

An Analysis of Factors Affecting Parents' Choice of a Junior High School

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Abstract

This research explored factors that affect parents' choice of junior high schools and was based on a questionnaire survey. A total of 380 questionnaire copies were distributed, with 342 valid returns. A factor analysis based on the returned questionnaires was conducted using Statistica 8.0 software and a response surface regression analysis was carried out. The outcome and conclusion were established based on literature review and questionnaire analysis. This research found a high positive correlation in educational environment, educational philosophy, campus and facilities, curricular activities, school specialties, location and transportation, educational environment, campus and facilities, curricular activities, school specialties, and location and transportation. The research's conclusion is that in regards to management, an emphasis on student moral values and daily discipline, good reputation, a safe and effective educational environment, and school specialties are the most important factors that will motivate students to attend certain schools within their district. The outcome of this research can serve as a reference for school faculty, teachers, and parents.

Keywords: factor analysis, educational environment, educational philosophy, campus and facilities, curricular activities, school specialties, location and transportation

1. Introduction

1.1 Background and Motives

Cheng, Y. L. (2004) found that Taiwan has the world's sharpest fertility decline with the annual population of newborns decreasing steadily. This low birthrate will have an impact on the demand and supply of Taiwan's education market. According to 2011 statistics by the Department of Statistics, Ministry of Education, in 2022, the number of students enrolling in the first year of junior high schools will only be 174,787 and the total number of junior high students will amount to 563,940, a decrease of 309,280, compared with 873,220 in 2011. The Ministry of Education (2006b) has decided to cut class sizes to buffer the impact of low fertility and improve education quality. For example, class sizes in elementary and junior high school schools have been reduced to 29 and 33 students, respectively.

Taiwan's compulsory education system adopts a neighborhood school attendance plan, called the school district plan, where students are assigned to a designated neighborhood school based on where their residence is registered (Hsu, M. C., 2006). Under the plan, the enrollment of students can be easily predicted, however, in recent years, many schools island-wide have seen a drop in student enrollment. In addition to the low fertility rate, also at play is parents' increased tendency to seek what they think are the best schools for their children and send them to schools out of the district if necessary. This trend will lead to a shortfall in enrollment and overstaffing of schools that will eventually place pressure on schools to transform or merge (Siao, J. C., Dong, S. Y., & Huang, Z. S.,2009) .

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The shortfall in enrollment has forced schools to review their competitive advantages, update their management practices, develop specialties, and improve education quality to attract parents and become a preferred option.

1.2 Objectives

This research used a questionnaire survey to determine the factors that affect parents' choice of a junior high school. This research is aimed at:

1. analyzing factors affecting parents' choice of schools;
2. discussing how various factors at play influence parents' choice of schools; and
3. providing a reference for school leaders based on the research's outcomes and conclusions.

2. Literature Review and Hypothesis

This research divided relevant factors into six groups: educational environment, educational philosophy, campus and facilities, curricular activities, school specialties, location and transportation. The hypotheses were developed based on the literature reviewed.

2.1 Educational Environment

In 1994, a report by the OECD found that in the UK, labor-class parents preferred a curriculum design that stresses both intellectual and non-intellectual developments and gave more attention to the impact of the school environment on children. Wu, B.T. (2003) and Lin, T. Y. (2009) found that by re-creating the value of school education, a school could develop its specialties and that by integrating and applying the existing facilities, manpower, and community resources in an effective way, the school could create a sound educational environment that would impress parents and the school faculty. Moreover, they discovered that the educational environment of the school could help the school and community create a close bond. These scholars found that among the schools' environmental factors, parents prioritized the safety of the campus, the community to which the school belongs, and whether the school is a new one or not. Parents' consideration of a good learning environment could serve as a reference for schools that intend to make improvements.

Based on the review, hypothesis one (H1) was developed.

H1: There is a high positive correlation between the school's educational environment and parents' choice of a junior high school.

2.2 Educational philosophy

This factor includes the school principal's philosophy of education, school culture and tradition, schools' advantages and styles, other features that make the school stand out (Chang, S. S., 2006). A school's educational philosophy is reflected in the school's administration and leadership, curricular development, teaching modes, student learning outcomes, environment, professional core values, culture and its relationship with its neighbors. A school's good performance in this category can help enhance its administrative efficiency and teachers' professional development (Wu, T. S., 1997). Based on the review, hypothesis two (H2) was developed.

H2: There is a high positive correlation between the school's educational philosophy and parents' choice of a junior high school.

2.3 Campus and facilities

A study by Chen, J. S. (2007) indicated that a school's efficient use of facilities, and outdoor landscaping were important considerations when parents chose schools for their children. Other factors considered included campus security, small class size, status of the school's surrounding neighborhood, and effective management. To provide students with a good learning environment, schools should make improvements that allow students to study in a safe and healthy environment so that parents can feel that they will be safe. A research by Wu, C. C. (2004) stated that the design of learning areas should take account the students' development needs, provide convenient spaces that will help students to learn. Also, space should be used effectively, building plans should be mapped carefully, and teaching activities should cater to students' needs and progress. Teacher-student interactions should be emphasized and it is important that every student feels that they are respected.

H3: There is a high positive correlation between campus facilities and parents' choice of a junior high school.

2.4 Curricular Activities

Barneston (1997) pointed that as parents relied on word-of-mouth information when deciding where to send their children, schools should take advantage of advertising tools and adopt corresponding marketing strategies to impress potential students and their parents as well as other influencers. In 1994, an OECD report found that parents in a specialized profession and middle class parents paid more attention to a school's academic prestige and whether the school could help improve students' academic performance. Maddaus (1990) summed up the impact of parental education choice articles pointed out that the impact of parents' educational choices: school teaching quality, school climate, student achievement, the size of the school, the parents of the school's participation, the implementation of extra-curricular activities, school facilities, whether campus security, school regions in which the characteristics of the school's students, the level of tuition fees in schools, after-school care and counseling school religious property, family members or friends studying in the school and the children their preferences, where the quality of teaching in schools, parental choice of schools most frequently mentioned factors. Aughinbaugh and Gittleman (2003) put forward that students' learning performance is important consideration for parental choice of schools. Based on the review, hypothesis four (H4) was developed.

H4: There is a high positive correlation between a school's curricular activities and parents' choice of a junior high school.

2.5 School Specialties

A study by Wu Ming-qing (2008) indicated that factors at campus, including relationships between teachers and students, teacher quality, school organization, school hierarchy management, parents' participation, and campus culture, are key in developing school specialties. A combination of teacher devotion, student participation, and a school's systematic and planned operation helps to make the school outstanding and create school's specialties.

Lin, T. Y. (2009) suggested that school specialties could be divided into dynamic and static categories as well as feature several inputs, processes, and outputs to create a very complex feature. Specialties include static factors, such as learning environment, materials, environment and facilities, as well as static elements, such as administration, teaching activities, and learning activities. Inputs include administrative management, teacher quality, student programs, curriculum design, as well as school environment and resources. Processes include campus and facilities, curriculum development, teachers' professional development, teaching and guidance, teacher and student interactions, the school's interaction with the community. Outputs include administrative efficiency, teaching outcomes, learning outcomes, and school culture. Whether it is static, dynamic, input, process, or output, the purpose of schools developing specialties is to improve student learning outcomes and to promote the school. Based on the review, hypothesis five (H5) was developed.

H5: There is a high positive correlation between school specialties and parents' choice of a junior high school.

2.6 Location and Transportation

Elliott (1982) interviewed a sample of parents with middle school children and asked them to provide reasons for their school choice. The most cited reason was school-home distance. Funkhouser and other researchers (1994), under the auspices of the U.S. Department of Education, telephone-interviewed education superiors in Minnesota's eighty-four school districts and asked the reasons why parents chose their school. They found that the main consideration was the travel distance between home and school. Carroll's model suggests that the more time a student can spend on school work, the more he can learn and the stronger his willingness to learn. Students attending a school out of their district spend more time on commuting and therefore have less time for learning. Therefore studying in a school outside the district could have negative impact on studying. Krueger's study (200) also showed that transport accessibility was the top consideration for parents when they chose schools for children. Based on the review, hypothesis six (H6) was developed.

H6: There is a high positive correlation between the school's location and transportation modes and parents' choice of a junior high school.

3. Research Design and Methods

3.1 Time and Scope of the Survey

The subjects studied were sampled in June 2012. In the regard to appropriateness, this research surveyed parents of sixth graders in five elementary schools in Chushang Township. The reason for sampling parents of sixth graders was that their children were about to enter a junior high school and that they had to choose a junior high school for them.

3.2 Questionnaire Design

The questionnaire had two parts. The first part was to identify the factors that influenced parents' school choice. It had a Likert five-point scale and choice questions. Respondents were asked to evaluate each statement as strongly agree, agree, neither agree nor disagree, disagree, strongly disagree, which scored 5, 4, 3, 2, and 1 respectively. The six statements addressed educational environment, educational philosophy, campus and facilities, curricular activities, school specialties, and location and transportation. Twelve were on the first statement, eight on the second, nine on the third, eight on the fourth and fifth each, and two on the sixth. The second part asked personal information of the parents, including gender, age, profession, educational background, monthly income, whether children are sent to schools in or out of the district, whether parents changed their residence to another school district, and parent-child relationship.

4. Research Results

4.1 Reliability Analysis

According to Nunnally (1978), a reliability score of 0.7 indicated relatively high reliability. Cuieford (1976) also considered a Cronbach's α of 0.7 or higher to signify that the responses were highly reliable. As all factors in this study scored higher than 0.7, the set was reliable and stable and internal consistency was high.

4.2 Factor Analysis

The first half of the questionnaire contained forty-seven questions. After carrying out the main factor analysis with orthogonal rotation, the reserved eigenvalue is larger than 1 and factor loading is larger than 0.5. Therefore, the related items should be included into the new factors and six factors were extracted. The eigenvalue of the first factor, educational environment, was 22.80, proportion of variance explained was 48.50%, and Cronbach's α was 0.926. The eigenvalue of the second factor, educational philosophy, was 2.18, proportion of variance explained was 53.14%, and Cronbach's α was 0.883. The eigenvalue of the third factor, campus and facilities, was 2.12, proportion of variance explained was 57.65%, and Cronbach's α was 0.877. The eigenvalue of the fourth factor, curricular activities, was 1.51, proportion of variance explained was 60.86%, and Cronbach's α was 0.893. The eigenvalue of the fifth factor, school specialties, was 1.24, proportion of variance explained was 63.50%, and Cronbach's α was 0.886. The eigenvalue of the sixth factor, location and transportation, was 1.22, proportion of variance explained was 66.10%, and Cronbach's α was 0.770.

Table 1: Factors and variables

Factor	Variables	Factor Loading	Engin value	The accumulated interpretation variation amounts	Cronbach's α value
Educational Environment	Our school is a fully-equipped teaching center.	0.715	22.80	48.50%	0.926
	The campus is nice and neat.	0.685			
	Students have comfortable learning environment.	0.685			
	School environment is designed creatively.	0.684			
	The school equipments are brand new.	0.674			
	Professional classrooms are sufficient.	0.642			
	There are abundant resources in school library.	0.630			
	It is well-known among neighborhood and elementary faculties.	0.597			
	The school and community have a perfect interaction..	0.588			
School deals with students' problem with positive and friendly approach.	0.538				
Educational philosophy	The principle is a visionary leader with capability in organization.	0.764	2.18	53.14%	0.883
	The principle is daring in innovation and revolution.	0.747			
	(We) recognize principle's educational concept..	0.719			
	The principle highly values students' multiple development.	0.710			
	The principle thinks highly of students' character education.	0.701			
	The principle pays much attention to the corporation among teachers and parents.	0.700			
	The principle recognize teachers' profession in teaching.	0.656			

Table 1: Factors and variables

Factor	Variables	Factor Loading	Engin value	The accumulated interpretation variation amounts	Cronbach's α value
Campus and facilities	There is no dead corner on campus.	0.732	2.12	57.65%	0.877
	Entry access control is practiced.	0.700			
	Students have good manners and speak decently.	0.693			
	The campus is well-designed in pedestrian and vehicle separated road.	0.655			
	Students behavior are highly-praised in town.	0.648			
	School repairs equipments regularly.	0.621			
	Traffic near campus meets the requirement of children's safety.	0.554			
	Students' appearance are modest.	0.547			
Curricular Activities	Students perform well in athletic competition.	0.735	1.51	60.86%	0.893
	Educational summer and winter programs are individually held during vacations and breaks.	0.689			
	Students' performance are outstanding in competition of arts.	0.658			
	It is convenient for students to join cram schools after school.	0.648			
	Foreign teachers will be invited to help students study English.	0.645			
	The proportion of students entering schools is high.	0.630			
	School has won many prizes.	0.534			

Table 1: Factors and variables

Factor	Variables	Factor Loading	Engin value	The accumulated interpretation variation amounts	Cronbach's α value
School Specialties	Students' quality is high.	0.653	1.24	63.50%	0.886
	Students excel in academic activities.	0.620			
	Teachers are dedicated and earnest.	0.602			
	Teachers' teaching courses are assigned according to their specialties.	0.596			
	School can cultivate students' character of optimism and self-confidence.	0.569			
	School can impetus special and normal curriculums during the same time.	0.509			
Location and Transportation	The school is not far away from home.	0.751	1.22	66.10%	0.770
	It is convenient for parents to pick up children.	0.751			

4.3 Response surface methodology

Vadde, Syrotiuk and Montgomery's study (2006) showed that the response surface methodology can help to explain the interaction between factors and cross multiplied coefficients can be used to determine the impact of the interaction of the factors. This research adopted a second-order regression model to calculate the response surface mode.

The following is the response surface mode used in this study:

$$\begin{aligned}
 Y = & \beta_0 + \beta_1 F_1 + \beta_{11} F_1^2 + \beta_2 F_2 + \beta_{22} F_2^2 + \beta_3 F_3 + \beta_{33} F_3^2 + \beta_4 F_4 + \beta_{44} F_4^2 \\
 & + \beta_5 F_5 + \beta_{55} F_5^2 + \beta_6 F_6 + \beta_{66} F_6^2 + \beta_{12} F_1 F_2 + \beta_{13} F_1 F_3 + \beta_{14} F_1 F_4 + \beta_{15} F_1 F_5 \\
 & + \beta_{16} F_1 F_6 + \beta_{23} F_2 F_3 + \beta_{24} F_2 F_4 + \beta_{25} F_2 F_5 + \beta_{26} F_2 F_6 + \beta_{34} F_3 F_4 + \beta_{35} F_3 F_5 \\
 & + \beta_{36} F_3 F_6 + \beta_{45} F_4 F_5 + \beta_{46} F_4 F_6 + \beta_{56} F_5 F_6 + \varepsilon_i
 \end{aligned}$$

Y stands

for the junior high school the parents chose. F_1 stands for educational environment; F_2 stands for educational philosophy; F_3 stands for campus and facilities; F_4 stands for curricular activities; F_5 stands for school specialties; and F_6 stands for location and transportation.

4.4 Regression analysis

Based on the analysis of the sampling population, the empirical study's results showed the significant influence of an independent variable and the interaction of each two items on the dependent variable. The Wald statistics value is used to test the significant level of regression coefficient, which is a Chi-Square distribution. The higher the Wald statistics value, the higher the correlation of the impact of the independent variable.

From Table 2, regression analysis of the factors affecting parents' choice of a junior high school shows a correlation between the factors and independent variables.

A high positive correlation was found in "educational environment", "educational philosophy", "campus and facilities", "curricular activities", "school specialties", "location and transportation", "educational environment", "campus and facilities", "curricular activities", "school specialties", and "location and transportation".

The factor, location and transportation, had the highest correlation with parents' choice, meaning that parents cared most about how far the school was away from home and the travel time between home and school. The second consideration was the school's educational environment, which includes the school's ability to communicate with students and deal with problems, the school's reputation and place in the community, quality of the facilities, comfortable learning setting, cleanliness of the campus, sufficient class space for specialized subjects and a well-rounded school library.

Among the factors considered by parents, educational philosophy weighed less as time spent researching schools increased. The study results showed that educational philosophy has a lower positive correlation. This meant that in the early stages of decision making, parents would identify with the school principal's educational philosophy, planning, organization, leadership, innovation, and innovativeness, think highly of the teachers' professionalism, the school's stress on students' well-rounded development, level of teacher and parent cooperation, and moral education. But after a while, the parents would find that these ideals were impractical and likely to cause a negative impact by unnecessarily pressuring students.

When either of the two independent variables were considered, a high negative correlation could be found. Take educational philosophy and curricular activities for example. Although curricular activities and educational philosophy had a positive impact on parents' choice, the combination of the two factors could be a negative influence. This can be interpreted to signify that an idealized system and normalized teaching could lead parents to worry that students might become less competitive and vulnerable to stress.

In the analysis of the interaction of two independent variables, educational environment and location and transportation was the set that respondents cared most about, which meant that parents were concerned about the impact of the school environment on their children and how convenient it was to transport them between school and home.

Table 2: Results of the regression analysis

	β -value	Standard Error	Wald. Stat	P-value
Educational Environment	1.492	0.083	320.718	0.00*
Educational Environment ^2	0.810	0.080	100.388	0.00*
Educational philosophy	0.860	0.157	29.665	0.00*
Educational philosophy ^2	0.027	0.084	0.106	0.744
Campus and facilities	1.158	0.151	58.619	0.00*
Campus and facilities ^2	0.429	0.083	26.381	0.00*
Curricular Activities	1.143	0.141	65.263	0.00*
Curricular Activities ^2	0.453	0.079	32.545	0.00*
School Specialties	0.417	0.131	10.157	0.00*
School Specialties ^2	0.413	0.095	18.639	0.00*
Location and Transportation	2.522	0.108	540.010	0.00*
Location and Transportation ^2	0.840	0.063	175.988	0.00*
Educational Environment * Educational philosophy	0.223	0.107	4.342	0.037
Educational Environment * Campus and facilities	0.678	0.081	69.650	0.00*
Educational philosophy * Campus and facilities	0.511	0.108	22.051	0.00*
Educational Environment * Curricular Activities	0.363	0.066	30.257	0.00*
Educational philosophy * Curricular Activities	-0.401	0.130	9.426	0.00*
Campus and facilities * Curricular Activities	0.464	0.081	32.135	0.00*
Educational Environment * School Specialties	0.549	0.094	33.552	0.00*
Educational philosophy * School Specialties	0.284	0.119	5.653	0.017
Campus and facilities * School Specialties	0.336	0.090	13.874	0.00*
Curricular Activities * School Specialties	0.580	0.102	31.961	0.00*
Educational Environment * Location and Transportation	0.591	0.059	99.033	0.00*
Educational philosophy * Location and Transportation	0.765	0.106	51.314	0.00*
Campus and facilities * Location and Transportation	0.643	0.108	35.171	0.00*
Curricular Activities * Location and Transportation	0.455	0.088	26.731	0.00*
School Specialties * Location and Transportation	0.668	0.079	70.261	0.00*
Pearson Chi-Square	32574334			
Chi-Square	342			
Likelihood	-2446			

P<0.05*

5. Conclusion and Suggestions

5.1 Conclusion

The goal of this research was to discuss the impact of educational environment, educational philosophy, campus and facilities, curricular activities, school specialties, location and transportation on parents' choice of a junior high school. Conclusions were made based on the research analysis and suggestions are made to serve as a reference for future research.

Table 3 Hypothesis Testing

Hypothesis	Result
H1: There is a high positive correlation between the school's educational environment and parents' choice of a junior high school.	Sustained
H2: There is a high positive correlation between the school's educational philosophy and parents' choice of a junior high school.	Partially sustained
H3: There is a high positive correlation between campus facilities and parents' choice of a junior high school.	Sustained
H4: There is a high positive correlation between a school's curricular activities and parents' choice of a junior high school.	Sustained
H5: There is a high positive correlation between school specialties and parents' choice of a junior high school.	Sustained
H6: There is a high positive correlation between the school's location and transportation modes and parents' choice of a junior high school.	Sustained

Regarding the first factor, the original variable had a high positive correlation and the post-threshold quadratic term also showed a high positive correlation. This means that there was a high positive correlation between parents' school choice and the first factor, educational environment.

The original variable in the second factor, educational philosophy, had a high positive correlation and the post-threshold quadratic term also showed a low positive correlation. This means that there was a partly positive correlation between parents' school choice and the second factor. The fact that parent do send their children to prestigious schools out of their district allows us to infer that a school with a good reputation would boost parents' willingness to choose that school for children. But if the school fell short of parents' expectations, the parents would be not be that willing to do so. Therefore we can deduce that parents were most concerned about a school's educational philosophy. For them, an ideal school would stress students' principles and academic performance. In the workplace, companies would put an employee's attitude ahead of his capabilities. Hence, education should help students form a good mindset and schools should promote moral education, student principles, and build good school spirit.

As to the third factor, campus and facilities, the original variable had a high positive correlation and the post-threshold quadratic term also showed a high positive correlation. This means that there was a high positive correlation between it and parents' school choice. As parents were concerned about learning environment, it was important for schools to provide a safe and well-equipped place where children can learn and grow up happily.

In regards to the fourth factor, curricular activities, the original variable had a high positive correlation and the post-threshold quadratic term also showed a high positive correlation. This means that there was a high positive correlation between it and parent's school choice. Junior high school is a period when one learns more about his interests, aptitude, and abilities, and develops social skills. It is a time when academic development is no longer the only purpose for attending school. Students have to choose a track that suits their needs and interests.

As to the fifth factor, school specialties, the original variable had a high positive correlation and the post-threshold quadratic term also showed a high positive correlation. This means that there was a high positive correlation between it and parents' school choice. The study found that parents who sent children to schools in the school district were more concerned about convenience than those who sent children out of the district. Therefore, schools should strive to develop specialties, build a good reputation, and promote themselves in order to gain identification and loyalty from parents so that they can have students from their district.

As families are having fewer children and parents are paying more attention to children's education, parents are more concerned about a school's prestige and its students' academic performance. Compounded by student bullying on the increase, moral education and school management practices are a focus of concern for parents who hope to see their children study and grow up happily. Therefore, building and maintaining a good reputation and promoting moral principles is something a school should strive for.

As to the sixth factor, location and transportation, the original variable had a high positive correlation and the post-threshold quadratic term also showed a high positive correlation. This means that there was a high positive correlation between it and parents' school choice. To send children to so-called "star schools", parents were willing to sacrifice convenience and thus waste time, energy, and money. After considering the other factors listed above, parents started to think about the possibility of sending children to a neighborhood school to save travel time and, ultimately, help improve their children's academic performance.

5.2 Suggestions

5.2.2 Suggestions for school administrative staff

1. Stressing moral education and behavior will help to build good school spirit.

Teaching students the right thing to do is teaching them how to deal with issues and treat people. When the students understand that doing the right thing will do them good, they will be more willing to do it. This is the purpose of creating good class spirit. When the classes have good spirit, the school will naturally have good spirit.

2. A safe and excellent educational environment enables children to learn effectively and grow up happily.

The ability to learn is a key to survival. By learning the subjects at school, children can acquire skills, develop self-confidence, find joy in learning, control their own lives, and move towards their goals.

3. Schools should develop specialties that motivate students to stay in the school district.

Acquiring knowledge and skills is one of the most important things students do in school. A good teacher will help students to develop their aptitudes. Whether it is a junior high school or an elementary school, a good teacher is more important than a good school district in any way. Good teachers mean good school districts.

5.2.2 Suggestions for teachers

1. Positive interactions between teachers and parents can help improve teachers' professional expertise.

Teachers should know that, in addition to teaching skills and knowledge, spending time communicating with students' parents not only helps to understand the students' background but also makes it easier to treat the students.

2. Quality teaching and effective management

Only with devoted teachers can a school provide a quality education. A strong identification among students would enhance students' loyalty to the class and form a sense of pride.

5.2.3 Suggestions for parents

The considerations that parents take into account are varied and complicated and can be influenced by people, time, and space. But since it is their children that study in the school, parents should pick a school that best suits them, instead of a school that meets the expectations of parents. This is truly for the benefit of the children.

5.2.4 Suggestions for future researchers

A. Methodology

As this research adopted a questionnaire survey method instead of in-depth interviews, parents' comments on the questionnaire's choices could not be obtained, making it impossible to discuss individual circumstances. More in-depth discussions are suggested in order to gather more data for qualitative studies in order to form a better picture of the potential factors that impact parents' school choice and to improve the generalization of the research results.

B. Subjects

Due to time and financial constraints, this research only took account of parents of sixth graders in five elementary schools in Chushang Township and therefore could not cover a larger parent population. It is suggested that the scope of future research should expand to more areas. Furthermore, as when choosing a school for children, parents nowadays tend to seek and respect the opinions of their children. Therefore, it is suggested that children should be studied as subjects in future research to make the results more comprehensive.

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