Original Article

Socioeconomic disparities in education placement for children of primary school age with autism spectrum disorder in China

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SUMMARY   Relatively little is known about education placements for children with autism spectrum disorder (ASD) in China. While disparities in ASD diagnoses and services for the population broadly are often documented, the presence and determinants of differences in the educational placement of ASD children are less studied and understood. By identifying who is likely to be in segregated settings, we can discern how to best support them and facilitate a possible transition to a less restrictive setting. This study describes four placements (regular schools, special schools, institutions, homes) and their influencing factors retrospectively in a large sample (n = 2,190) of Chinese primary school-aged children (6-12 years old). We divided ASD into severe and mild to moderate categories for analysis. Children with ASD were more likely to study in a regular school (48.60%), while 13.88% were in a special school. Children with severe ASD were placed in less regular settings than children with mild to moderate ASD. However, families with higher socioeconomic status (SES) were more likely to place their children in regular schools than lower SES families if their children experienced mild to moderate symptoms. Children with severe ASD were more likely to be placed in expensive institutions for families with higher SES than those with lower SES. SES disparities in educational placement existed and had two manifestations. It is important to characterize educational placements of students with ASD to determine the extent to which they are placed in general education settings, which are often the preferred placement.

Keywords   autism spectrum disorder (ASD), primary school, inclusive education, socioeconomic disparities, China

1. Introduction

Autism spectrum disorders (ASDs) are a range of neurodevelopmental disorders that are characterized by the following core deficits: impairments in social interaction and communication and restricted, repetitive behaviors (*1*). According to the recent evidence from China, the prevalence of ASD among children aged 6 to 12 years was 0.7% (*2*), which was much higher than most previous research findings in China. As a developing country with a large population, China faces the challenge of providing sufficient educational supports for individuals with ASD. The required supports include direct cognitive instruction, behavior cultivation, as well as necessary social-emotional and mental health services

(*3*). In recent years, countries worldwide have explored and supported inclusive education, which is viewed as a moral and judicial imperative (*4*) and a reflection of a fair society (*5*). In the context of a growing emphasis on inclusive education, the increasing number of children with ASD diagnosed has led to a competition for inclusive education resources.

Educational placement is not a simple choice or allocation. Numerous factors can influence the placement of education among children with special need (*6-8*). ASD students with greater support needs face a series of barriers that may prevent them from making the most of their inclusive education (*9*). In addition to children's characteristics, the socio-economic background (SES) of families can also impact the decisions. A higher family

income has been found to be associated with a greater probability of attending non-public schools rather than public schools for ASD children (*10*). When mothers have a higher level of education, the children with Down syndrome are more likely to choose mainstream schools (*11*). Children from higher SES families are more likely to receive education from less restrictive placements than children from lower SES backgrounds (*12*). But there have also been contrasting findings. For example, students with vision impairment from families with higher SES are more frequently placed in special than regular schools (*13*). Maternal educational attainment is not significantly related to attending non-public or public school (*10*). Nevertheless, the growing literature have noted that improved service access among families with more resources (*14*). The SES of parents differentiate the forms of educating students with disabilities.

While these studies have contributed significantly to our understanding of this topic, they are limited in the following ways. First, although SES disparities in the diagnosis and utilization of healthcare services for ASD are studied, there is limited research regarding the SES differences in educational placement for students with ASD, and no consistent conclusions have been reached (*15,16*). The placement in less-restrictive settings varied along a number of factors, such as parents' level of education, suggesting an inequitable access to the inclusive educational resources for children with ASD. Second, symptoms of diseases exhibit heterogeneity, while abilities may serve as a starting point for research. Higher functional skills were associated with greater likelihood of attending postsecondary education or earning above minimum wage (*17*). However, existing analyses of educational placement lack exploration into the influence of ASD symptoms. Third, previous studies usually focused on one or two types of educational placements, but it was far more than just schools (regular or special). Home is also an educational arrangement that can be handled by parents for training or given up training (*18*) and it requires analysis of more categories of educational placement. Fourth, most studies have been conducted in other countries with different health systems, which were likely to differ from those in China. China's Sui Ban Jiu Du or learning in regular classrooms (LRC) program, implemented since the 1980s, aims to integrate children with special needs into regular classrooms (*19*). But many children with ASD were still excluded due to factors like not meeting criteria or limited resources of this policy (*20*). The current understanding of how families in China place children with ASD in educational settings is not fully clear.

The SES difference may affect resource allocation and children's health outcomes, which necessitate more reasonable public health and education initiatives, as their goal is to decrease the disadvantages of lower SES households. Therefore, we examine the educational placements for children with ASD in China using a nationwide survey data. It is important to characterize educational placements to determine the extent to which they are placed in general education settings which are often the preferred placement. It is also important to identify correlates of placement in general education settings; by identifying who is likely to be in segregated settings, we can discern how to support them and make a potential transition to a less restrictive setting. It therefore remains unclear what factors are truly influential and effective in developing inclusive education programs for children with ASD on a policy level. Research on China can not only shed light on the current status of inclusive education in developing countries, thereby facilitating the development of more appropriate policies, but also enhance understanding of inequality.

2. Methods

2.1. Participants

This study used data from the Survey on Family Circumstances and Demand for Support and Resources among Autistic Children in China (FCDSR). It was a survey that was distributed to members of the AlsoLife online patient community. More than 200,000 parents of ASD children can share information about their conditions, treatments, symptoms, and comorbidities on that platform, which is the largest online gathering place for parents with children and adolescents with ASD in China. The Quality Assurance staff at China Association of Rehabilitation of Disabled Persons (CARDP) reviewed the survey for editorial and technical suggestions, which aimed to describe the family information, treatment, education and health expenditure of ASD children. The survey was available online from 15th September to 30th September 2020. The other details of survey have been described elsewhere (*21*).

2.2. Data collection

Families having children diagnosed with ASD were recruited if they met the following criteria: (1) the children were between the ages of 6 and 12 that the age of primary school; (2) the hospital had diagnostic qualifications and followed a Diagnostic and Statistical Manual of Mental Disorders 5th ed (DSM-5) standard, not only through scale measurement but also *via* medical professional diagnosis. Exclusion criteria were individuals with physical support needs such as those who have a diagnosis of cerebral palsy. Children with intellectual disabilities were not excluded in this analysis. There were 8014 households investigated, with 2190 households included in this study. The selection procedure was depicted in Figure 1. The family location distribution was consistent with China's overall population distribution. 31 provinces in China and a total of 216 cities or districts were included (see Supplemental
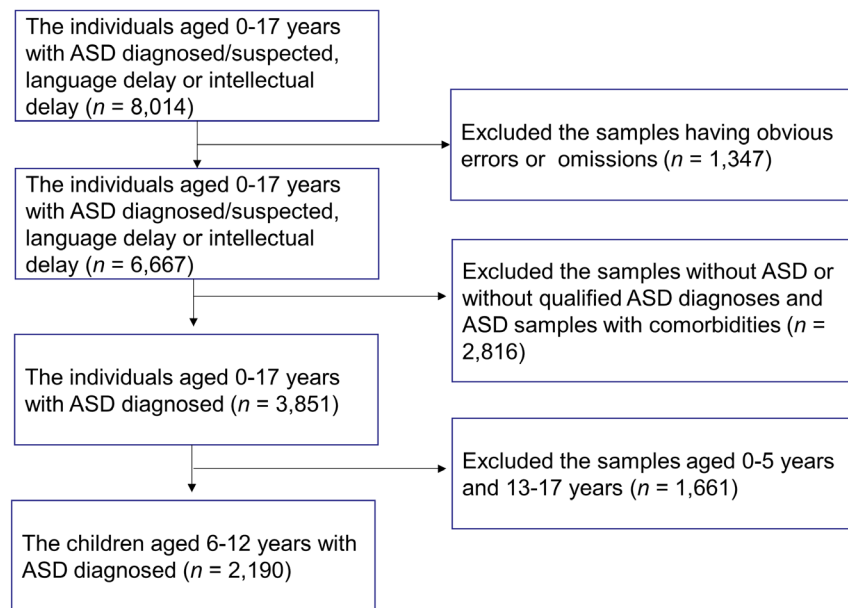
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┌─────────────────────────┐
│ The individuals aged 0-17 years │
│ with ASD diagnosed/suspected,   │
│ language delay or intellectual  │
│ delay (n = 8,014)               │
└─────────────────────────┘
            │           ┌─────────────────────────────┐
            ├──────────▶│ Excluded the samples having obvious │
            │           │ errors or omissions (n = 1,347)     │
            ▼           └─────────────────────────────┘
┌─────────────────────────┐
│ The individuals aged 0-17 years │
│ with ASD diagnosed/suspected,   │
│ language delay or intellectual  │
│ delay (n = 6,667)               │
└─────────────────────────┘
            │           ┌─────────────────────────────┐
            │           │ Excluded the samples without ASD or │
            ├──────────▶│ without qualified ASD diagnoses and │
            │           │ ASD samples with comorbidities (n = │
            │           │ 2,816)                              │
            ▼           └─────────────────────────────┘
┌─────────────────────────┐
│ The individuals aged 0-17 years │
│ with ASD diagnosed (n = 3,851)  │
└─────────────────────────┘
            │           ┌─────────────────────────────┐
            ├──────────▶│ Excluded the samples aged 0-5 years │
            │           │ and 13-17 years (n = 1,661)         │
            ▼           └─────────────────────────────┘
┌─────────────────────────┐
│ The children aged 6-12 years with │
│ ASD diagnosed (n = 2,190)         │
└─────────────────────────┘
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Figure 1. Flow chart.

Table S1 for details, *http://www.biosciencetrends.com/action/getSupplementalData.php?ID=186*). The sample distribution is relatively consistent with the national population distribution, and the sample is representative of the country.

2.3. Measures

2.3.1. Educational placements

It includes four educational placements, namely: "regular school", which means the most of time the students' study were in ordinary or regular schools that serviced general education students; "Special schools", which means that the most of time the students' study were in public special schools that serviced primarily students with special needs; "Institution", which means that the most of time the child were in private institutions that serviced students with special needs, especially for those developmental disorders. The institutions were those more restrictive training agencies, with the majority being private due to inadequate or unsatisfactory services provided by public special and regular schools (*22*). "Home", which means that the children had no other placements but home. Compared to regular schools, the other three placements were more restrictive environment for children with ASD. Because of variances between institutions, we have designated the top 25th percentile of monthly fees as the expensive ones.

2.3.2. Socioeconomic and Demographic Variables

The age of the children was their age at the survey point. The age of children was divided into **two** age groups: 6-8 years old (the primary grades) and 9-12 years old (high-grades in primary school).

The severity of ASD was judged according to professional evaluation or parents' subjective judgment. Due to the fact that severe symptoms were often easier to distinguish, while moderate and high function were more difficult to accurately distinguish, we divided the severity into two levels: (1) severe or need lots of supports (the children with low function ASD (LFA)), (2) mild/moderate or need some supports (the children with middle function autism (MFA) and high function autism (HFA). The regional variables were "eastern", "central" and "western". The provinces in the eastern region were among the first to implement the coastal opening-up policy and have a high level of economic development. The provinces of the central region are economically underdeveloped, while those of the western region are even less so. We classified family income into three categories. According to the data distribution, the below-average group had an annual income of less than $12,327 (80,000 yuan), the around-average group had an annual income of between $12,327 (80,001 Yuan) and $23,112 (150,000 Yuan), and the above-average group had an annual income of more than $23,112 (150,000 Yuan), (*21*). Other background information was collected on children's sex, children's number in the family, parents' education levels.

2.4. Statistical analysis

We use frequencies and percentages to reported for categorical variables, and means/SDs (standard deviations) for continuous variables. Logistic regression models were used to identify the factors influencing educational placements. Associations between predictors and independent variables were reported by odds ratios (*OR*s) and their 95% confidence intervals (*CI*s). All statistical analyses were conducted using SPSS 22.0 for

Windows (SPSS Inc, Chicago, IL, USA).

2.5. Consent and ethics approval

All families provided electronic informed consent before enrollment. All procedures involving human subjects/patients were approved by the ethics committee of Peking University Institutional Review Board and approval number is IRB00001052-20016.

3. Results

3.1. Sample descriptive statistics

A total of 2190 households were included in this survey. Most of the children (86.12%) were boys, and the mean age was 7.44 (SD: 1.45) years old, with the leading severity being mild/moderate (73.84%). 26.16% of the children had severe ASD symptoms. Most of the parents had a college degree (65.34%). Most families lived in the eastern region (62.92%), which was in line with China's population distribution. A total of 48.26% of children were in regular schools, while a total of 13.88% were in special schools, a total of 29.86% were in institutions, and a total of 7.99% were at home. The study population was further described in Table 1.

Figure 2 depicts the proportions of children with ASD who had different accommodations stratified by gender, maternal education level, household income and resident districts. There was no significant difference in the proportion of boys and girls entering the four placement categories. When a child had mild or moderate symptoms, had higher maternal education level he or she was more likely to enter regular schools and les s less likely to be institutions and home. For children with milder symptoms, the proportion of entering regular schools was higher when they came from higher-income

Table 1. Characteristics of study sample (*n* = 2,190)

Characteristic	N/M	%/SD
Age	7.44	1.45
Sex		
Boy	1,886	86.12
Girl	304	13.88
Only child		
No	1,056	48.22
Yes	1,134	51.78
Severity		
Severe	573	26.16
Mild/moderate	1,617	73.84
Maternal Education level		
High school or below	759	34.66
College degree or higher	1,431	65.34
Household income		
Low	728	33.24
Middle	761	34.75
High	701	32.01
Resident districts		
Eastern	1,378	62.92
Central	594	27.12
Western	218	9.95
Placements		
Regular school	1,057	48.26
Special school	304	13.88
Institution	654	29.86
Home	175	7.99

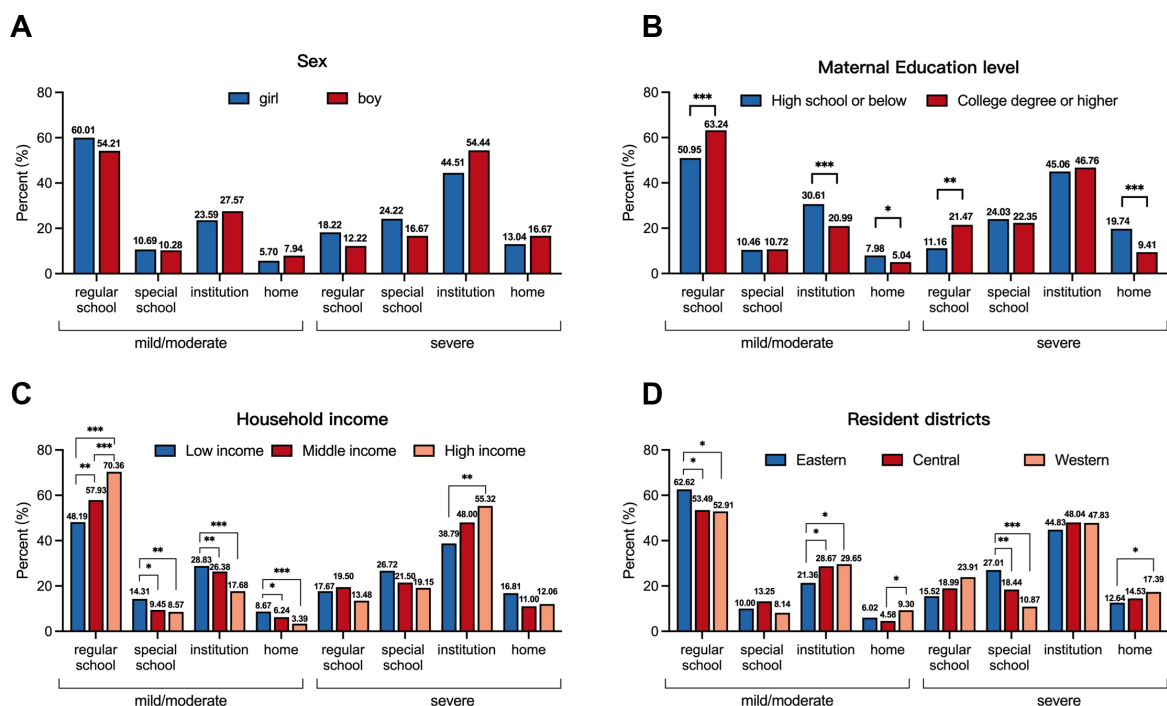N: number; M: mean; SD: standard deviation.

Figure 2. Percentage of children with ASD who had different educational placement stratified by (A) sex, (B) maternal education level, (C) household income, (D) resident districts. *p ≤ 0.05, **p < 0 .01, ***p < 0.001.

families (70.36% *vs*. 57.93% *vs*. 48.19%), while the proportions of special schools, institutions, and home-based care were lower for children with high family income. For children with more severe symptoms, the proportion of entering institutions was higher for children from higher-income families (55.32% *vs*. 38.79%). Children with milder symptoms from families in the eastern region were more likely to enter regular schools (62.62% *vs*. 53.49% *vs*. 52.91%) and less likely to enter institutions (21.36% *vs*. 28.57% *vs*. 29.65%). For children with more severe symptoms, when children from families in the eastern region, there is a higher proportion of children attending special schools (27.01% *vs*. 18.44% *vs*. 10.87%).

3.2. Predictors of educational placements

The probability of older age group (9-12 years) entering regular schools was higher than that of younger age group (6-8 years) (OR 1.51, 95% CI 1.20–1.90). The only child was more likely to be in regular school than child from multi-children family (OR 1.21, 95% CI 1.00–1.46). The children with mothers who had a college degree or above were 1.42 times more likely to be in regular school than the mothers who had no college degrees (OR 1.42, 95% CI 1.15–1.76; Table 2). A child with higher family income was more likely to

be in regular school than child from low-income family (OR 1.30, 95% CI 1.04–1.64 for middle income family; OR 1.74, 95% CI 1.36–2.23 for high income family). Children with higher severity of ASD were less likely to enter regular schools when compared to mild/moderate severity (OR 0.15, 95% CI 0.11–0.19). Girls had a lower probability of entering regular schools compared to boys (OR 0.75, 95% CI 0.57–0.98).

For special school placement, the severity of ASD, age, family income, and the location of the family had an impact. Children in older age group were 2.31 times more likely to be in special schools than younger children (OR 2.31, 95% CI 1.77–3.02). Children with higher severity of ASD were 2.22 times more likely to be in special schools when compared to mild/moderate severity (OR 2.22, 95% CI 1.71–2.87). Children whose families reside in the western region were less likely to be enrolled in special schools compared to those from eastern region (OR 0.53, 95% CI 0.32–0.88). Children from middle or high income families were less likely to be special schools compared to those from low-income families (OR 0.65, 95% CI 0.48–0.88 for middle income family; OR 0.55, 95% CI 0.39–0.77 for high income family).

For institution placement, child sex, age, the severity of ASD, maternal education, and the location of the family had an impact. Girls had a higher probability of

Table 2. Multivariable logistic regression models for four placements

Characteristics	Model 1 regular school			Model 2 special school			Model 3 institution			Model 4 home		
	OR	95%CI		OR	95%CI		OR	95%CI		OR	95%CI	
		Low	High		Low	High		Low	High		Low	High
Sex												
Boy	1.00			1.00			1.00			1.00		
Girl	0.75	0.57	0.98	0.83	0.57	1.21	1.31	1.00	1.71	1.44	0.96	2.18
Age												
6-8 years	1.00			1.00			1.00			1.00		
9-12 years	1.51	1.20	1.90	2.31	1.77	3.02	0.26	0.20	0.35	1.34	0.94	1.91
Only child												
No	1.00			1.00			1.00			1.00		
Yes	1.21	1.00	1.46	0.80	0.62	1.04	1.00	0.82	1.23	0.77	0.57	1.07
Severity												
Mild/moderate	1.00			1.00			1.00			1.00		
severe	0.15	0.11	0.19	2.22	1.71	2.87	3.08	2.48	3.81	2.19	1.59	3.03
Maternal Education level												
High school or below	1.00			1.00			1.00			1.00		
College degree or higher	1.42	1.15	1.76	1.28	0.96	1.71	0.71	0.57	0.88	0.63	0.45	0.89
Household income												
Low	1.00			1.00			1.00			1.00		
Middle	1.30	1.04	1.64	0.65	0.48	0.88	1.13	0.89	1.43	0.73	0.51	1.06
High	1.74	1.36	2.23	0.55	0.39	0.77	0.94	0.72	1.22	0.58	0.37	0.92
Resident district												
Eastern	1.00			1.00			1.00			1.00		
Central	0.83	0.67	1.03	0.94	0.71	1.26	1.36	1.09	1.70	0.87	0.59	1.26
Western	0.74	0.55	1.01	0.53	0.32	0.88	1.62	1.17	2.23	1.60	1.01	2.57

OR: odds ratio; CI: confidence interval. Independent variables were entered using the stepwise forward method. Model 1: regular school in comparison with all other placements; Model 2: special school in comparison with all other placements; Model 3: institution in comparison with all other placements; Model 4: home in comparison with all other placements.

entering institutions compared to boys (OR 1.31, 95% CI 1.00–1.71). Children with higher severity of ASD were 3.08 times more likely to be institutions when compared to mild/moderate severity (OR 3.08, 95% CI 2.48–3.81). Children with mothers who had a college degree or above were less likely to be in institutions when compared with the mothers without college degrees (OR 0.71, 95% CI 0.57–0.88). Children with families reside in the central or western region were more likely to be institutions compared to those reside in the eastern region (OR 1.36, 95% CI 1.09–1.70 for central; OR 1.62, 95% CI 1.17–2.23 for western).

For home placement, severity of ASD, maternal education, family income and the location of the family had an impact. The children with mothers who had a college degree or above were less likely to be in homes than the mothers who had no college degrees (OR 0.63, 95% CI 0.45–0.89). The children with high family income were less likely to be in homes than children from low-income family (OR 0.58, 95% CI 0.37–0.92). Children with higher severity of ASD were 2.19 times more likely to be at their homes when compared to mild/moderate severity (OR 2.19, 95% CI 1.59–3.03). Children whose families reside in the western region were more likely to be homes compared to the eastern region (OR 1.60, 95% CI 1.01–2.57).

3.3. The association between severity of ASD and family income in the educational placements

Model 5 and model 6 in Table 3 added the interaction between severity of ASD and family income. Compared with children with mild/moderate severity in low-income family, the odds ratio to be in regular school of severe children in high income families were lower, with OR of 0.30 (95%CI 0.16–0.56). CCompared with children with mild/moderate severity in low-income family, the odds ratio to be in expensive institutions of severe children in high income families were higher, with OR of 3.43 (95%CI 1.72-6.84) (Table 3). Figure 3 further illustrated the interaction between severity of ASD and family income, which presented that regular school's negative slope with respect to severity was steeper for high income family than for low-income family, and expensive institution's slope was in different directions. It indicated that as the level of severity of ASD increased, the possibility for regular schools' placement for children from high-income families decreased faster than whom from low-income families. What's more, as the level of severity of ASD increased, the possibility for expensive institution placement for children from high-income family increased faster.

Table 3. household income difference of the association between comorbidities and accommodations

Characteristics	Model 5 regular school			Model 6 institute (expensive ones)		
	OR	95%CI		OR	95%CI	
		Low	High		Low	High
Sex						
Boy	1.00			1.00		
Girl	0.74	0.57	0.97	1.14	0.80	1.61
Age group						
6-8 years	1.00			1.00		
9-12 years	1.50	1.19	1.89	0.23	0.15	0.37
Only child						
No	1.00			1.00		
Yes	1.19	0.99	1.44	1.17	0.90	1.52
Severity						
Mild/moderate	1.00			1.00		
severe	0.22	0.15	0.32	1.37	0.80	2.53
Maternal Education level						
High school and below	1.00			1.00		
College degree or higher	1.42	1.15	1.76	1.05	0.77	1.41
Household Income						
Low	1.00			1.00		
Middle	1.37	1.07	1.76	1.44	0.96	2.17
High	2.13	1.62	2.80	1.34	0.87	2.06
Severity*Household Income						
Low* Mild/moderate	1.00			1.00		
Middle *Severe	0.78	0.45	1.35	1.74	0.88	3.43
High * Severe	0.30	0.16	0.56	3.43	1.72	6.84
Resident district						
Eastern	1.00			1.00		
Central	0.84	0.67	1.04	0.86	0.64	1.17
Western	0.76	0.55	1.03	1.39	0.93	2.09

OR: odds ratio; CI: confidence interval. Independent variables were entered using the stepwise forward method. Model 5: regular school in comparison with all other placements; Model 6: expensive institute in comparison with all other placements.
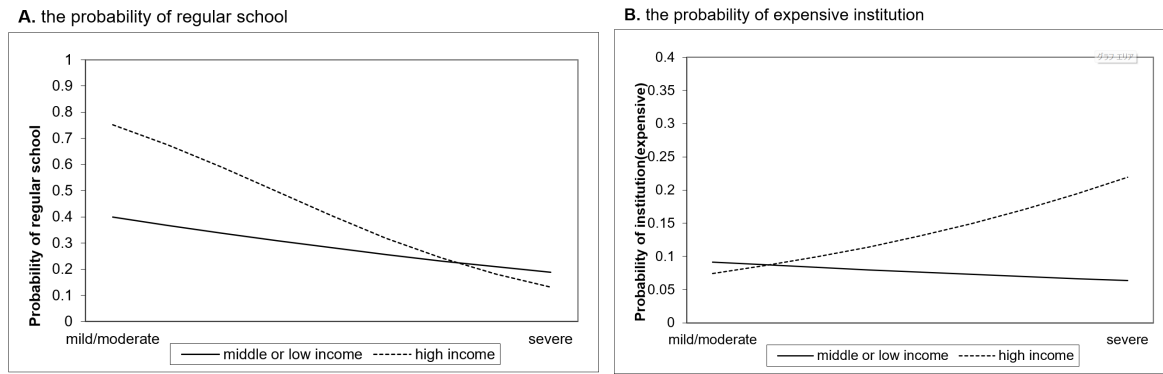
Figure 3. Predicted probability of regular school (A) and expensive institutions (B) by severity of ASD and household income.

4. Discussion

This study revealed the socioeconomic differences in the educational placement of ASD children in China. This was the first study to investigate potential socioeconomic disparities within Chinese families and explore variations in educational placement among children with different severity levels of ASD, providing new insights to the field. A total of 48.26% of children have entered regular school, while 29.86% have entered institutions, with a relatively low proportion entering special schools (13.88%) and being their homes (7.99%). Similar to previous research (*23,24*), this study found that the majority of the mild ASD group were placed in regular school. Including children with special education needs in mainstream classrooms was found to benefit their academic and social skills, as well as their well-being (*25,26*). However, inclusive education was seen as challenging since educational systems usually emerged from highly particular circumstances, both in terms of practice and policy, making each one distinct in its operation (*27*). Systems of inclusive education were often integrated into frameworks for both special education and mainstream education in a country.

This research highlights the presence of SES disparities in educational placements, which manifest in two ways. Prior research has mostly concentrated on one type of disparities, which is that attending regular schools is positively related with family SES (*12,28-31*). In this study, however, we differentiated the influences in two directions. For children with mild or moderate symptoms, regular schools were more accessible for those with high family SES. Conversely, for children with severe symptoms, expensive institutions were favored over regular schools for those with high family SES. No significant relationships were observed between SES and parental placement preferences (see Supplemental Table S2, *http://www.biosciencetrends. com/action/getSupplementalData.php?ID=186*). Most Chinese parents would like their child to attend a regular school, but we did find clear differences in parental SES and their educational placement. Previous studies found

that parents of children with disabilities valued inclusive forms more than special schools (*11,32*). But individual outcomes may vary as the population is notably heterogeneous. From the perspective of parents' choices, it may be that regular school is a better arrangement for children with mild symptoms.

For children with severe symptoms, however, inclusive education is not a priority for families with high SES in China. The child's developmental level was considered to be a critical factor for successful engagement in inclusive settings by parents, teachers, and clinical practitioners (*9,33*). The demands of students perform well on academic tests may affect the school's quality for students with ASD (*34,35*). As children with mild or moderate severity appeared to do equally well across settings, whilst those with severe ASD made smaller gains in inclusive settings (*36*). Our study found that among those enrolled in regular schools, the majority of children with severe symptoms had a higher proportion of poor academic performance (see Supplemental Table S3, *http://www.biosciencetrends. com/action/getSupplementalData.php?ID=186*). This indicated that the regular schools are unable to meet these students' educational needs. Previous studies showed that the positive relationship between regular schools and higher parental higher education levels only occurred in mildly disabled children (*12*). Actually, parents' high SES might influence not the inclusive education decision, instead they would choose a more suitable institution for their children. High quality restrictive placements had many advantages, including access to distraction-free environments, specialized curriculum, behavioral supports, which were rarely realized in regular settings (*6,37*) and drove privileged families to pursue these placements. Similar with previous research (*6,38*), children with severe ASD symptom were more likely to be in a less-inclusive placement in China. This mainly due to the relatively average quality and limited quantity of special education in China (*39-41*).

From a supply perspective, regional resources affect the placement of children. In this study, children in the central or western were more likely to stay at home and

had less access to special schools, which might be related to insufficient local educational resources. Most studies have come to a conclusion that inclusive education was more frequently created in areas inhabited by more affluent people who have achieved higher levels of education (*28*), similar to our study. It was worth noting that rehabilitation resources were unevenly distributed in China (*21*). The resources distribution within a country affects health output and China's insufficient allocation of resources to the central and western regions may result in unfairness. These findings underscored the fact that older children with ASD in China were more likely to attend special schools and regular school than the younger groups, similar findings from previous studies for special school (*24*) and regular school (*42*). Although research have shown that children in their homes perform equally to or better than their conventionally educated peers (*18*), more than 70% of children in our sample with home placement received less than 2 hours a day of training at home.

What the government provides is not always the best, but the government's supply model often determines many things, especially for the poor. Parents with higher SES have more resources with which to implement their preferences and make it easier for them to meet expensive rehabilitation needs (*43,44*). Families with lower SES lacked the resources for sustained advocacy for less restrictive placements and expensive institutions (*28,45*). Improving the accessibility and quality of inclusive education, providing more high-quality special education institutions, may be the solution to the problem. What's more, simply discussing placement is not enough. Current inclusion practices might not benefit all children equally (*9,46-47*). The mere physical integration of autistic children in mainstream classrooms is widely considered insufficient for a successful educational experience (*25,48*), but that does not mean that the solution is to place them in a segregated placement. It must move toward ensuring students with ASD are served in inclusive, general education classrooms, where they can access academic instruction, meaningful interactions and relationships with peers, and supplementary aids and services (*49-51*).

It is critical to provide inclusive education in mainstream schools. Especially given that ASD symptoms are not binary, but rather a continuous continuum, there are still a large number of youngsters who have not been identified with autistic symptoms. However, the creation of inclusive education is a complicated process that may necessitate incremental progress. For example, many students with ASD and a normal intelligence quotient (IQ) but impaired social skills are not eligible for LRC plan in China (*52*). ASD should be considered as an independent special needs education category in order to address these practical issues. The research findings are important for the development of the concept of equity in inclusive education, as well as for helping policymakers focus on more vulnerable people.

There are limitations of this study. First, the data were only relevant to China. In countries with longer and more deeply developed inclusive education traditions, school systems may differ. Second, data on placement were based on parent-reported historical information. There is always the possibility that parents do not remember information accurately, or that they have misinformation about placement and services. Third, there is a need for a more comprehensive analysis of inclusivity. It is important to explore the extent to which children and adolescents with ASD are included in regular schools, whether on a full-time or part-time basis. Further research should aim to deepen our understanding of inclusivity in this context. Fourth, this study focuses on primary school samples, but it is crucial to acknowledge that there may be significant differences in educational facilities for older children. Therefore, future research should include a detailed analysis of educational placement in secondary schools.

In conclusion, this research revealed two socioeconomic disparities in the placement of children with ASD. For severe cases, high SES families tend to choose expensive institutions, while low SES families may opt for special schools or home-based education. For mild to moderate cases, low SES families have less access to regular schools compared to high SES families. To promote equal access to educational services for all families of children with ASD, it is crucial to enhance the availability of inclusive schools or classes, increase the number of high-quality special schools or institutions. Furthermore, future research should focus on strengthening the education of children with ASD, seeking placement facilities and educational intervention methods that are more suitable for children with different symptoms.

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