the perception of discrimination. Specifically, a supportive environment has an important impact on the perception of discrimination. At the same time, discrimination is a complex social behavior, which is committed to creating and maintaining social inequality. Correspondingly, discrimination perception is the understanding and function of such social behavior, which inevitably involves the social factors of discrimination. Left-behind children whose parents work outside the home may be more sensitive to outside discrimination because they have the least parental support and are more likely to be regarded as unwanted children. On the other hand, the study found that perception of discrimination was more damaging when social support was weak [24-27].

Economic status has been proved to be an important situational factor that affects children's perception of discrimination. Studies found that there is a close relationship between socio-economic status and individual perception of discrimination by examining the perception of discrimination of ethnic minorities and immigrant adolescents [28,29]. Compared with adolescents with high socio-economic status, adolescents with low socio-economic status have higher social status. Adolescents with economic status have higher perception of discrimination. The economic status of left behind children's families is generally poor, so they are more likely to have discrimination perception. Liu and Shen [23] also showed that after excluding the influence of school type, grade and gender, family socio-economic status had a significant negative predictive effect on individual and group discrimination perception.

In addition, age, gender, and other individual factors also affect children's perception of discrimination. Hu's [30] research found that migrant children in middle and junior middle schools had a significantly higher sense of discrimination than migrant children in primary schools, and migrant children in senior grades had a higher perception of discrimination than those in

junior grades. In terms of gender, Liu [31] finds that migrant boys have higher discrimination perception.

Left-behind children are a large group in China, whose healthy development is related to the stability of the society and the future of the country. It is of great significance for us to understand the psychological development of left-behind children from the whole perspective to investigate the discrimination of left-behind children and its effects. For left-behind children, especially in their adolescent period, it is impossible to truly understand the characteristics of left-behind children's psychological development without an in-depth study of the characteristics of their discrimination. Therefore, it is worthwhile to explore the discrimination perception of left-behind children and may enlighten how the government and social workers provide support for them to improve their mental health.

Methods

The aim of the study was to develop the measurement for perceived discrimination of left-behind children in middle schools in China. The implementation of this study included three phases as follow.

Stage 1: Generating items for discrimination perception of left-behind children (DPLC) Scale

We interviewed 13 left-behind children learning in a middle school in undeveloped province in China on their experience of discrimination with semi-structured interview protocol. The protocol was structured to proceed from general, context-descriptive questions such as "How long have your parents been away working", "How often do they come back". We asked each informant "Have you heard what other people say something about left-behind children", "Who is taking care of you? Do you think you get a lot of attention from them, Do you have other people to help you when you have difficulties, such as a decline in your studies or when you are sick". Interview protocols also included a series of questions about the conflict and concern of without parents living together, "Do you ever worry that someone will bully you and no one will help you because your parents are not at home", "are there any places you might avoid because you're worried about being bullied". The final part of the questions asked about the unfair situation, such as "Do you feel you've been treated unfairly", "Do you think you need to work harder to get the same grades as kids with parents at home".

The interviews were audio-taped with agreement from the interviewees. By analysing, coding, and classifying the verbatim interview draft, 20 items with of 4-point Likert scale on prediction of left-behind children's discrimination perception were obtained. The content was mainly about the discrimination events that left-behind children encounter in and out of school, and it was carried out from four aspects: attack, behavioural discrimination, avoidance, and verbal discrimination. (1) Attack: This dimension includes threats and physical attacks against an out-group (because of its identity), which is the most serious form of discrimination of the four dimensions; (2) Behavioural discrimination: this dimension includes the denial of equal treatment to the rejected groups and the denial of their certain social rights and privileges; (3) Avoidance: This dimension includes avoiding contact with the rejected group, both at the macro level (such as avoiding going to places where there may be rejected group members) and at the micro level (avoiding eye contact with the rejected group). This approach

is antagonistic or potentially harmful to the rejected group, but it is not direct physical harm. (4) Verbal discrimination: this dimension includes verbal evaluation of the rejected group, including negative evaluative statements of the rejected group.

In order to make the items readable, five left-behind children in the same school were invited to try to read each question. If they do not understand or easily produce ambiguity, they would draw it out and then modified it to make the participants would not have obstacles in the process of reading. We revised the language expression of the items to make them clear for left-behind children to answer.

Stage 2: Pretesting the DPLC Scale in a pilot study

A pilot study was carried to measure the reliability and analyzed the items of the DPLC scale. We contact with a principal of middle school in Yunnan province in China in which most of students were left-behind children. He helped to get the content of children and their parents and invited us to test in a class. At the beginning of the pretest, we explain the purpose of the test and asked them to read the instructions. Then they conducted the test. The questionnaire was collected on the spot after the completion of the test, which lasted about 20 minutes. A total of 110 questionnaires were sent out and 105 were effectively received with a recovery rate of 95.5%. Valid questionnaire was chosen by excluding the questionnaire on the blank project too much questionnaire (blank title number more than 5) and has a tendency to specific choice questionnaire (continuous multiple subjects have chosen the same option), and then input the data into the computer.

Among the 105 left-behind children with average age of 14.5, 57.1% were boys, and 42.9% were girls. For the types of left-behind, there were 14.3% children's parents left home less than 6 months, 20.7% children's parents left home between 6 months to 1 year, 16.9% children's parents left home between 1 year to 2 years, 21.3% children's parents left home between 2 years to 4 years, 26.8% children's parents left home more than 5 years.

SPSS 20.0 was used for data analysis and management, to determine the structure and name of items and factors, to form a formal questionnaire, and to test the reliability and validity of the questionnaire.

Stage 3: Phase III. Assessment of the psychometric properties and validity of the DPLC scale

Phase III aimed to verify the construct validity and internal consistency of the DPLC scale. The data collection procedures performed during this phase were the same as the data collection procedures performed in Phase II. The sampling consisted of 402 valid questionnaires after removing 18 invalid questionnaires.

Regarding the demographic information of the children with average of 14.3, 48.7% were boys, and 51.3% were girls. For the types of left-behind, there were 14.3% children's parents left home less than 6 months, 20.7% children's parents left home between 6 months to 1 year, 16.9% children's parents left home between 1 year to 2 years, 21.3% children's parents left home between 2 years to 4 years, 26.8% children's parents left home more than 5 years.

Given that the factor structure of the DPLC was clear according to the framework we constructed, in the formal study, a confirmatory factor analysis (CFA) was conducted to verify the internal structure via a maximum likelihood estimation using AMOS 24.0. Additionally, the construct validity was measured by calculating the correlation between the dimensions

and subscales and the correlation between the subscales and the whole scale using SPSS 20.0. Finally, the internal consistency was verified by employing Cronbach's alpha (α) coefficients and split half reliability by SPSS 20.0.

Results

Pretesting the DPLC Scale in a pilot study

First, Cronbach's alpha coefficient is used to evaluate the reliability of the scale (Table 1). The Verbal subscale, Behavioral discrimination subscale, Avoidance subscale, verbal discrimination subscale and the whole DPLC scale had alphas

of 0.878, 0.840, 0.946, 0.743, and 0.958, respectively, showing that the questionnaire has high internal consistency.

Secondly, in the item analysis stage, the item-total correlation coefficient of all items is above 0.4, and 20 questions are retained (Table 2).

Assessment of the validity of the final version of the DPLC scale

We use CFA to analyze the effectiveness of the scale. We performed CFA and analyzed the validity of the entire scale. In the confirmatory factor analysis, items with insignificant factor load

Table 1. Cronbach's Alpha coefficient of the questionnaire

Scale	Cronbach's Alpha	N
Attack	0.878	5
Behavioral discrimination	0.84	7
Avoidance	0.946	6
Verbal discrimination	0.743	2
Sum	0.958	20

Table 2. The item-total correlation coefficient

Item	Pearson coefficient
E1	.744**
E2	.755**
E3	.877**
E4	.795**
E5	.753**
E6	.599**
E7	.884**
E8	.567**
E9	.728**
E10	.742**
E11	.918**
E12	.748**
E13	.898**
E14	.874**
E15	.874**
E16	.830**
E17	.782**
E18	.790**
E19	.938**
E20	.633**

Table 3. Model fitting indexes of the CFA

	CMIN/DF	RMSEA	CFI	TLI	SRMR
DPLC-1	1.987	0.065	0.832	0.808	0.067
DPLC-2	1.984	0.065	0.873	0.849	0.064

Note: DPLC-1 is the questionnaire before the undeleted factor conforms to less than 0.4. DPLC-2 is the questionnaire after the deletion factor meets less than 0.4.

or lower than 0.4 are deleted, and keep 17 items. Then, estimate the remaining items again to obtain the final model, DPLC-2 scale. Table 3 lists the model fit of the DPLC-1 scale and DPLC-2 scale. The CMIN/DF, RMSEA, CFI, TLI and SRMR values were used to test the model fit. The fit is considered acceptable

as follows: CMIN/DF ≤ 3.00 , RMSEA, SRMR ≤ 0.08 , and TLI, CFI ≥ 0.80 . The data shown in Table 4 and Table 5 indicate that the model provides an acceptable degree of fit to the data. In the final model, the standardized loadings of all items reached above 0.4, and reached statistically significant levels.

Table 4. Model fitting indexes of the CFA

Subscale	Item	Estimate
Attack	E1	0.577
	E2	0.568
	E3	0.589
	E4	0.551
	E5	0.66
Behavioral discrimination	E6	0.383
	E7	0.685
	E8	0.217
	E9	0.414
	E10	0.188
	E11	0.673
	E12	0.456
Avoidance	E13	0.415
	E14	0.673
	E15	0.64
	E16	0.534
	E17	0.41
	E18	0.411
Verbal discrimination	E19	0.702
	E20	0.73

Table 5. Model fitting indexes of the CFA

Subscale	Item	Estimate
Attack	E1	0.577
	E2	0.575
	E3	0.582
	E4	0.558
	E5	0.656
Behavioral discrimination	E6	0.686
	E7	0.412
	E8	0.662
	E9	0.437
Avoidance	E10	0.414
	E11	0.671
	E12	0.639
	E13	0.536
	E14	0.415
	E15	0.412
Verbal discrimination	E16	0.704
	E17	0.728

Table 6. Correlation coefficient table

Subscale	Verbal	Behavioral discrimination	Avoidance	Verbal discrimination	Sum
Attack	1				
Behavioral discrimination	.615**	1			
Avoidance	.232**	.332**	1		
Verbal discrimination	.475**	.521**	.322**	1	
sum	.799**	.819**	.663**	.698**	1

Table 7. Cronbach's Alpha coefficient of the final scale

Subscale	Cronbach's Alpha	No. of items
Attack	0.716	5
Behavioral discrimination	0.59	4
Avoidance	0.646	6
Verbal discrimination	0.671	2
Sum	0.817	17

Table 8. Means and standard deviations of the DPLC-2 scale

Subscale	Mean	Standard deviation
Attack	1.93	0.52
Behavioral discrimination	2.10	0.45
Avoidance	2.30	0.61
Verbal discrimination	2.63	0.63
Sum	2.24	0.30

Table 9. Means and standard deviations of the DPLC-2 scale

Gender	Attack	Behavioral discrimination M±SD	Avoidance M±SD	Verbal discrimination	Sum M±SD
Male	2.27±0.48	2.33±0.35	1.89±0.51	2.68±0.63	2.29±0.29
Female	1.60±0.32	1.87±0.42	2.69±0.41	2.59±0.63	2.19±0.30
T	8.35**	6.91**	6.99**	0.37	0.24

As shown in Table 6, the correlation between the subscales is lower than the correlation between the whole scale and the subscales. This indicates that the scale has good structural validity.

The Cronbach alpha coefficient of each subscale and the whole final DPLC scale is calculated Table 7. The Cronbach's alpha coefficient results were 0.716, 0.590, 0.646, 0.671 and 0.817, showing that the questionnaire has high internal consistency.

Finally, the DPLC scale was developed and consisted of 17 items and four subscales.

Discrimination perception status of left-behind children in China

Table 8 displays the means and standard deviations of the DPLC scores of the 402 participants. The total score of the DPLC was 2.24, and the scores of the four subscales varied from 1.92-2.63, showing that children's perception of discrimination is at a low level.

In the comparison of the boys and girls in general discrimination perception (table 9), there was no significant discrimination perception, while there were significant differences in aggression, discrimination and avoid dimensions. Specifically, boys' perception of attack and behavior discrimination was significantly higher than girls, and girls' perception of avoidance was significantly higher than boys.

Discussion

The main aim of the current study was to develop a reliable scale to measure left-behind children's discrimination perception in Chinese context. The necessity of such a scale was confirmed by reviewing the existing literature, which showed that there were no specific scales with good validity and reliability for measuring discrimination perception of left-behind children. The DPLC scale was developed and consisted of 17 items and four subscales, including attack, behavioral discrimination, avoidance and verbal discrimination. The factor structure of the DPLC scale was verified, and the results of the confirmatory

factor analysis showed that the model had an acceptable fit, indicating that the DPLC scale has good construct validity. The construct validity was further verified by the correlation between the dimensions and the subscales and the correlation between the subscales and the whole scale. The Cronbach's alpha coefficient and split-half reliability were also calculated. In conclusion, the DPLC scale is a valid measurement instrument with good validity and reliability.

The results of this study further show that of discrimination was low on average, which was similar with Xie et al.'s [32] findings, who found the mean of left-behind children's discrimination perception was 2.56/5. Specifically, they experience behavioral discrimination the most, causing harm to left-behind children, which confirmed previous studies in mainland China [33]. The behavioral discrimination ranked highest in the left-behind children's discrimination perception in Chinese context due to the household registration system, highly related with enrolment, employment, medical insurance, etc, which was not only the cause children's left-behind, but also increased the vulnerable group attributes of left-behind children [34]. The following dimension were attack, verbal discrimination and avoidance. It was consistent with existing research. Liao et al. [33] and Chang et al. [35] found the left-behind children experienced more physical bullying than their peer.

Competing interests

The authors declare no competing interests.

Ethical approval

The study was approved by the Institutional Review Board of Beijing Normal University.

Informed consent

Written informed consent was obtained from the participants by the help of their teachers, which was delivered and collected with the questionnaire together.

Additional information

Correspondence and requests for materials should be addressed to Wangqian Fu.

Funding

This research is funded by Grant No. 20YJC880015 from the Department of Social Sciences, Ministry of Education, People's Republic of China

References

1. Wu N. Research Report on the Problems of Left-behind Children in Rural Areas. *Research on Education*. 2004;10:55-61.
2. Duan C, Lv L, Guo J, Wang Z. The basic situation of the survival and development of rural left-behind children in China. *Population Journal*. 2013;3:37-49.
3. Fang X, Fan X, Liu Y. The role of coping style in the relationship between perceived discrimination and loneliness in migrant children. *Psychological Development and Education*. 2008;4:93-99.
4. Horta O. Does discrimination require disadvantage?. *Moral Philosophy & Politics*. 2015;2(2).
5. Liu X. Perceived Discrimination and Depression among Left-behind Children in Rural China: The Mediating Role of Friendship Quality. Shandong Normal University. 2017.
6. Pascoe EA, Smart Richman L. Perceived discrimination and health: a meta-analytic review. *Psychol Bull*. 2009;135(4):531-554.
7. Shen J, Hu X, Liu X. The relationship between perceived discrimination and subjective well-being among left-behind children. *Journal of Henan University (Social Science Edition)*. 2009;49(06):116-121.
8. Fishbein HD. Peer prejudice and discrimination: evolutionary, cultural, and developmental dynamics. Westview press. 1996.
9. Liu X, Zhao J, Shi B. Dual Effects of Perceived Discrimination and Its Psychological Mechanism. *Psychological Development and Education*. 2011;27(2):216-223.
10. Dion K, Kawakami K. Ethnicity and perceived discrimination in Toronto: Another look at the personal/group discrimination discrepancy. *Canadian Journal of Behavioral Science*. 1996;28:203-213.
11. Brown CS, Bigler RS. Children's perception of discrimination: A developmental model. *Child Development*. 2005;76:533-553.
12. Borrell C, Palència L, Bartoll X, Ikram U, Malmusi D. Perceived discrimination and health among immigrants in Europe according to national integration policies. *International Journal of Environmental Research and Public Health*. 2015;12(9):10687-10699.
13. Ikram UZ, Snijder MB, Fassaert TJJ, Schene AH, Kunst AE, Stronks K. The contribution of perceived ethnic discrimination to the prevalence of depression. *Eur J Public Health*. 2015;25:243-248.
14. Aichberger MC, Bromand Z, Rapp MA, et al. Perceived ethnic discrimination, acculturation, and psychological distress in women of Turkish origin in Germany. *Soc Psychiatr Psychiatr Epidemiol*. 2015;15:1691-1700.
15. Fan L, Shao J. Family economic status and subjective well-being of left-behind children: The mediating role of perceived discrimination. *Journal of Guizhou Normal University (Natural Science Edition)*. 2013;31(6):32-36
16. Zhao J, Yang P, Ma J, Huang C. The relationship between perceived discrimination and positive/negative emotions of left-behind children in rural areas: The protective effect of parent-child attachment. *Psychological Development and Education*. 2016;(32):369-376.
17. Zhang L, Fu W, Wang D, Bao Z. Perceived discrimination among left-behind children in junior middle school and its influence on problem behavior. *Chinese Special Education*. 2015;(7):53-59.
18. Ruggiero KM. The personal/group discrimination discrepancy. *Journal of Social Issues*. 2010;55(3):519-536.
19. Schmitt MT, Branscombe NR, Postmes T. Women's emotional responses to the pervasiveness of gender discrimination. *European Journal of Social Psychology*. 2010;33(3):297-312.
20. Krahe B, Abraham C, Felber J, Helbig MK. Perceived discrimination of international visitors to universities in Germany and the UK. *British Journal of Psychology*. 2011;96(Pt 3): 263-281.
21. Lee MA, Ferraro KF. Perceived discrimination and health among Puerto Rican and Mexican Americans: buffering effect of the *lazo matrimonial*?. *Social Science & Medicine*.

- 2009;68(11):1966-1974.
22. Vasquez J. The relationship between ethnic identity and ethnic -racial socialization in predicting perceived discrimination and subjective well -being among Latino college students in the Southwest (Order No. 3383037). 2009. Available at <https://www.proquest.com/dissertations-theses/relationship-between-ethnic-identity-racial/docview/304954541/se-2?accountid=8554>
 23. Liu X, Shen J. Discrimination perception of migrant children and their relationship with self-esteem. *Psychological science*. 2010;33(3):695-698.
 24. Dachachi BD, Woyessa NW, Weldmeskel FM. Perceived discrimination difference between the manjo minority and non-manjo ethnic group in kaffa zone, Ethiopia. *Research Society and Development*. 2020;9(9):e626997386.
 25. Finch BK, Vega WA. Acculturation stress, social support, and self-rated health among Latinos in California. *Journal of Immigrant Health*. 2003;5(3):109-117.
 26. Jasinskaja-Lahti I, Liebkind K, Perhoniemi R. Perceived discrimination and well-being: a victim study of different immigrant groups. *Journal of Community & Applied Social Psychology*. 2010;16(4):267-284.
 27. Noh S, Kaspar V. Perceived discrimination and depression: moderating effects of coping, acculturation, and ethnic support. *American Journal of Public Health*. 2003;93(2):232.
 28. Ergin DA. The effects of perceived discrimination, social support and ethnic identity on mental health of immigrant adolescents. *Scandinavian Journal of Child and Adolescent Psychiatry and Psychology*. 2021;9(1).
 29. Phinney J. The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. *Journal of Adolescent Research*. 1992;7:156-176.
 30. Hu F. The Relationship between Perceived Discrimination and Psychological Adjustment of Migrant Children and Its Influence Mechanism. Master Dissertation of Anhui Normal University. 2010.
 31. Liu X. Perceived discrimination among migrant children: Influencing factors and mechanisms. Doctoral Dissertation of Beijing Normal University. 2008.
 32. Seaton EK, Yip T, Douglass S. Racial and ethnic discrimination. New York: Springer. 2011.
 33. Xie Q, Zheng H, Fan Y, He F, Quan X, Jiang G. The relationship between perceived discrimination and loneliness and problem behavior in left-behind junior high school students. *Psychological Science*. 2020;43(06):1355-1362.
 34. Liao L, Sun H, Zhang Y, Chen S, Ke Y, Yang Y. The influence of parent-child separation on left-behind children's bullying victimization and inferiority complex. *Chinese Journal of Health Service Management*. 2020;37(12):943-945+960.
 35. Wang Z, Li C. Why there are so many left-behind children in China: Evidence from public schools of non-policy household registration discrimination. *Journal of Labor Economics*. 2018;6(05):20-41.
 36. Chang J, Liu S, Hu J. The current situation of school bullying among rural left-behind children in a county of Gansu province. *Chinese Journal of School Health*. 2018;39(09):1405-1407.

Appendix

Appendix: *discrimination perception of left-behind children (DPLC) Scale*

Items	1 never	2 rarely	3 sometimes	4 often
Attack				
1. With my father or mother absent, I was afraid that others would bully me.	1	2	3	4
2. I've been verbally attacked because my father or mother wasn't around.	1	2	3	4
3. People have threatened to beat me because my father or mother was not there.	1	2	3	4
4. I have experienced being beaten because my father or mother was not there.	1	2	3	4
5. Without a parent around, I would avoid certain places for fear of being bullied	1	2	3	4
Behavioral discrimination				
6. At school, I felt that I was treated unfairly because my father or mother was not there.	1	2	3	4
7. If I make a mistake, because my father or mother is not around, I will be scolded more severely by relatives, friends or teachers.	1	2	3	4
8. Outside the school, I was treated unfairly because MY father or mother was not there.	1	2	3	4
9. When I do something, I don't get the recognition.	1	2	3	4
Avoidance				
10. Because my mother or father wasn't around, people didn't want to talk to me.	1	2	3	4
11. I don't get much attention. People are cold to me.	1	2	3	4
12. People kept away from me.	1	2	3	4
13. When people found out my mother or father wasn't around, they would lose interest in me or turn away.	1	2	3	4
14. People try not to make eye contact with me.	1	2	3	4
15. People try not to touch me physically.	1	2	3	4
Verbal discrimination				
16. Because my father or mother was not around, I was judged negatively or discriminated against.	1	2	3	4
17. Some people express some prejudices about left-behind children in front of me.	1	2	3	4