

Original Research Article

Belief about birth order and their reflection in academic performance: a cross sectional study

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ABSTRACT

Background: Alfred Adler in 1964 stated that different position in a family, birth order may be correlated to both positive and negative life outcomes. Children in the same family are different from each other in academic achievement and the effects of birth order one child/s educational achievement has been studied. The objective was to evaluate the relationship between birth order and their reflection in academic performance.

Methods: The study design was a cross-sectional survey where data collected by a self-administered online questionnaire to gather information about students bio data, birth order, gender, age, siblings size, parents education and income. A total of 92 online questionnaire were distributed to the participants (34 male and 53 female). Out of which 88 participants were submitted the response. All answered data were anonymous and recommended. Data were entered in excel and descriptive statistics were performed using SPSS software version 25.

Results: The result showed that the birth order in family was more than 44.85% were first born, 11.96% participants were middle born, 31.03% of the participants had effect on child behaviour with birth order on educational settings. 28.57% of the participants showed that sibling role is related to academic success in life.

Conclusions: There was a little significance gained from the response rate of the participants which showed that there was a relationship between birth order and academic performance. The controversy of birth order effect on academics may vary among countries, family size and different cultures.

Keywords: Birth order, Academic performance, Sibling's size

INTRODUCTION

Birth order theory was developed by Alfred Adler in 1964 stated that different position in a family, birth order may be correlated to both positive and negative life outcomes. For example, researchers have noted that first born children have an increased susceptibility to both drug use as well as positive educational outcomes as per Laird et al 2006.¹ Alfred Alder thought that the child who were born first were more privileged in the family and they may feel burdened when next child arrived in the family, Likewise middle child may get the same extra attention in the

family and make repeated attempts to do than their younger ones.²

Later born children have to share the available time and research with their siblings for a larger part of their childhood than earlier born children.³ Some researcher have shown that first born children were better at a lot of things than their younger siblings, that was why researchers interestingly wanted to know if one's academic performance can be predicted by looking at his or her ordinal position, if it was largely influenced by familial intellectual resources.⁴ While the first-born child can enjoy undiluted parental resources until a sibling

arrives, later born have to share from the very start thus receiving less support for their intellectual development. This was thought to lead a decrease intelligence by birth order position Black 1981.⁵

It was seen that children in the same family were different from each other in academic achievement and the effects of birth order on a child's educational achievement had been studied in the field of sociology, psychology and economics. Some studies revealed that later born children attained higher educational level.⁶ The results of this study also provided parents with additional techniques for child rearing, with specific focus in the area of academic motivation.⁷ Groose (2000) noted that the position of a child in a family was a powerful predictor of personality and academic achievement and it was a factor that parents and teachers needed to consider as they looked for ways to raise happy and well-adjusted children.⁸ First born were privileged, later born over indulged by their parents to lack social empathy.⁹ Intelligence can be defined as the mental abilities necessary to effectively adjust to ones environment as well as to effectively shape and select ones environment by Sternberg, 1997.¹⁰

Besides that, there was limited literature available studying the association between birth order and academic performance. Hence the present study was conducted with the aim to investigate the association between academic performance, birth order such as sibling size, parental education, parents' job and gender.

METHODS

This cross sectional study was done among undergraduate dental students attending the college of dentistry in Chennai, India. Over the span of three months, this study was carried out in dental colleges during the year of 2021. Prior to the start of the study, ethical approval was taken from institutional review board, Asan memorial dental college and hospital. This study investigated the relationship of birth order and academic performance among the students. The keywords used in searching the databases were birth order, psychological birth order, academic performance.

Sample size was manually calculated using the formula,

$$\text{Sample size} = Z \frac{\alpha^2}{I^2}$$

Obtained sample size was 92. A data sheet was prepared which contained demographic information of the student birth order, personality and academic performance. Data were collected by self-administered questionnaires which were developed by the authors after reviewing previous articles. All the students of the third and fourth professional years studying dentistry were included in this study. However, the goal was to include all the students in the college of dentistry studying third and fourth years which included 100 male and female students.

Students did not want to participate as well as first, second and trainees of internship program were excluded from the research by this required information. This survey was created to include the birth order, family size, socioeconomic status and gender. Then the self-administered questionnaires were distributed to the participants at the start of the classes, labs and clinical sessions and were collected at the end of those sessions. All answered data were anonymous and recommended.

Statistical analysis

Data were entered in excel and descriptive statistics were performed using SPSS software version 25.

RESULTS

There were a total of 92 students. Total 88 students were in the age group of 18-25 years (45.65%). 36.96% were male while 57.61% were female. Female students were more in number. 4 students were excluded which was not filled the questionnaires or participants did not complete the questionnaires. The baseline characteristic for all the participants are shown in the Table 1.

There were total 92 students who completed the questionnaires in which 36.96% were male while 57.61% were female students as shown in the Table 1 and Figure 1. The parents' education varied between mothers and fathers whereas fathers who gained education than bachelor degree formed 26.09% of the total sample size. Mothers formed 47.83% of this level of education. Father who gained bachelor degree were 50% compared to 32.61% of the mother. Father who had master's degree were 18.48% compared to 14.13% of the mother as shown in the Table 1.

The percentage of employed fathers were 42.39% working full time, 46.74% retired, 4.35% compared to 11.96% of the father were self-employed. 23.91% working, 56.52% home maker, 2.17 % were retired. It is substantial to control confounding factors like the socioeconomic status which is represented by parent's education, parents' occupation of the father and mother. More than 88.64% of the participants had siblings as shown in the Table 1.

The study results showed the birth order in family was more than 44.83% were first born, 11.96 participants were middle born as shown in the Table 2. The result showed that most of the participants stated that 31.03% had effect on child behaviour in educational settings with birth order. 44.83% of the participants had no impact on child behaviour with birth order in educational settings as shown in the Table 3.

The result showed that 53.57% of the students had no impact with birth order on their growing period. 27.38% had impact on their growing period while 18.05% of the participants stated that birth order had impact on their

growing period sometimes as shown in the Table 4. The result showed that 50% of the students had revealed that there is no relation between sibling role and academic success in college. While 28.57% had impact on sibling's role with academic performance, while 21.43% stated sometimes there is a relationship between sibling role and academic performance as shown in the Table 5 and Figure 1.

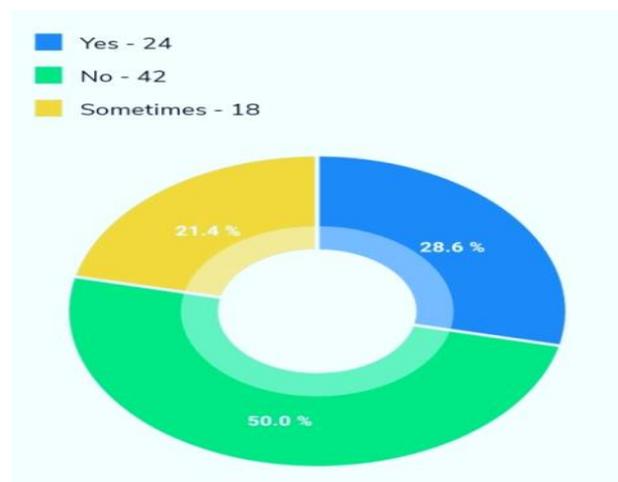


Figure 1: Relation between siblings' size and academic performance.

The result showed that 64.7% of the participants had showed that gender role had no influence on their academic in college where 23.53% of the participants stated that they had impact on academic performance. While 11.76% stated that there is significant relationship between academic and gender role sometimes as shown in the Table 6. The result showed that 42.39% of the participants stated none of the factor had no influence on their academic, while 25% stated all the reasons, 16.30% revealed parent's income, 3.26% had equal response rate

Table 1: The demographic characteristics of the participants.

Variables	N	%	
Gender	Male	34	38.6
	Female	53	60.2
	Prefer not to say	1	1.1
Parents educational level (father)	Secondary education	24	27.6
	Bachelor's degree	46	52.9
	Master's degree	17	19.6
Parents educational level (mother)	Secondary education	44	50.6
	Bachelor's degree	30	34.5
	Master's degree	13	14.9
Parents employment status (father)	Self employed	39	50
	Working	43	45.3
	Retired	4	4.7
Parents employment status (mother)	Self employed	11	12.6
	Working	22	25.3
	Home maker	52	59.6
	Retired	2	0.3

Continued.

for both age and gender as shown in the Table 7 and Figure 2.

The result showed that 37.44% participants revealed sometimes that there is relationship between procrastination with birth order, 48.15% of the participants denied, 14.81% accepted the fact as shown in the Table 8. The result showed that 37.44% of the participants felt loved and cared out for each other needs, 17.39% of the participants revealed that family did not look out for each other needs, 10.87% respondents chose no one in their family loved them as shown in the Figure 3.

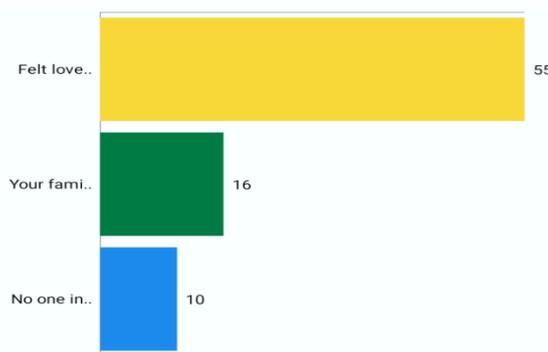


Figure 3: While your growing up did you ever felt?

The result showed that 66.30% had opinion of overcoming this stereotype by giving equal parental attention (0%), having a good bond with siblings (6.52%), (7.61%) educating the parents about child mentality as shown in the Table 9 and Figure 4.

In this study, there was a little significance gained from the response rate of the participants which showed that there is a relationship between academic performance and birth order.

Variables	N	%	
Siblings	Yes	78	88.6
	No	10	11.3

Table 2: Birth order of the family.

Variables	N	%
First born	44	47.83
Second born	11	11.96
Last born	0	0
No answer	37	40.22

Table 3: Birth order effect on child behaviour in educational settings.

Variables	N	%
Yes	27	31.03
No	39	44.83
Sometimes	21	24.14

Table 4: Birth order impact on growing period.

Variables	N	%
Yes	23	27.83
No	45	53.57
Sometimes	16	19.05

Table 5: Relationship between sibling role and academic success in college.

Variables	N	%
Yes	24	28.57
No	42	50
Sometimes	18	21.43

Table 6: Relationship between gender role and academic performance.

Variables	N	%
Yes	20	23.53
No	55	64.71
Sometimes	10	11.76

Table 7: Birth order influence on academic success.

Variables	N	%
Sibling size	0	0
Gender	3	3.26
Age	3	3.26
Parents income	15	16.30
Above all	23	25
None	39	42.39
No answer	9	9.78

Table 8: Relationship between procrastination with birth order.

Variables	N	%
Yes	12	14.81
No	39	48.15
Sometimes	30	37.04

Table 9: Opinion about how to overcome this stereotype.

Variables	N	%
Giving equal parental attention	0	0
Having a good bond with siblings	6	6.52
Educating the parents about child's mentality	7	7.61
Above all	61	66.30
No answer	18	19.57

DISCUSSION

This study was conducted to examine the effect of birth order on academic performance. This study was unique as the subjects were third and final years. The total population of respondents were 92. Out of which 47.83% were first born, 11.96% were middle born and there was no last born category. Furthermore studies taking into account family influences are recommended especially in undertaking the complexities of family relationships and motivation with regards to education, study done by Horner et al 2012.¹ There was a positive correlation between birth order and academic performance. In a study from Gomal university from Pakistan found that males were significantly better than females at different level of birth order study done by Khan et al 2019.²

However our study provided information about that females were significant better results than males due to minimum sample size. Despite this in variation males, females in this study showed fewer variation among groups. However other studies results showed no influence of birth order on academic performance. The middle born participants seemed to have academic credentials compared to other birth groups possible explanation was that male participants tried to get more attention by working hard and proving as best. Similarly other studies from developing countries found that first born child perform less compared to later born child. This was probably due to high family sizes, study done by Abdullah et al.⁶

The academic performance of students according to their birth order were converted to classification, the frequency of students from varying birth order revealed that from first born students had developing/approaching proficiency whereas last born had developing/approaching proficiency advance grade classification.⁸ Within family designs provide severe advantages as those each child is presumed to grow up with same economic background, family size, parental IQS and other factors. There was implicit variation where

there was addiction of new born into a family and elicit different relations from older younger children who were already a part of family.¹⁰

As we knew, the family was sufficiently valuable to societal force that extra familial influences must be controlled before social differentiation was observed within families there effects recur mainly in greater sibling size.¹¹ Despite the commonly held stereotype about only children being maladjusted and socially undesirable they actually fare as well as other adolescents during the developmental stage, study done by Chen et al.¹² The results here suggested that we can break these stereotypes by giving equal parental attention, having a good bond with siblings, educating the parents about child mentality.

The benefits of family resources on academic outcomes also promoted first born and can be extended to late born with decrement. The decreasing benefits were shown from later born from medium to large families like lower educational expectation, reducing, parental nurturing. Furthermore, the nature of relationship between siblings was an important as there was said that when the older sibling provided support and emotionally nurturing younger ages, a more friendly relationship and had no impact of birth order as compared to other scenario.¹³

As we were in an era of compulsory education that appealed to social justice, there were extensive achievement which was not simplistic and direct, there was large room for schools, families to take action in removing there influencing factors and improving children academic performance.¹⁴ These results and explanation were not meant to argue that birth order inevitably had an impact on academic success of students, because those who were capable of getting academic credentials against all odds were also to be considered. One of the greatest lessons was pattern differ healthy by context.¹⁵ In this study the birth order and its effect on academic success was not uniformly positive or negative, rather there were important outcomes. But the results

instead speak of divertly and possible way to overcome those beliefs about birth order.

CONCLUSION

There was a little significance gained from the response rate of the participants which showed that there was a relationship between birth order and academic performance. The controversy of birth order effect on academics may vary among countries, family size and different cultures. We conclude that more attention should be given to research design and methods used to address birth order effects on academic performance. The result of the study should be taken with caution due to limited diversity of sample.

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