# The Pharma Innovation

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# Influence of demographic characteristics on sibling relationship of singletons

## Madhumati K Mantur and Sunanda ITAGI

**Abstract**
Research on "Influence of demographic characteristics on sibling relationship of singletons." was conducted during 2016 at UAS Dharwad. Sibling Relationship Checklist was used to assess sibling relationship for a sample of 78 singletons (Brothers, sisters or brother-sister) from the Hubli and Dharwad cities. Snow ball sampling method was used to select respondents with age ranged 10 to 24 years. The demographic characteristics include personal, parental and familial characteristics. The study revealed that age was not significantly correlated with their sibling relationship. Education has no association as well as relation with sibling relationship of singletons. There was significant association as well as relationship was found between first borns and later borns. Indicating that first borns had healthy sibling relationship than later borns. Family size was significantly correlated with sibling relationship of singletons. Indicating that large family size stimulates higher sibling relationship among singletons. Parental education, occupation and socio-economic status were not much influencing the sibling relationship.

**Keywords:** Sibling relationship, singletons

## Introduction
A close relationship with sibling is something to value. Sibling relationship has a unique contribution to make our understandings of family relationships as a whole. Socio-emotional development includes the child's experience, expression and management of emotions and the ability to establish positive and rewarding relationships with others. The nature and importance of sibling relationships vary for individuals, depending on their own circumstances and developmental stage.

Sibling relationships are natural contexts for learning about the world of motions. As involuntary and permanent relationships, children have absolutely no choice in selecting their sisters and brothers and cannot end these relationships even if they wanted to. Sibling relationships are resistant to dissolution in the face of conflict (As friendships are), thereby making those relatively safe and convenient contexts for learning about diverse social and emotional experiences (Heller and Kramer, 2009) [1].

Over 80 per cent of the world's population has a sibling. The sibling relationship begins at birth and ends at death and throughout their lifetime siblings have a powerful presence in each other's lives (Rutter and Redshaw, 2001) [2]. This relationship is the long lasting relationship in most people's lives and because of this it is unique in many ways as children, siblings' form a child's first peer group and they typically spend more time with each other than with anyone else. Children learn social skills, particularly in sharing and managing conflict, from negotiating with brothers and sisters. Sibling relationships can provide a significant source of continuity throughout a child's lifetime and are likely to be the longest relationships that most people experience (Foy *et al.*, 2001) [3].

Thus, the present study was conducted to explore the knowledge regarding "Influence of Demographic Characteristics on Sibling Relationship of Singletons" with the following objectives
1. To assess the sibling relationship of singletons
2. To know the relationship between personal, parental and familial characteristics with sibling relationship.

## Concept and definitions
### A. Sibling relationship
* Sibling relationship is one of the most enduring relationships during an individual's life

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- Span, starting at birth and continuing until death (Noller, 2005) [4].
- Sibling warmth reflects positive aspects of the relationship, such as intimacy, affection, support, companionship and closeness whereas sibling conflict consists of negative aspects such as arguing, bickering, fighting, aggression, hostility, negativity and coercion (Sanders, 2004) [5].

**B. Singleton:** A child not associated with a multiple birth pattern and one baby delivered at a time.

**Material and Methods**
The study on "Influence of Demographic Characteristics on Sibling Relationship of Singletons" was conducted during 2016-17 in UAS, Dharwad campus. The sample 78 singletons (Brothers, sisters or brother-sister of a same family) from Hubli and Dharwad cities. The respondent's age ranged from 10 to 24 years. Unmarried singletons were selected for assessing sibling relationship.
A snow ball sampling method was used for the selection of unmarried twins for the study (Snowball sampling method is non random sampling method in which the individuals selected to be studied recruit new participants from among their circle of acquaintances). The respondent's age ranged from 10 to 24 years. The self structured schedule was used to gather personal information like education, ordinal position, parental education and occupation. Socio-economic status of their family was assessed by SES scale developed by Agarwal *et al.*

**Sibling relationship checklist (SRC)**
The checklist developed by Lord and Borthwicks (2008) [8] was used. The checklist can be used for observing and describing in concrete terms how siblings relate to each other. It was recommended that it be used in conjunction with other sibling assessment. Checklists first and second of the SRC contain a series of 13 specific questions numbered A-M. Questions A-I represent positive behaviors (e.g. Defends and protects the sibling) and questions J-M represent negative behaviors (e.g. shows hostility or aggression). It is a three point likert scale (1= always, 2=sometimes true and 3=never). The total score ranges from 13 to 39. The classification of total scores according to dimensions like healthy and unhealthy sibling relationship was given as follows.

**Table:** Type of scores

| Dimensions Scores | Scores |
|---|---|
| Healthy relationship | 13-26 |
| Unhealthy relationship | 27-39 |

**Note:** low score indicate high sibling relation

**Socio-economic status scale (SES)**
The SES scale developed by Agarwal *et al.* (2005) [7], consists of 22 which assess caste, education, occupation and monthly income from all sources, type of house and location, family possessions and possessions of earning members in the family, number of children and possessions of agriculture and non-agriculture land along with animals and social status of the family. The scores were given for the different dimensions and added to obtain total score. The SES has been classified as mentioned below

**Table:** Type of score

| Status | Total score |
|---|---|
| Upper high | >76 |
| High | 61-75 |
| Upper middle | 46-60 |
| Lower middle | 31-45 |
| Poor middle | 16-30 |
| Very poor | <15 |

**Methods of statistical analysis**
The data was analyzed by using fallowing statistical tools (Agarwal, 2006) [6].

a) **Frequency and percentage** were calculated to interpret the demographic characteristics of twins and singletons and their socio-emotional behavior problems, sibling relationship and nutritional status

b) **'t' test** was used to compare between two groups with help of formula

$$'t' = \frac{|X1 - X2|}{\sqrt{Sp^2 (1/n1 + 1/n2)}}$$

Where,

$$Sp^2 = \frac{\{(n1-1) S1^2 + (n2-1) S2^2\}}{(n1 + n2 - 2)}$$

Where,
X1 = Mean of the first group
X2 = Mean of the second group
n1 = No. of observations in the first group
n2 = No. of observations in the second group
S1² = Variance of first group
S2² = Variance of second group
Sp² = Pooled variance of two groups

c) **Karl Pearson's product moment correlation coefficient** was used to assess the relationship between socio-emotional behavior and sibling relationship with dependent variables like age, education, ordinal position, family size, parent's education and occupation, socio-economic status.

$$r = \frac{n\,Sxy - SxSy}{\sqrt{\{nSx2 - (Sx)\,2\}\,\{(nSy2 - (Sy)\,2)\}}}$$

Where,
r = simple correlation coefficient
x = Independent variable
y = Dependent variable
Sx = Sum of 'x' values
Sy = Sum of 'y' values
Sx2 = Sum of squares of 'x' values
Sy2 = Sum of squares of 'y' values
Sxy = Sum of product of 'xy' values
n = Number of pairs of observations

d) **Chi square**: A non-parametric test was applied to determine the association between sibling relationship/ socio-emotional behavior problems and independent variables such as age, education, ordinal position,

parent's education/occupation, size of family and socio-economic status. Wherever the frequency was less than five using the formula by Lawal and Upton (1984) test of independence was applied to determine the association between dependent and independent variables using the formula:

Modified $\chi^2 = [1\text{-}L/N\ (1\text{-}d\ \frac{1}{2})] \times \chi^2\ d,\ 0.5$ at 5% level

Where,
$\chi^2$ (0.05) = table (2 value at 'd' degrees of freedom for 5 per cent level of significance.
n = sample size.

$$\chi^2 = \Sigma\Sigma \frac{\overset{r}{\underset{i=1}{}} \overset{c}{\underset{j=1}{}} (O_{ij} - C_{ij})^2}{e_{ij}}$$

Where,
Oi = Observed frequency
Ei = Expected frequency

The $\chi^2$ value was compared with table value for (r-1) (c-1) degree of freedom, r denoting no of rows and c denoting no of columns in contingency table.

## Results

**Table 1:** Personal characteristics

| Sl. No | Characteristics | Singletons (n=78) |
|---|---|---|
| 1 | Gender | |
| | Male | 30 (38.46) |
| | Female | 48 (61.54) |
| 2 | Age (years) | |
| | Late childhood (10-12 yrs) | 25 (32.05) |
| | Adolescents (13- 18 yrs) | 37 (47.43) |
| | Young adulthood (19-24 yrs) | 16 (20.51) |
| 3 | Ordinal position | |
| | First born | 29 (37.17) |
| | Later born | 49 (62.82) |
| 4 | Education | |
| | Professional qualification of with technical degrees or diplomas | 3 (3.84) |
| | Post graduation (Non technical incl. Ph.D.) | - |
| | Graduation (B.A, B.com, B.Sc.) | 13 (16.65) |
| | 10th class pass but < graduation | 18 (23.08) |
| | Primary pass but < 10th | 44 (56.43) |
| | < primary but attended school for at least one | - |
| | Just literate but no schooling | - |
| | Illiterate | - |

Figure in parenthesis indicate percentage

The personal characteristics of the singletons included gender, age, ordinal position and education are presented in Table 1. Totally 61.54 per cent were females and 38.46 per cent were males in the study. With respect to age, 47.43 per cent of them belonged to adolescents group followed by 32.05 per cent to late childhood and 20.51 per cent to young adulthood. Totally 48.09 per cent, 30.12 per cent and 21.79 per cent were belonged to adolescents, late childhood and young adulthood group respectively. With regard to ordinal position, There were 62.82 per cent were later borns and 37.17 per cent were first borns in singletons.

In case of respondent's education, majority of them were (56.43%) completed high school level of education, followed by 23.08 per cent were completed PUC, 16.65 per cent were graduated and 3.84 per cent of them were completed their professional degree. In total sample majority (56.42%) of respondents were completed their high school level of education fallowed by 21.79 per cent were in below graduation, 17.31 per cent were graduated and only 4.48 per cent of them were professionally qualified.

**Table 2:** Parental and familial characteristics

| Sl. No | Characteristics | Singletons (n=39) |
|---|---|---|
| **1** | **Father's education** | |
| | Professional qualification of with technical degrees or diplomas | 2 (5.13) |
| | Post graduation (Non technical incl. Ph.D) | - |
| | Graduation (B.A, B.com, BSc) | 19 (48.71) |
| | 10th class pass but < graduation | 8 (20.51) |
| | Primary pass but < 10th | 10 (25.64) |
| | < primary but attended school for at least one year | - |
| | Just literate but no schooling | - |
| | Illiterate | - |
| **2** | **Mother's education** | |
| | Professional qualification of with technical degrees or diplomas | - |
| | Post graduation (non technical incl. Ph.D) | - |
| | Graduation (B.A, B.com etc.) | 8 (20.53) |
| | 10th class pass but < graduation | 9 (23.07) |
| | Primary pass but < 10th | 22 (56.40) |
| | < primary but attended school for at least one year | - |
| | Just literate but no schooling | - |

| | | | |
|---|---|---|---|
| | | Illiterate | - |
| 3 | | **Father's occupation** | |
| | | Service in central/state/public undertaking company > 20 persons or self employed professionals | 6 (15.39) |
| | | Service in private sector or independent business | - |
| | | Service at shops, home, transport, own cultivation of land | 10 (25.64) |
| | | Self employed eg, shops, or pretty business with income > 5000 | 23 (58.97) |
| | | Self employed with income < 5000 (laborer) | - |
| | | None of the family member is employed | - |
| 4 | | **Mother's occupation** | |
| | | Service in central/state/public undertaking company > 20 persons or self employed professionals | 7 (17.94) |
| | | Service in private sector or independent business | - |
| | | Service at shops, home, transport, own cultivation of land | 6 (15.38) |
| | | Self employed eg, shops, or pretty business with income > 5000 | 2 (5.15) |
| | | Self employed with income < 5000 (laborer, house wife) | 24 (61.53) |
| | | None of the family member is employed | - |
| 5 | | **Caste** | |
| | | Upper caste | 11 (28.20) |
| | | OBC | 19 (48.73) |
| | | Dalits | 9 (23.07) |
| | | Tribals | - |
| 6 | | **Type of family** | |
| | | Nuclear family | 34 (87.17) |
| | | Joint family | 5 (12.82) |
| 7 | | **Size of family** | |
| | | Small ≤ 4 | 15 (38.46) |
| | | Large ≥ 5 | 24 (61.54) |

Figure in parenthesis indicate percentage

Results related to distribution of singletons according to parental and familial characteristics are presented in Table 2. With respect to father's education, it was found that 48.71 per cent of the their fathers were degree holders followed by 25.64 per cent were high school level, 20.51 per cent were in below degree and 5.13 were completed professional degree. With respect to mother's education, more than half (56.40%) of their mothers were possessed high school level of education, followed by 23.07 per cent were completed PUC and 20.53 per cent were possessed degrees. When father's occupation was taken into account it was found that 58.97 per cent of them were self-employed, 25.64 per cent were having their service in private sector like shops and transport and remaining of them (15.39%) involved in central or state government service. With regard to mother's occupation 61.53 per cent of their mothers were housewives followed by 17.94 per cent were involved in central/state government service, 15.38 per cent were working in private sector/business and only 5.15 were self employed.
With respect to caste 48.73 per cent of families were belonged

to OBC category, 28.20 per cent found having upper caste and 23.07 per cent were in dalits category. While 12.82 per cent of singletons were belonged joint family structure. In case of size of family, more than half of them (61.54%) were having large family size fallowed by small family size (38.46%).

**Table 3:** Socio-economic status

| Categories | Singletons (n=39) |
|---|---|
| Upper high | - |
| High | 5 (12.82) |
| Upper middle | 16 (41.03) |
| Lower middle | 18 (46.15) |
| Poor middle | - |
| Very poor | - |

Figure in parenthesis indicates percentage

With respect to socioeconomic status of the family, it was found that 46.15 per cent were in lower middle class followed by 41.03 per cent were in upper middle class and 12.82 per cent were in high socio-economic status.

**Table 4:** Relationship of age with sibling relationship of singleton (N=78)

| Age | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
|---|---|---|---|---|---|
| | Healthy | Unhealthy | | | |
| 10- 12 years | 20 (76.90) | 6 (23.10) | 26 (100.0) | | |
| 13-18 years | 25 (69.40) | 11 (30.60) | 36 (100.0) | 0.94[NS] | 0.08[NS] |
| 19-24 years | 13 (81.20) | 3 (18.80) | 16 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant

**Table 5:** Relationship of education with sibling relationship of singletons (N=78)

| Education | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
|---|---|---|---|---|---|
| | Healthy | Unhealthy | | | |
| Primary | 20 (76.90) | 6 (23.10) | 26 (100.0) | | |
| Above primary | 14 (77.80) | 4 (22.20) | 18 (100.0) | | |
| Above 10th class and < Graduation | 11 (64.10) | 7 (38.90) | 18 (100.0) | 2.26[NS] | 0.04[NS] |
| Graduation and above | 13 (81.20) | 3 (18.80) | 16 (100.0) | | |

Figure in parenthesis indicate percentage
NS - Non-significant

**Table 6:** Relationship of ordinal position with sibling relationship of singletons (N=78)

| Ordinal position | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| First born | 25 (86.20) | 4 (13.80) | 29 (100.0) | 4.26* | 0.24* |
| Later born | 33 (67.40) | 16 (32.60) | 49 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant
* - Significant at.05 level

The relationship of age with sibling relationship of singletons is presented in the table 4. Majority of them (69.40 to 81.20%) were having healthy relationship and very few (18.40 to 30.60%) of them were having unhealthy relationship in the age group of 10 to 24 years, however there was no significant association but negative significant correlation was observed siblings. The relationship of education with sibling relationship in both twins and singletons is presented in Table 5. In all the levels of education majority of them (64.10 to 81.20%) showed healthy sibling relationship and 18.80 to 39.80 per cent of them had unhealthy sibling relationship. There was no association and relation was observed between education level and sibling relationship of singletons.

Table 6 depicts the relationship of ordinal position with sibling relationship of twins and singletons. It was interesting to note that, among singletons, majority of first borns were having (86.20%) healthy relationship fallowed by healthy relationship (13.80%). Among second borns, 67.40 per cent and 32.60 per cent had healthy and unhealthy sibling relationship respectively. There was significant association as well as relationship was found between first borns and later borns. Indicating that first borns had healthy sibling relationship than later borns.

**Table 7:** Relationship of family size with sibling relationship of singletons (N=78)

| Family size | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| Small | 19 (63.30) | 11 (36.70) | 30 (100.0) | 3.11$^{NS}$ | -0.20* |
| Large | 39 (81.20) | 9 (18.80) | 48 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant
* - Significant at.05 level

**Table 8:** Relationship of father's education with sibling relationship of singletons (N=78)

| Father's education | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| Primary | 4 (66.70) | 2 (33.30) | 6 (100.0) | 1.82$^{NS}$ | 0.16$^{NS}$ |
| Above primary | 11 (78.60) | 3 (21.40) | 14 (100.0) | | |
| Above 10th class and < Graduation | 12 (75.0) | 4 (25.0) | 16 (100.0) | | |
| Graduation and above | 31 (73.80) | 11 (26.20) | 42 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant

**Table 9:** Relationship of mother's education with sibling relationship of singletons (N=78)

| Mother's education | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| Primary | 9 (75.0) | 3 (25.00) | 12 (100.0) | 2.46$^{NS}$ | 0.04$^{NS}$ |
| Above primary | 26 (81.20) | 6 (18.80) | 32 (100.0) | | |
| Above 10th class and < Graduation | 11 (61.10) | 7 (38.90) | 18 (100.0) | | |
| Graduation and above | 12 (75.00) | 4 (25.00) | 16 (100.0) | | |

**Table 10:** Relationship of father's occupation with sibling relationship of singletons (N=78)

| Father's occupation | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| Service in central/ state/public | 9 (90.0) | 1 (10.0) | 10 (100.0) | 1.82$^{NS}$ | 0.06$^{NS}$ |
| Service in private or shop, home, transport, own cultivation | 22 (68.80) | 10 (31.20) | 32 (100.0) | | |
| Self employed | 27 (75.0) | 9 (25.0) | 36 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant,

**Table 11:** Relationship of mother's occupation with sibling relationship of singletons (N=156)

| Mother's occupation | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
| --- | --- | --- | --- | --- | --- |
| | Healthy | Unhealthy | | | |
| Service in central/ state/public | 11 (78.60) | 3 (21.40) | 14 (100.0) | 3.14$^{NS}$ | 0.09$^{NS}$ |
| Service in private or shop, home, transport, own cultivation | 7 (58.30) | 5 (41.70) | 12 (100.0) | | |
| Self employed | 4 (100.0) | - | 4 (100.0) | | |
| Housewives | 36 (75.0) | 12 (25.0) | 48 (100.0) | | |

**Table 12:** Relationship of socioeconomic status (SES) with sibling relationship of singletons (N=156)

| SES | Sibling relationship | | Total | Modified $\chi^2$ | r-value |
|---|---|---|---|---|---|
| | Healthy | Unhealthy | | | |
| High | 8 (80.0) | 2 (20.0) | 10 (100.0) | | |
| Upper middle | 19 (63.30) | 11 (36.70) | 30 (100.0) | 3.94[NS] | 0.12[NS] |
| Lower middle | 31 (81.60) | 7 (18.40) | 38 (100.0) | | |

Figure in parenthesis indicates percentages
NS - Non-significant

Table 7 indicated the relationship of family size with sibling relationship of singletons 63.30 per cent and 36.70 per cent of them from small family had healthy and unhealthy relationship respectively. Similarly singletons from large family, 81.20 per cent and 18.80 per cent of them from had healthy and unhealthy sibling relationship respectively. There was significant non-association was found, however there was negatively significant relationship was found. Indicating that large family size stimulated healthy sibling relationship among singletons.

An examination of Table 8 illustrated the relationship between father's education and sibling relationship singletons, 66 to 78.60 per cent of them in healthy sibling relationship and 21.40 to 33.30 per cent in unhealthy sibling relationship. There was no association as well as relation between father's educations and sibling relationship of singletons. The values in the Table 9 depicted the relationship mother's education with relationship of singletons. In all the levels of mother education 75 to 81.20 per cent of them were in healthy sibling relationship and 10 to 31.20 per cent of them were had unhealthy sibling relationship. Hence there was no association and relation between mother's educations and sibling relationship of singletons.

The relationship of father's occupation with sibling relationship of singletons is depicted in Table 10. It was noted that, irrespective of father's occupation 75 to 90 per cent singletons had healthy sibling relationship and 10 to 31.20 per cent of them in unhealthy sibling relationship in all the categories of father's occupation. Hence there was no association and relation between father's occupation and sibling relationship of singletons. Table 11 indicated the mother's occupation with sibling relationship of singletons, 58.30 to 100 per cent of them had healthy sibling relationship and 21.40 to 41.70 per cent unhealthy sibling relationship. Hence there was no association and relation was found. An examination of Table 12 showed that relationship between socio-economic status of the family with sibling relationship of singletons. Irrespective of socio-economic status majority of the singletons (63.30 to 81.60%) possessed healthy sibling relationship followed by 18.40 to 20 per cent had unhealthy sibling relationship. There was no association and relation was observed between socio-economic status of the family and sibling relationship of singletons.

**Discussion**
Age was not significantly correlated with sibling relationship of singletons (Table 4). Indicating the age does not influence on sibling relationship, it may be due to their independent development, environment, choices *etc*. Neyar (2002) [9] reported that non-twins siblings are usually of different ages, they exposed to different environments (e.g. class, friends and career) that may effects there sibling relationship. It was observed that, non-significant association and relationship of

education with sibling relationship of singletons (Table 5). Even though different education levels are noted among singletons sibling relationship almost remains stable. And there was dearth of the research studies.

There was significant association and relation found between ordinal position sibling relationship of singletons (Table 6). It was observed that first borns had more sibling relationship than the later borns. Tucker *et al.* (2001) [10] noted that older siblings are more likely to serve as sources of advice and care givers for their younger siblings. It was interesting to note that, there was highly negatively significant relationship observed with family size and sibling relationship of twins, indicating that large size family helped to possess healthy sibling relationship (Table 7). Siblings were more comfortable with parents in small size family, on the other hand singleton from large family tends to take more responsibility, often caring for younger brothers and sisters. Buhrmester and Furman (2000) [11] have shown that siblings in large families with four or more children were perceived as more nurturing and caring to one another.

Findings showed that there was no significant association and relation between father's and mother's education with sibling relationship (Table 8 and 9). It might be due to the fact that in all the levels of father's and mother's education most of the respondents were in healthy sibling relationship. With regard to father's and mother's occupation, there was non-significant association as well as relation was found (Table 10 and 11). Since most of the father's in the selected sample are working private sector/ business and most of the mother's are housewives and very few of them are working in government sector. Not much variation was observed in distribution of sample with regard to parent occupation. Findings on the factor of socio-economic status revealed non-significant association between SES and sibling relationship of singletons (Table 12). Buist *et al.* (2013) [12] observed that SES did not significantly associate with sibling relationship quality.

**Conclusion**
As per the study we can conclude that, among singletons age was not significantly correlated with their sibling relationship. Education has no association as well as relation with sibling relationship of singletons. There was significant association as well as relationship was found between first borns and later borns. Indicating that first borns had healthy sibling relationship than later borns. Family size was significantly correlated with sibling relationship of singletons. Indicating that large family size stimulates higher sibling relationship among singletons. Parental education, occupation and socio-economic status was not associated and correlated with sibling relationship.
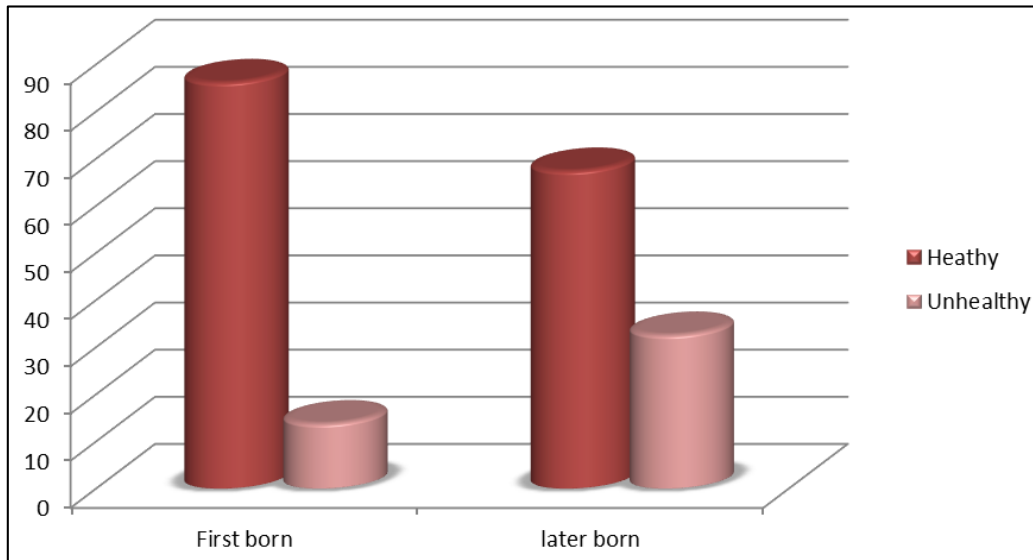
**Charts**

**Fig 1:** Distribution of ordinal position of singletons by dimensions of sibling relationship
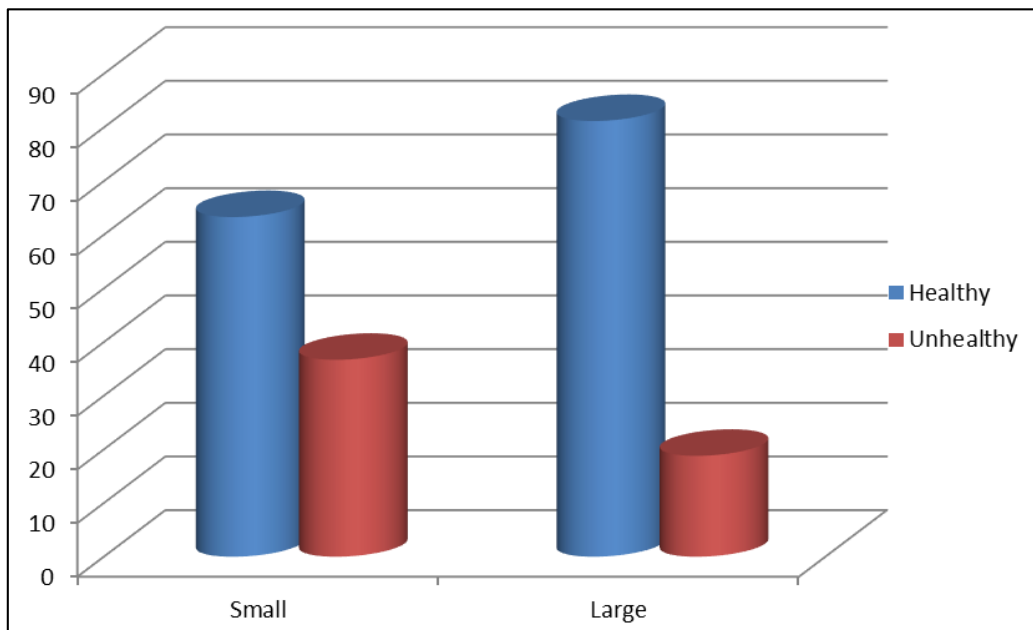


**Fig 2:** Distribution of family size of singletons by dimensions of sibling relationship

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