CHAPTER II

REVIEW OF LITERATURE

This chapter strives to examine the inter-relationships among the variables of the present investigation by tracing the related theoretical and empirical studies. In the present endeavour, an attempt has been made to unfold the effect of Family size and Birth order on Intelligence, Mental Health Conditions, Parent-Child Relationship, and Career Choice Patterns, thereby facilitating the formulation of hypotheses.

2.1 INTELLIGENCE

Intelligence, family size and birth order:

There are direct studies on the variables - family size, birth order and intelligence; and there are indirect studies as well, academic achievement being a significant predictor of intelligence.

Shuey (1951) carried out a study on The American Council Psychological Examination for College Freshmen, and the scores of 2261 students indicated, according to direct calculation, significant differences in the mean scores in favor of students with smaller numbers of siblings. However, after excluding the records of those whose older sisters had attended Randolph-Macon College, the differences in the means were not significant. Presumably somewhat lower entrance requirements had been applied to those whose siblings had already matriculated. The authors conclude that on the basis of this study there is no evidence of a significant relationship between intelligence and family size among American college students of good or superior intelligence and socio-economic standing.

Dandes and Dow (1969) carried out a study to determine if a relationship existed between intelligence and an index of family size and density. Subjects were 184 students from multiple-child families enrolled in grades 1 through 7 in the campus school of a state college. It was predicted that there would be negative correlation coefficients between the FSD index and the measures of intelligence. All
coefficients were in the predicted direction and were statistically significant. The larger and more closely spaced the family, the lower the tested intelligence of the children.

Belmont and Marolla (1973) studied the relation of birth order and family size with intellectual performance. It was measured by the Raven Progressive Matrices, and was examined among nearly all of 400,000 19-year-old males born in the Netherlands in 1944 through 1947. It was found that birth order and family size had independent effects on intellectual performance. Effects of family size were not present in all social classes, but effects of birth order were consistent across social class. They concluded that first-borns always scored better on the Raven’s Standard Progressive Matrices than did later-borns.

Bahr and Leigh (1978) studied the relationships between family size, intelligence, and expected education were examined. The zero-order correlations were negative as expected. However, after other relevant variables were controlled, family size had a negligible association with intelligence and expected education. Apparently, existing research which shows that children from large families are less intelligent than children from small families has resulted from inadequate controls for other relevant variables. The strongest and most consistent predictor of intelligence was educational encouragement, while the best predictors of expected education were educational encouragement and intelligence.

Velandia, Grandon, and Page (1978) conducted a study on a sample of over 36,000 college applicants of Colombia and their test scores, family information, and socioeconomic data were analyzed. The intellectual effects of family size were not at all the classic pattern: All family sizes smaller than six surpassed a single child family, arguing that differences were popualtional, rather than intra-familial. Further analysis showed almost no family-size effect for the lower socioeconomic group among the college applicants, and birth order effects were not constant across family sizes, and not in conformity with the model.
Velandia, Grandon, and Page (1978) conducted a study in which the confluence theory, which hypothesizes a relationship between intellectual development birth order, and family size, was examined in a Colombian study of more than 36,000 college applicants. The mental age of the parents is always assigned a value of 30 and siblings are given scores equivalent to their chronological age at the birth of the subject. Therefore, the average mental age of family members for a 1st born child is 30, or 60 divided by 2. If a subject is born into a family consisting of 2 parents and a 6-year old sibling, the average mental age of family members tends, therefore, to decrease with each birth order. The hypothesis derived from the confluence theory states that there is a positive relationship between average mental age of a subject's family and the subject's performance on intelligence tests. In the Colombian study, data on family size, birth order and socioeconomic status was derived from college application forms. Intelligence test scores for each subject was obtained from college entrance exams. The mental age of each applicant's family at the time of the applicant's birth was calculated. Multiple correlation analysis and path analysis were used to assess the relationship. Results were 1) the test scores of subjects from families with 2, 3, 4, and 5 children were higher than test scores of the 1st born subjects; 2) the rank order of intelligence by family size was 3, 4, 5, 2, 6, 1 instead of the hypothesized 1, 2, 3, 4, 5, 6; and 3) only 1% of the variability in test scores was explained by the variables of birth order and family size. Further analysis indicated that socioeconomic status was a far more powerful explanatory variable than family size.

Baskett (1985) had 278 participants complete three 50-item, 7-point adjective checklists. The checklists asked them “to describe what they would expect a child without brothers or sisters, a child who was the oldest in his or her family, and a child who was the youngest in his or her family to be like” (p. 442). The lists included the following items: academic, adjusted, adventurous, agreeable, altruistic, cooperative, creative, doesn’t seek attention, dominant, easily disciplined, extroverted, flexible, good peer relations, happy, hard- working, helping, high achiever, independent, intelligent, leader, likeable, neat, not demanding, no jealous, not prone to anger, not self-centered, not spoiled, obedient, organized, outgoing, outspoken, popular, relaxed,
responsible, secure, self-confident, self-critical, sociable, socially skilled, and tough. A factor analysis performed on the ratings yielded eight factors: academic, likeable, not jealous, obedient, outgoing, secure, relaxed, and unspoiled. Post hoc comparisons indicated that only children are the most academic and spoiled and the least likeable. Among other findings, Baskett reported that participants described firstborns in more positive terms than only children or later-borns and that “there was some bias toward one’s own sibling status group” (p. 443).

Falbo and Polit (1986) conducted six meta-analyses summarizing characteristics of 115 studies published between 1925 and 1984 in psychological journals and educational sources comprising of both male and female subjects ranging in age from preschoolers to adults involving contrasts between only children and various comparison groups—first, only children were compared with all non-only children. Additional comparison groups were defined in terms of birth order and family size. Three family size comparison groups were established: small (two-child), medium (three or four-child), and large (five or more child) families. In terms of birth order, only borns were compared with first borns and later borns from multi-child families. The Meta-analyses was conducted on the following topics: achievement, adjustment, character, intelligence, parent-child relationships and sociability. Only borns were found to surpass to all others except first borns and people from two-child families on achievement and intelligence. Across all developmental outcomes, only children were found to be indistinguishable from first borns and people from small families.

Musun-Miller (1993) had 105 parents describe “what they would expect a hypothetical only, oldest, and youngest child to be like . . . [and] to describe their own children” (p. 191). A factor analysis performed on the ratings yielded five factors: academic, likeable, obedient, outgoing, and unspoiled. Post hoc comparisons indicated that (a) only children are the most academic and spoiled and the least likeable; and (b) last-borns are the most likeable and the least academic, obedient, and outgoing. Among other findings, it was also reported that parents gave more positive ratings to firstborns.
Nyman (1995) instructed 139 participants to “list three words that described the characteristics of each birth position” (p. 53). Nyman found that participants described (a) firstborns as achievers, aggressive, ambitious, caring, dominant, independent, leaders, maternal, nurturing, responsible, and thoughtful; (b) only children as independent, self-centered, selfish, and spoiled; (c) middle-borns as achievers, ambitious, caring, friendly, outgoing, and thoughtful; and (d) last-borns as caring, dependent, friendly, outgoing, passive, spoiled, and thoughtful. In addition, Nyman reported that firstborns received the most favorable ratings and that participants ranked their own birth position “in accordance with the ways others viewed that position” (p. 56).

Downey (1995) conducted a study on a sample of 24,599 eighth graders from the 1988 National Education Longitudinal Study. The analyses support the resource dilution model in three ways. First, the availability of parental re-sources decreases as the number of siblings increases, net of controls. The functional form of this relationship is not always linear, however, and de-pends on whether the resource is interpersonal or economic. Second, parental resources explain most or all of the inverse relationship between sibship size and educational outcomes. Finally, interactions between sibship size and parental resources support the dilution model as children benefit less from certain parental resources when they have many versus few siblings.

Rivera and Carrasquillo (1997) in his recent research found that only children appear to have an advantage over children with siblings; research on their sociability has also revealed positive aspects. Also, in an interview conducted with parents and teachers of 10, 4-year-old only-children in a Bronx Head Start program, found that stereotypes against only children are still influencing popular opinion. Teachers viewed only-children as more attention-seeking, more mature and intelligent, and tending to have undeveloped social skills.

Paulhus, Trapnell, and Chen (1999) investigated birth order effects on personality and achievement within families in two separate studies comprising of American and Canadian students. The undergraduates from the university of
California (n=164) and the university of British Columbia students (n=395) were asked to put a circle around the sibling who is the most scholastically achieving within the family. The results revealed that amongst the American students, the first born were achievers and significantly different coming from a sibship size of 2 and 5-8 children whereas amongst the Canadian students, the first borns were achievers and significantly different from the sibship size of 2,3,4, and 5-8 children.

Rodgers et al. (2000) conducted a longitudinal within-family (preferably intact) study on nearly 3000 families participating in the National Longitudinal Survey of Youth and evaluated it. The results were compared with those from other studies using within-family data. The authors concluded that although low-IQ parents have been making large families, large families do not make low-IQ children in modern U.S. society.

Walton (2001) carried out a research to determine whether familial birth order has an effect on intelligence. Forty-nine students (26 freshmen, 12 sophomores, 6 juniors, and 5 seniors) attending Loyola University in New Orleans were administered the Wonderlic Personnel Test (Wonderlic, 1983). Of these forty-nine participants 10 were male and 39 were female. Each participant indicated his/her age, sex, college level, ordinal birth position (firstborn, middle, lastborn, and whether adopted or fostered. The middle born scored slightly higher than the firstborn, but not enough to be statistically significant. The middle born did however; score statistically higher than the lastborn, while the firstborn also scored statistically higher than the lastborn. Findings indicated that birth order was indeed related to individual intelligence.

Herrera, Zajonc, Wieczorkowska, and Cichomski (2003) carried out a study on one hundred six Stanford University undergraduates. 45% of the participants were firstborns, 17 (7%) were only children, 41 (18%) were middle-borns, 68 (29%) were lastborns, and the birth rank of 2 (1%) of the participants was unknown. Thirty-six participants had to be discarded because of missing data, leaving a total of 196. All participants completed four 11-item questionnaires that asked them to rate firstborns, only children, middle-borns, last-borns, and “yourself” on 5-point (2 to –2) scales. These ratings were made with respect to the following dimensions: agreeable—
disagreeable, bold–timid, creative–uncreative, emotional–unemotional, not envious–envious, extraverted–introverted, intelligent– unintelligent, obedient–disobedient, responsible–irresponsible, stable–unstable, and talkative–silent. Participants responded to each item by circling an answer; for example, answers for the question about the agreeable–disagreeable dimension were 2 _ very agreeable, 1 _ moderately agreeable, 0 _ neither, _1 _ moderately disagreeable, and _2 _ very disagreeable. High scale values were always assigned to the positive end of the dimension. The 196 participants rated firstborns, only children, middle-borns, last-borns, and themselves differently on the 11 traits, $F (40, 7760) = 19.57, p < .001$. The results revealed that firstborns were the most intelligent, followed by the only children, middle-borns, and the least intelligent being the last borns.

Wichman (2006) used a data involving nearly 3,000 families who participated in the National Longitudinal Survey of Youth, which is funded primarily by the U.S. Bureau of Labor Statistics. The families in the study were followed over a long period of time. All the children in the study took intelligence tests that measured skill in mathematics, reading recognition and reading comprehension. He concluded that there is no relationship between birth order and intelligence.

Carey (2007) analyzed data on birth order, health status and I.Q. scores of 241,310 18- and 19-year-old men born from 1967 to 1976, using military records. After correcting for factors that may affect scores, including parents’ education level, maternal age at birth and family size, and the researchers found that eldest children scored an average of 103.2, about 3 percent higher than second children (100.3) and 4 percent higher than thirdborns (99.0).

Solomon, Hirsch, Daniel, Scheinfeld and Jackson (2007) investigated the relationships of sex, father absence, family size, and birth order to factor scores representing "general academic achievement" in a sample of 149 urban black ghetto 5th graders. Significant main effects were found for sex (with girls showing higher achievement levels than boys) and family size (with the highest achievement in small families). A significant Birth Order x Family Size interaction was found: Firstborns
did best in small families, lastborns did best in intermediate (4-5 children) families, and there was no birth order differentiation in large families.

Oberlander, Jenkin, Houlihan, and Jackson (2007) tested the hypothesis that there exists a meaningful relationship between birth order, family size, and scholastic aptitude and achievement in 318 8th graders. It was found that (a) 1st-borns were characterized by higher IQ scores than later borns, and (b) family size was not significantly related to any of the measures used in this study. A Birth Order x Family Size interaction was found for a measure of scholastic aptitude and for some measures of scholastic achievement. This interaction was a function of increasing differentiation between 1st- and later borns with increasing family size.

Healey, and Ellis (2007); Paulhus, Trapnell, and Chen (1999); Plowman, (2005); Sulloway (1996, 1999, 2001) in consistent findings of numerous within-family studies (which need to be distinguished methodologically from between-family studies), firstborns are considered the “achievers” of the family. They generally score higher in most aspects of conscientiousness. Firstborns are rated by both parents and siblings as being more self-disciplined, organized, and deliberate than their younger brothers and sisters.

Abdel-Khalek and Lynn (2008) studied the relation between intelligence and family size and birth-order was examined in a sample of 4643, 8–15 years old in Kuwait. There was a correlation of −.05 between intelligence tested with the Standard Progressive Matrices and family size, much smaller than those typically found in a number of studies in the United States and Europe and effectively negligible. There was a slight tendency for first and second born children to have higher IQs than later born but again the effect was negligible. This association was present for children aged 8–10 and for those aged 12–16 years. It is considered that the results are incompatible with the theories of Zajonc and Blake that family size and birth-order have significant effects on IQ, and support the conclusion of Rodgers that family size and birth-order have no significant effects on IQ.

Kirkcaldy, Furnham, and Siefen (2009) conducted a study on a sample of around 2,500 adolescents in a child and adolescent psychiatry clinic in the region of
Münster, Germany. Family size (total number of siblings within a family) was significantly correlated with intelligence score categories (—0.08 and —0.19 for males and females). Results revealed that first borns and only children displayed higher IQs than later borns supportive of the confluence theory of Zajonc. The relationship was found only for those older children (11 or older) and not the under 11-year-olds. The relationship between birth order and intelligence was moderated by gender.

Haan (2010) investigated the effect of family size and birth order on educational attainment. The data sets used in this study were from the Wisconsin Longitudinal Study, which is a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957 and the Brabant survey, which is also a long-term study of a random sample of men and women, who were in the 8th grade in 1952 in the province of Noord-Brabant in the Netherlands. Survey data were collected from the original respondent or their parents in 1957, 1964, 1975, and 1992, and from a selected sibling in 1977 and 1994. All respondents were born around 1939/1940. An instrumental variables approach was used to identify the effect of family size. Instruments for the number of children were twins at last birth and the sex mix of the first two children. The effect of birth order was identified, by examining the relation with years of education for different family sizes separately. No significant effect of family size on educational attainment of the oldest child was found. Birth order had a significant negative effect. Potential mechanisms behind the birth order effects were investigated. The results revealed that birth order effects are not affected by the average age gap between children.

Black, Devereux and Salvanes (2011) used a large dataset on the population of Norway that allows us to precisely measure birth order effects on IQ using both cross-sectional and within-family methods. Importantly, irrespective of method, we find a strong and significant effect of birth order on IQ, and our results suggest that earlier born children have higher IQs. The preferred estimates suggest differences between first-borns and second-borns of about one fifth of a standard deviation or approximately 3 IQ points. Despite these large average effects, birth order only explains about 3% of the within-family variance of IQ. When we control for birth
endowments, the estimated birth order effects increase. Thus, the analysis suggests that birth order effects are not biologically determined. Also, there is no evidence that birth order effects occur because later-born children are more affected by family breakdown.

Carette et al. (2011) compared the ways that first- and second-borns set goals for themselves. Carette and his fellow researchers limited their study to sibs who were closely spaced in age (averaging 2.5 years). When birth order effects are found, they point out, they tend to be present in this narrow span of time. The theory behind this study was that firstborns would set “self-referenced” or mastery goals (ones that they choose for themselves) and second-borns would set “other-referenced” goals or performance goals (wanting to do well on goals set by others). Firstborns, they argue, would strive for mastery, but second borns would want to do well to hit the targets that someone else set for them, i.e. the older sib.

Kanazawa (2012) analyzed data of more than 17,000 people, who took multiple intelligence tests at ages seven, 11, and 16. He controlled several variables, including fertility, social class, and parental educational background. The results revealed that children from larger families, regardless of their birth orders, tend to be less intelligent than kids in smaller households. Birth order is not associated with intelligence once the number of siblings is statistically controlled.

2.2 MENTAL HEALTH CONDITIONS

2.2.1 Depression, Family size, and Birth order

Though the term ‘depression’ is a clinical term, it has been researched upon in almost all spheres widely including psychology. The studies of depression range from mild to severe depression; while the mild and moderate studies focus on the non-clinical patients, the severe depression studies tend to emphasize on clinical patients. Thus, both kinds of studies are included in the following review.

Munro (1966) carried out a study on certain familial, social and demographic factors in depressive illness on a group of 153 in- patients suffering from primary
depressive illness and a matched series of 163 non-psychiatric control individuals were compared by means of data obtained from a standardized interview. The following results were obtained: a) Depressives belong to sibships which are of the same size as the sibships of normal individuals. b) It is shown that moderately severe depressives, but not severe depressives, are significantly more likely than normal to belong to the middle of the sibship and significantly less likely to be the youngest member of the family.

Grosz (1968) conducted a study on the ordinal positions of birth and sibling constellations of 650 psychiatric patients from three sibling families at Royal and Maudsley Hospitals in London. Diagnostically, 213 were suffering from anxiety reactions, 170 from schizophrenia, and 267 from depression. Each patient had only two siblings both of whom were living and were free from a history of mental illness. All patients were sixteen years or older. While no significant differences in the frequency distribution of patients by ordinal position of birth were found among patients given the diagnosis of anxiety reactions or schizophrenia, among the depressive patients the youngest born was relatively under-represented, and the middle and oldest born were relatively over-represented. There were no significant ordinal position differences among depressive patients with either two male or two female siblings. Further analysis showed that the significant ordinal position effect among the depressive patients was almost entirely accounted for by the male and female patients with two differently-sexed sibs (P<.001).

Ndetei and Vadher (1982) Thirty Kenyan patients (15 consecutive first-ever referrals to the out-patient clinic and 15 consecutive first-ever admissions) of black African origin on chemotherapy for clinical depression (uncomplicated by organic or other psychotic illness) in Nairobi and 40 non-psychiatrically disturbed controls (controlled for race, sex and age) living in and around Nairobi were included in this study. Information was obtained from each subject using a structured questionnaire. Results revealed that of the 30 depressed patients, 12 were first-born and 18 were later-born. Contrast this with the 40 non-depressed controls of which only three were
first-born and 34 were later-born. These observations are discussed in the light of their socio-cultural context and compared with related observations in Western settings.

Almeida-Filho and Burnett (1983) carried out a study in which the relationship between family size and child mental disorders was assessed through a prevalence study conducted in an urban neighborhood of Salvador, Brazil. From a representative sample of 828 children aged between 5 and 14 years, 23.3% were diagnosed as exhibiting varying degrees of mental disorders. Results supported the hypotheses that: (1) children from smaller families would exhibit higher prevalence of mental disorders than those from larger families; and (2) prevalence of neurotic and psychosomatic disorders would be lower for children from larger families than from smaller ones. Significant associations were also found between family size and diagnosis and severity of child mental disorders.

Tseng et al. (1988) studied the impact of China's one-child-per-couple family planning policy on child development in the city of Nanjing and in two rural areas surrounding Nanjing. This study of 697 children aged 3-6 in urban, suburban-rural, and remote rural areas in and around Nanjing was designed to determine whether only children developed significantly more behavior problems than did children with siblings. The survey used the Child and Family Questionnaire and a Chinese version of the Achenbach Child Behavior Checklist. The age of the parents ranged from 25-40 years, and 99% of the marriages were not arranged. 60% of the families were nuclear, and 40% were stem, i.e., the married couple lived with either the husband's or the wife's parents. Behavior problems included in the questionnaire were immaturity, regression, schizoid behavior, depression, moodiness, neuroses, and aggression. Single factor and multifactor analyses of variance were used to determine the effects of demographic variables and presence or absence of siblings on behavior problems. Girls who were only children of parents who preferred 2 children scored high for moodiness. In general, the behavior patterns of only children were significantly different only for boys. The behavior problem profiles of children who were their parents' only children and those who had siblings were compared, revealing a significant difference between girls who were only children and those who had...
siblings. Girls who were only children tended to have slightly higher scores on the factors of depression, moody, and temper.

Gates, Lineberger, Crockett, and Hubbard (1988) carried out a study on 404 children ranging from 7-12 years of age, of whom 158 were 1st-born, to disprove Adler's suggestion of the first child being "dethroned," and having associated factors like increased rates of depression, higher needs for affiliation and achievement, and stronger dependency needs. The children were given the Children's Depression Inventory, the State-Trait Anxiety Inventory for Children, and the Piers-Harris Self-Concept Scale. Gates et al believe that their results disprove Adler's sentiment that the second-born child is in a superior position to the first-born child as on the Children's Depression Inventory, the firstborn children (M=9.32) scored significantly lower than second-born (M=12.14), third-born (M=12.24), and youngest children (M=12.15).

Lester and Caffery (1989) reported that birth order was associated with suicidal behavior, with an excess of middle and last borns among the attempted suicides. To explore this further, 77 male and 67 female college students (M age = 22.6 yrs., SD = 5.7) were administered the Beck Depression Inventory (Beck, et al., 1961) along with questions about their siblings. The mean depression score was 5.6 (SD = 5.0). There were 13 only children, 45 with one sibling, 40 with two siblings, 26 with three siblings, and 20 with more than three. The number of siblings was not associated with depression scores (Pearson r = -0.05). For two-children and three children families, birth order was not associated with depression scores (t=0.46, F = 0.35). For those of two children families, having attempted suicide was marginally associated with being second born (p = .07). This analysis yields no associations between depression scores and sib- ship size or birth order for a sample of college students, and there were too few students whose history included attempted suicide (only 6) to provide reliable estimation for this variable.

Yang et al. (1995) examined 202 adolescents born before China implemented its one-child-per-family policy in 1979 in order to control its burgeoning population. In the present study, these presumed effects were examined on 290 preadolescents born during the period in which the policy was being implemented, and 239 children
who were born after the policy went into effect. Measures of fear, anxiety, and depression were obtained. Contrary to the hypotheses, based on concerns raised by the one-child policy, children with siblings reported significantly higher levels of fear, anxiety, and depression than only children, regardless of when they were born. For depression, this effect was qualified by a sibling status x age interaction. Children with siblings born after the policy went into effect, or during its implementation, reported higher levels of depression than did only children; however, only children and children with siblings born before the policy went into effect did not differ significantly from one another. Sociocultural factors associated with these findings were explored.

Tao (1998) reviewed most of the literature and research including three major studies in Shanghai, Changsha and Beijing as well as the authors' studies, including the 4 and 6 year follow-up studies in Nanjing. Most of the research undertaken in the USA and other Western countries and in China challenges the negative view of the only child described as 'selfish', 'lonely' or 'maladjusted'. The results showed no significant differences between the only child and the child with siblings, in terms of the prevalence of behavior problems- internalizing (depression, anxiety, moodiness, etc.) and externalizing except that certain items needed attention. In 4 and 6 year follow-up studies the developmental impact of being an only child or being a child without sibling was found to be different. However, the difference was not at a clinical level, but in behavior patterns or traits which clearly revealed many variables that were 'functional' in nature and related to child rearing. The data from these studies reflected only the comparison between groups of only children versus children with siblings. As individuals, behavior problems, including both- internalizing (depression, anxiety, moodiness, etc.) and externalizing, dominated in only a few children without siblings.

Wei, Wuying, Ping, Jianhui and Yehan (2002) used the Zuckerman-Kuhlman Personality Questionnaire to assess personality traits and the Plutchik-van Praag Depression Inventory to measure depressed mood in 134 university students with and 126 university students without siblings. Most students without siblings (93.7%) were
reared in urban areas, while 90.3% of students with siblings came from rural areas. Parental professions were higher in social status and annual family incomes were higher in students without siblings. Increased neuroticism-anxiety, aggression-hostility, and depressed mood were found in students with siblings. Gender and annual family income were not significantly related to personality in the two groups, and birth-order position was not related to personality in the students with siblings. In contrast, the depression score was positively correlated with neuroticism-anxiety and aggression-hostility, but negatively correlated with parental occupation and annual family income. The greater competition to receive high education, reduced benefits from society, and lower level of social respect might nurture these personality traits in students with siblings. These findings might, in some limited aspects, indicate that the one-child policy affects personality traits and depressed mood in students with siblings.

Putter (2003) examined the relationship between birth order and depression, with parenting style as a proposed mediating factor. Participants were 6th to 8th grade children from two suburban Philadelphia school districts. There were 199 participants, of which 105 were first-born and 94 were later-born children. Existing literature suggests that parental protectiveness is associated with depression and that parents tend to be more protective of their first-borns. First-borns should therefore exhibit more depression than their later-born siblings. Results failed to differentiate first-borns from later-borns on depressive symptoms or recall of parental protectiveness. After being divided into four groups, though, middle children showed a trend toward being most depressed and recalling their parents as most protective. Overall, individuals that were most depressed rated their parents as most protective, as had been expected. Middle children showed a trend toward more depressive symptoms. A repeated measures ANOVA predicting CDI scores from birth order at baseline, 12 months, and 24 months revealed no significant overall effect, F(3,105)=1.52, p = 0.21. An ANOVA predicting mean baseline CDI scores from birth order, however, was significant, F (3,195) =5.72, p < .05. Middle children had the most depressive symptoms followed by first-borns, last-borns, and finally only children. The analysis differentiating only children from first-borns was significant, F (1.78)=5.45, p < 0.05,
as was differentiating only children from middle children, \( F(1,57)=6.40, p < 0.05 \). First-borns and middle children were significantly more depressed than only children. The difference between last-borns and first-borns was significant, \( F(1.94) =4.46, p < 0.05 \), as was the difference between last-borns and middle children, \( F(1.73) =5.09, p < 0.05 \). Firstborns and middle children were significantly more depressed than last-borns. Even though first-borns and middle children were significantly more depressed than only children and last-borns, however, first-borns did not significantly differ from middle children and only children did not significantly differ from last-borns.

Reinherz et al. (2003) conducted a study on 354 participants as a part of a single-age cohort from a predominately Caucasian working-class community whose psychosocial development had been traced prospectively since age 5. The study identified childhood and adolescent familial and behavioral-emotional factors predicting depression during the critical developmental stage. In the analyses, data collected during childhood and adolescence was related to diagnoses of major depression at ages 18–26. The results showed that during the transition to adulthood, 82 participants (23.2\%) experienced major depression. Bivariate indicators of later depression included a family history of depression or substance use disorders, family size (family composition), and childhood family environments perceived as violent and lacking cohesiveness. Also significant were self- and mother-reported internalizing behaviors, as well as self-rated anxiety and depressive symptoms. Multivariable analyses showed family size (family composition), low family cohesion to be the most salient factors apart from family violence, and internalizing problems during adolescence.

Liu, Munakata and Onuoha (2005) conducted a study in china to examine the one-child phenomenon due to deliberate government policy. The sample comprised of 299 and 333 students in two high-rank high schools in urban Harebin and rural Qing an Xian, respectively (mean age = 17.2 years). Multiple comparisons of urban and rural only and non- only children were carried out. Results showed that urban only-children (\( M=11.68; S.D=4.93 \)) showed significant negative mental health tendencies as compared to urban non- only children (\( M=8.67; S.D=4.31 \)). Also, urban only-
children experienced higher neurotic and social depression tendencies (M=43.07; S.D=6.26) apart from other mental health condition areas than did urban non-only children (M=37.83; S.D=6.88). No significant differences were found in the rural only- and non-only children. Low love awareness from parents and peers was associated with high negative mental health conditions in the children.

Khan, Ahmad, and Arshad (2006) carried out a hospital based, descriptive, non-interventional and cross sectional study conducted at Lahore from August 2003 to April 2004 to find out the association of family size and birth order in patients suffering from conversion disorder, and to observe its correlation with pattern of conversion symptoms and co morbid anxiety and depressive symptoms. The study sample consisted of 100 consecutive patients both males and females diagnosed by two consultant psychiatrists as suffering from conversion disorder on the basis of DSM-IV diagnostic criteria. The patients were evaluated on a semi-structured clinical interview. The depressive and anxiety symptoms were assessed by validated Urdu version of Hospital Anxiety and Depression Scale.20-22 This scale records subjective assessment of anxiety and depressive symptoms. Results showed that 28% of the patients with conversion disorder were having 1 to 3 siblings, 50% were having 4 to 6 and 22% were having 7 and above siblings. This indicates that conversion disorder is more common in patients with 4 to 6 siblings. Depressive symptoms were more common in patients having 4 to 6 siblings i.e. 38 (58%) and 28 (45%) respectively. Chi square showed no significant relationship (p < .05) between the number of siblings and anxiety and depressive symptoms. The results also showed no significant relationship (p > 0.05) between anxiety symptoms and birth order of patients but on the other hand a significant relationship (p < 0.05) was present between depressive symptoms and birth order of the patient.

Kwan and Wai-Cheung (2009) in a random sample of 4,502 Chinese adolescents in Hong Kong, controlling the underlying socio- demographic variables like gender, age, level of study, economic well- being, family structure, and migrant status, found very significant differences in psycho- behavioral characteristics between only children and children with siblings. Also, relative to their counterparts
with siblings, the only children had similar levels of mental health and high satisfaction in academic performance.

Ansari, Raza, Siddiqui, and Jabeen (2009) carried out a retrospective study to determine if there is any relationship of birth order with depressive disorder. The sample was taken from record of twelve hundred and eight patients between January 2002 and February 2004 out of which 626 were diagnosed as cases of Depressive Disorder who were compared with the rest of the population. These were also studied with reference to gender, catchment area, and family type. Data were analyzed on 13th version of SPSS. The results revealed that cases with depressive disorder were clustered in birth order-two; 36.42% of depression patients were found out to be birth order-two. The pattern remained almost the same irrespective of gender, catchment area, and family type. It was concluded that birth-order two is found to be more vulnerable to depressive disorder.

Monir, Khalifa and Mansour (2010) conducted a study on 436 boys and 435 girls (age ranged 9.5-10.5 years) in the years 2008-2009 in three elementary schools in urban Giza Governorate, Egypt. The aim of this study was to explore the relationship between nutritional obesity and psychosocial behavior among school – children in their natural setting; and to examine whether social backgrounds play a role in this relationship. Target population was third; fourth and fifth grade primary school children (n=861; mean age10±0.72) attending 3 public elementary schools at Dokki District; in Giza Governorate. Data on anxiety and depressive symptoms of children was assessed using standardized methods. Results revealed that 23.5% of boys and 18.7% of girls showed signs of depression; whereas anxiety was prevalent among 54%of boys and 52% of girls. Calculation of odds ratio (OR) showed that depression and anxiety is higher in low school achievers in girls (p<0.05) and boys (p<0.01). In a multiple regression model; depression was predicted by anxiety, age and academic achievements (R2=0.53; P≤0.001). Anxiety was predicted by BAP and birth order (R2=0.38; P≤0.003). Also, Birth order showed significant relation with depression among boys, whereas depression among girls was correlated with all social parameters (father and mother’s education; family number and birth order.)
Vanderwerp (2011) conducted a study on 1098 children ranging in age from 4 to 14 years old using data from the National Longitudinal Survey of Youth-Mother and Child samples, and investigated the relationships among child and adolescent depressive symptoms, having a chronically ill sibling, and other child and familial demographic variables. It was hypothesized that children with chronically ill siblings experience more depressive symptoms. Specifically, age, gender, birth order and family size were looked at, as potentially reducing the effect size of having a chronically ill sibling. Findings showed that having a chronically ill sibling is associated with demonstrating more depressive symptoms both in the bivariate and multivariate analyses. All bivariate correlations involving depressive symptoms are not significant. Having a chronically ill sibling is significantly correlated with, again, depressive symptoms ($r = .206, p < .001$). Under multivariate analysis, the main independent variable, having a chronically ill sibling was positively related to depressive symptoms ($b = 1.065, se = .155, p < .001$). Meanwhile, age remained significantly related to depressive symptoms ($b = .099, se = .020, p < .001$). Having a chronically ill sibling remained positively related to depressive symptoms ($b = 1.043, se = .154, p < .001$). Both birth order ($b = .084, se = .041, p < .05$) is positively and significantly related to depressive symptoms. Hence children who are later in the birth order showed more depressive symptoms. Age ($b = .140, se = .028, p < .001$) and gender ($b = .217, se = .099, p < .05$) both remained significantly related to depressive symptoms. Although age, gender, birth order and family size do not interact significantly with having a chronically ill sibling in predicting depressive symptoms, they do present interesting findings about childhood depressive symptoms in general.

Barker (2011) carried out a study to examine the psychological functioning of adolescent siblings of children with ADHD as compared to adolescents with only typically developing siblings. The sample consisted of adolescent siblings of children diagnosed with ADHD ($n = 133$), siblings of children with no diagnosed disorders ($n = 104$), and siblings of children with a disorder other than ADHD ($n = 40$) completed measures of psychological functioning (anxiety, anger, depression, and emotional reactivity). A parent of each participant also completed a demographics questionnaire and a rating of ADHD symptom severity about their child with ADHD or simply one
of their children if none were diagnosed with ADHD. Participants for all three groups were recruited from public schools in New York, with additional siblings of children with ADHD recruited from: 1) a clinic in New York and 2) programs for family members of children with ADHD and/or developmental disabilities. Results demonstrated that adolescent siblings of children with ADHD reported higher levels of depression than control group peers. The severity of their sibling's ADHD symptoms was shown to be positively correlated with the adolescent's levels of depression and anger. The role of family constellation variables (birth order/gender, age differences and family size) were also explored.

Zaidi (2011) carried out a study to explore the relationship between birth order and depression. It was hypothesized that first-borns are more susceptible to depression than later borns. Subjects were male and female undergraduate students from Rowan University. These students were over the age of 18 and were kept anonymous. The study collected data from fifteen participants by using a Birth Order survey which included questions about personality traits that pertain to a certain birth order position. Each subject was asked to indicate the exact birth order rank and if they have experienced depression or signs of depression. Results showed that differences were not significant due to the small sample size. Not enough subjects were depressed as well. Interestingly, the two subjects who were depressed were not first-borns, yet middle and last-born.

Risal and Tharoor (2012) proposed that ordinal position the child holds within the sibling ranking of a family is related to intellectual functioning, personality, behavior, and development of psychopathology. The mean age of onset of mental illness among the adult general psychiatry patients (group I, n = 527) was found to be 33.01 ± 15.073, while it was 11.68 ± 4.764 among the child cases (group II, n = 47) and 26.74 ± 7.529 among substance abuse cases (group III, n = 110). Among group I patients, commonest diagnosis was depression followed by anxiety and somatoform disorders irrespective of birth order. Dissociative disorders were most prevalent in the first born child (36.7%) among group II patients. Among group III patients, alcohol dependence was maximum diagnosis in all birth orders.
2.2.2 ANXIETY

Anxiety, Family size, and Birth order

This section caters to the researches of both State and trait anxiety, in context to family size and birth order.

Schachter (1959) has found a positive relationship between manipulated anxiety and affiliative responses; this relationship, however held for first born and only child subjects but not for later borns and was most clearly demonstrated with female subjects. Substantial support for this proposition, in case of first borns, was also given by Wrightsman (1960).

Weller (1962) replicated Schachter’s original study and found conflicting results. In his study, 234 freshman and sophomore female students who were first borns and later borns were divided into groups of six. The groups were then divided into high anxiety condition and low anxiety condition. The high anxiety condition groups were told that they would receive electrical shocks that "would hurt, be painful, but do no permanent damage." Participants in the low anxiety condition groups were told that they would receive mild shocks. The participants were given an adjective checklist at various times during the experiment. There was a pre-experimental measure of anxiety, a measure of anxiety after the anxiety manipulation was presented, and then a measure of anxiety was taken forty minutes after the experiment. Weller’s study found that there was no significant difference in the anxiety levels between first-borns and later-borns. Weller did find that first-borns arrived to the experiment with more anxiety than later borns.

Zucker, Manosevitz, and Lanyon (1968) tested the utility and generality of laboratory derived notions concerning the relationship of birth order to anxiety and affiliation during a crisis. It was hypothesized that 1st-borns would be more anxious and affiliative than later borns while stranded in this situation. Results support the anxiety hypothesis, and the affiliation hypothesis, i.e. being anxious and affiliative during such anxiety provoking situations, received some confirmation among women. A further hypothesis, that lower anxiety would be reported when affiliative behavior
was congruent with the birth order theory of affiliative choice, was also supported. Birth order relationships were complicated by sex differences.

Grosz (1968) conducted a study on the ordinal positions of birth and sibling constellations of 650 psychiatric patients from three sibling families at Royal and Maudsley Hospitals in London. Diagnostically, 213 were suffering from anxiety reactions, 170 from schizophrenia, and 267 from depression. Each patient had only two siblings both of whom were living and were free from a history of mental illness. All patients were sixteen years or older. No significant differences in the frequency distribution of patients by ordinal position of birth (first-born) were found among patients given the diagnosis of anxiety reactions.

Suedfeld (1969) conducted a study based upon the hypothesis that birth order interacts with the affective tone of recruiting an orientation material, in that first borns are more conforming with such set inducing manipulations, 78 subjects answered a newspaper advertisement requesting them to ‘lie in a dark, salient room for 2 hours, payment $3’. Since the restrictions on the use of the chamber permitted only 10 subjects in each of the 6 groups, 30 first borns and 30 later borns were randomly chosen to participate. Subjects were given the social desirability response style scale (Sticker, 1963) followed by Subjective Stress Scale (SSS). The subject indicates which item best describes his feelings at a specified time. After completing these tasks, the subject was led into the confinement chamber and instructed to remain on the bed during entire session. The experimenter then left the chamber and one of the 3 taped orientation messages was played to the subject over the intercom. When it was over, the experimenter reentered the chamber and gave the subject a second form of the SSS, asking him to indicate how he expected to feel during the session, and then the experimenter left. After 2 hours of darkness and silence in the chamber. The subject was given 3rd form of SSS, a symptom checklist and then was released. Results revealed that first borns had a mean of 20.57 and later borns, a mean of 20.56; with standard deviations of 3.37 and 2.74 respectively. The first borns anticipated less anxiety than did later borns when the materials were anxiety arousing.
Zimbardo (1976) found first-born and single children had a greater tendency to be shy i.e. had higher social anxiety than children who were born after siblings. Two explanations were put forward for this finding. Firstly, it was postulated that parents may set higher expectations for their first-born and only children, and as a result, these children may become more sensitive for social failure. Secondly, because they have a power disadvantage, later-born children may need to acquire social skills more quickly to negotiate personal needs in sibling relationships. In contrast, a bio-behavioural theory of the role of birth order in anxiety (Maccoby, Doering, Jacklin, & Kraemer, 1979) stated that certain hormonal patterns favouring the expression of dominance behaviour are found more in first-borns and spaced (that is, born at least 4 years later) laterborns, irrespective of gender.

Kushnir (1978) in a review examined two commonly held views: first, that firstborns become more anxious than laterborns in stressful situations; secondly, that firstborns, more than laterborn individuals, seek the company of others in stressful situations. It appears that these notions are too generalized and should be qualified. The birth order literature does not distinguish between state anxiety and anxiety as a trait. Contrary to some suggestions, there is no evidence for birth order differences in trait-anxiety. However, there are indications that in some threatening situations firstborn females report higher levels of state anxiety than laterborn females. The evidence concerning males is equivocal. Some operational definitions of "affiliation" lack clarity and generality. Birth order differences in affiliation are found only among females and only in stressful circumstances which arouse greater anxiety among firstborn than among laterborn females. This finding suggests that the firstborn females affiliate in order to reduce anxiety rather than to engage in social comparison of emotions, as originally suggested by Schachter (1959).

Howarth (1980) in his study assessed the birth order and family structure variables which included first or only child, position in multi-child family, position in dyadic family, age of parents at birth of given child, whether reared by one or both parents, whether reared under permissive or authoritarian family atmosphere. The personality variables assessed included anxiety, amongst others namely Sociability,
Dominance, Superego, Phlegmatic Temperament, Involvement, Self-Regard and other scales measured by the Howarth Personality Questionnaire. 170 female and 142 male undergraduates were tested. Significant relationships found included: anxiety lower in firstborns; superego higher in firstborns; persistence higher in those not dominated by elder sibling; phlegmatic temperament higher in permissive families; involvement and phlegmatic temperament lower in single parent families; self-pride higher in the elder of a sibling pair; individual tolerance higher in children reared by both rather than single parent.

McDonald and Carroll (1981) investigated the concurrent validity of three measures of death anxiety and the effect of birth order on death anxiety as measured by each of the scales. Subjects were 100 undergraduate students at a large, private, Midwestern university. Results showed significant Inter correlations (p less than .001) among the three scales; only one scale (Templer) differentiated first-born and only children from later-born children. The former had higher death anxiety scores (p less than .05).

Howarth (1982) in his research assessed the birth-order variables which included sex and number of siblings, assignment to 2- or 3-child family for separate sample analysis, family position as appropriate to given sample, spacing effect—was the birth of the second child spaced 4 years or more after the first child—dominance relationships in the family, sex of nearest siblings, sex of other siblings as appropriate, whether raised by both original parents, whether raised by foster parent(s). The personality variables assessed included sociability, anxiety, dominance, superego, phlegmatic temperament, involvement, self-regard and other scales measured by the new Howarth Personality Questionnaire. Samples of 50 for the 2-child families and 58 for the 3-child families were analyzed and it was found that: (a) in the 2-child families eldest children were less cooperative than younger, that those reporting dominance by another sibling were higher in state anxiety and this also applied to the younger of the pair, that those spaced in birth order were less afraid of being socially unacceptable, that those raised by both parents were higher in involvement; (b) in the 3-child families those dominated by a sibling, regardless of position, had more
hypochondriac symptoms (a sign of anxiety), and that those spaced in birth order showed less cooperativeness.

Falbo and Polit (1986) conducted six meta-analyses summarizing characteristics of 115 studies published between 1925 and 1984 in psychological journals and educational sources comprising of both male and female subjects ranging in age from preschoolers to adults involving contrasts between only children and various comparison groups—first, only children were compared with all non-only children. Additional comparison groups were defined in terms of birth order and family size. Three family size comparison groups were established: small (two-child), medium (three or four-child), and large (five or more child) families. In terms of birth order, only borns were compared with first borns and later borns from multi-child families. The Meta-analyses was conducted on the following topics: achievement, adjustment, anxiety, character, intelligence, parent-child relationships and sociability. The non-only children surpassed the only group in anxiety, besides other characteristics like character (leadership, autonomy), intelligence, achievement, and psychological adjustment. Across all developmental outcomes, only children were found to be indistinguishable from first borns and people from small families.

Brown (1986) carried out a study on anxiety level of children living in intact, single parent and blended families to determine whether elementary, middle and high school students differ in the levels of state anxiety and trait anxiety dependent on the family structure in which they live (intact, single parent and joint families). The state trait anxiety inventory for children was administered to 909 children in grades 2 through 12 and their anxiety levels were examined. Analysis of variance technique with appropriate follow-up procedures was used to assess differences in state and trait anxiety levels in children living in the 3 different family structures. No significant differences were found dependent on family type.

Gates, Lineberger, Crockett, and Hubbard (1988) sought to examine the relationship of birth order to depression, anxiety, and self-concept in children. 404 children aged 7 through 12 were given surveys that included the Children’s Depression Inventory, the State-Trait Anxiety Inventory for Children, and the Piers-
Harris Self-Concept Scale. The results showed that first-borns appeared healthier than the other groups, showing less depression, state anxiety and trait anxiety. The study did mention that their findings did contradict findings in earlier research which found that first-borns are less well-adjusted than later-borns, and it was mentioned that the findings were not consistent with Adler’s theory.

Eisenman (1992) in his study concluded that first borns are more fearful and that some first borns show more anxiety and creativity. These findings may be due to parents being more restrictive and anxious with first borns as well as to first borns having more time alone with their parents.

Khodayarifard (1996) conducted a research to investigate the relationships between trait anxiety, attributional style and academic performance of students enrolled in 18 primary public schools in the Illawarra region of New South Wales, Australia. In each of these schools one class of students in grade 4, 5, and 6 were included (N = 554 students; 277 boys and 277 girls). The results showed that the academic performance of students with low trait anxiety was noticeably higher than the academic performance of students with high trait anxiety (p < .01). Regarding attributional style, girls attributed positive events to internal, stable, and global causes and negative events to external, unstable, and specific causes. Boys, on the other hand, tended to attribute negative events to internal, stable, and global causes and positive events to external, unstable, and specific causes. No significant correlation were found between academic performance and grade, academic performance and birth order, academic performance and family size, or between anxiety and grade, anxiety and birth order and between anxiety and family size (p > .05). Furthermore, there were no significant correlations between attributional style, birth order and family size (p > .05).

Bögels, van Oosten, Muris, and Smulders (2001) in their present study investigated whether socially anxious children perceive their current parental rearing as rejecting, overprotective, and lacking emotional warmth, and as emphasizing the importance of other's opinion, and de-emphasizing social initiatives and family sociability. Furthermore, it was examined whether parents of socially anxious children
reported to rely on such rearing practices, and suffer themselves from social fears. Regression analyses as well as extreme group comparisons were applied. Little support was found for the presumed role of the assessed family rearing aspects in the development of social anxiety in children. Solely family sociability (children's and mothers' report) and children's perception of overprotection of the mother predicted social anxiety in the regression analysis. Given the influence of the mentioned rearing practices, social anxiety of the mother still significantly predicted social anxiety of the child. In the extreme group comparisons, differences in the expected direction were found between socially anxious and normal children on parental rejection, emotional warmth, and family sociability. However, the lack of differences between socially anxious and clinical control children suggests that these variables do not form a specific pathway to social fears.

Chartier, Walker, and Stein (2001) examined the relationship between potential childhood risk factors and social phobia on an epidemiological sample. Identifying risk factors such as childhood adversities can often uncover important clues as to the etiology of a disorder. This information also enables health care providers to predict which individuals are most likely to develop the disorder. Data was collected from the Mental Health Supplement to the Ontario Health Survey of a survey of 8116 Canadian respondents, aged 15–64. Social phobia was diagnosed using the Composite International Diagnostic Interview (CIDI). Childhood risk factors were assessed by a series of standardized questions. Results revealed a positive relationship between social phobia and lack of close relationship with an adult, not being first born (in males only), marital conflict in the family of origin, parental history of mental disorder, moving more than three times as a child, failing a grade, requirement of special education before age 9 and dropping out of high school. Many of these variables remained significant after controlling for phobias, major depressive disorder and alcohol abuse. The data also suggested that some childhood risk factors may interact with gender to influence the development of social phobia. Thus, although an association was detected between social phobia and childhood risk factors, naturalistic prospective studies are needed to clarify the etiological importance of these and other potential risk factors for the disorder.
Santrock (2002) found that due to higher expectations that are placed on the oldest child in a family, first-borns experience more guilt, anxiety, and difficulty in coping with stressful situations. Research stated that it is also important to keep in mind that other factors such as age spacing between children, sex of the children, hereditary, temperament, parenting styles, peer influences, sociocultural factors, etc. can also impact personality.

Wang, Du, Liu, Liu, and Wang (2002) used the Zuckerman-Kuhlman Personality Questionnaire to assess personality traits and the Plutchik-van Praag Depression Inventory to measure depressed mood in 134 university students with and 126 university students without siblings. Most students without siblings (93.7%) were reared in urban areas, while 90.3% of students with siblings came from rural areas. Parental professions were higher in social status and annual family incomes were higher in students without siblings. Increased neuroticism-anxiety was found in students with siblings. Only children didn’t exhibit neuroticism–anxiety. Gender and annual family income were not significantly related to personality in the two groups, and birth-order position was not related to personality in the students with siblings. In contrast, the depression score was positively correlated with neuroticism-anxiety and aggression-hostility, but negatively correlated with parental occupation and annual family income.

Abdel-Khalek (2002) conducted a study and differences in rated anxiety among 2,453 boys (n = 1,229) and girls (n = 1,224), Kuwaiti secondary school students, were reported for five age groups from 14 to 18 years. For girls at all ages but 14 years, mean rated anxiety was significantly higher than the means for the boys. Mean anxiety scores increased across age groups from 14 to 18 years. Not all comparisons between age groups with the same sex, however, were significant. Analysis showed non-significant correlations for anxiety with both family size and number of siblings, but significant and positive correlations for anxiety with birth order were found for boys (r=.10, p<.01) and girls (r=.06, p<.05). The predictive and practical values of these very small correlations are negligible, being significant merely because N is so large. Pearson correlations between anxiety and self-rating of
religiosity were -.22 and -.22 (p<.01) for boys and girls, respectively. This result was interpreted in the light of high intrinsic religious orientation among Kuwaitis. In the Islam proper, multiple practices are said to relieve anxiety.

Liu, Munakata, and Onuoha (2005) conducted a study in China to examine the one-child phenomenon due to deliberate government policy. The sample comprised of 299 and 333 students in two high-rank high schools in urban Harebin and rural Qing an Xian, respectively (mean age = 17.2 years). Multiple comparisons of urban and rural only and non-only children were carried out. Results showed that urban only-children (M=11.68; S.D=4.93) showed significant negative mental health tendencies as compared to urban non-only children (M=8.67; S.D=4.31). Specially, urban only-children (M=43.97, S.D=7.52) showed higher trait anxiety than did urban non-only children (M=36.83, S.D=8.89). No significant differences were found in the rural only- and non-only children. Low love awareness from parents and peers was associated with high negative mental health conditions in the children.

Khan, Ahmad, and Arshad (2006) carried out a hospital based cross sectional study in the Department of Psychiatry, Services hospital, Lahore from August 2003 to January 2004 to find out the association of family size and birth order in patients suffering from conversion disorder, and to observe its correlation with pattern of conversion symptoms and co morbid anxiety. For this purpose, One hundred patients, suffering from conversion disorder diagnosed on the basis of DSM-IV criteria were assessed for symptom pattern. A semi-structured interview was used to collect details of family size and birth order. Anxiety symptoms were evaluated by using Hospital Anxiety and Depression Scale (HADS). The majority of the patients were having 4-6 siblings. Results revealed a strong correlation between the larger sized family and the middle born patients with the pattern of the conversion symptoms as well as with the anxiety symptoms.

Mokashi and Gaonkar (2007) conducted a research to study the correlates of anxiety and scholastic achievement of residential school students on a sample of all the students studying in eighth, ninth and tenth standards from two schools. Kittur Rani Chennamma School had the strength of 173 girls and Sainik School of Bijapur
had 177 boys studying in eighth, ninth and tenth standards at the time of survey. The students of each class were administered the questionnaire separately and scrutinized the individual students questionnaire. The students who had answered the items completely were retained, thereby, summing up to the sample of 330 students consisting of 165 boys and 165 girls as the final size of the sample. Results revealed that there was no significant relationship between age, ordinal position, type of the family, family size, income of the family, arts and music, sports, intelligence and anxiety of the girls. There was no significant relationship between age, ordinal position, type of family, family size, arts and music, sports, intelligence and anxiety of the boys. Among the personal characteristics viz., age, gender, ordinal position, type of family, family size, income of the family, arts and music, sports, and intelligence together contributed to the extent of 11 per cent for the variation in the anxiety level. Among these characteristics gender alone was contributing to the extent of 9 per cent for the variation in the level of anxiety. Also, majority of the boys were high in anxiety compared to girls.

Ozer, Fernald, and Roberts (2008) investigated the contributions of individual, family, and community-level factors for explaining anxiety symptoms among rural adolescents in Mexico. As part of a large-scale survey, 3,553 adolescents and their mothers from 333 poor, rural communities in seven Mexican states provided cross-sectional data on family level, socio-economic and psychosocial factors, and individual-level data on anxiety symptoms. Community standard of living indicators were also gathered. Results revealed that Linear regressions adjusted for sampling design indicated that adolescents' anxiety symptoms were uniquely predicted by mothers' depressive symptoms, maternal perceived stress, larger family size, and lower maternal and adolescent educational attainment. Family income and community standard of living were not directly associated with adolescent symptoms. Adolescent females reported more symptoms than males, but gender did not moderate the relationship between the predictors and adolescents' symptoms.

Loyas (2009) carried out a study at the Winona State University on 59 college students (50 females, 9 males) to explore the relationship between birth order,
academic stress, and test anxiety. The results showed that first borns tend to be more academic-minded compared to later borns. The prediction was that first borns will show more test anxiety. Each participant was given a word search puzzle and two questionnaires to complete. It was shown that there was no significant difference between birth order and overall self-worth, academic competence, overall state self-esteem, and performance state self-esteem.

Tramontana (2009) carried out a study on one hundred Loyola University undergraduate college students to determine if there is a relationship between birth order and anxiety. It was hypothesized that first-born children would report more general anxiety than last-born children, and that middle children would report less anxiety than first and last borns. It was also hypothesized that only children would report the least anxiety of all participants. Participants were 21 males and 73 females and ranged in age from eighteen years to twenty-two years. All participants volunteered for the study. Convenience sampling was used. Anxiety levels were measured using the Brief Symptom Inventory Survey (Derogatis, 1993). The higher the score, the higher the anxiety level was. Some items were added to the survey by the researchers. For example, participants were asked to write their age. Then were asked how many brothers they had and the ages of those brothers, and how many sisters the participant had and the ages of those sisters. By examining this data, birth order was determined. Birth order, the independent variable, had four levels: first-born (being the first child born in a family), last-born (children born the last in their family), middle-children (not born first or last in a family), and only-children (participants with no siblings). Results revealed that the thirty-five first-born participants got a mean anxiety scale score of 1.24; the thirty-three last-born participants got a mean anxiety scale score of 1.21. The nineteen middle born participants got a mean anxiety scale score of 1.48. The hypothesis that first borns experience more anxiety than last born and middle born participants was not found to be true. A one-way ANOVA statistical analysis was used to interpret the data collected, and the results were not significant with F (3, 90) = .688. The null hypothesis could not be rejected. A significant difference in the general anxiety levels of first-borns, last-borns, middle-borns, and only children was not found.
Risal and Tharoor (2012) proposed that ordinal position the child holds within the sibling ranking of a family is related to intellectual functioning, personality, behavior, and development of psychopathology. The mean age of onset of mental illness among the adult general psychiatry patients (group I, \( n = 527 \)) was found to be \( 33.01 \pm 15.073 \), while it was \( 11.68 \pm 4.764 \) among the child cases (group II, \( n = 47 \)) and \( 26.74 \pm 7.529 \) among substance abuse cases (group III, \( n = 110 \)). Among group I patients, commonest diagnosis was depression followed by anxiety and somatoform disorders irrespective of birth order. Dissociative disorders were most prevalent in the first born child (36.7%) among group II patients. Among group III patients, alcohol dependence was maximum diagnosis in all birth orders.

2.2.3 SELF- ESTEEM

Self Esteem, Birth Order and Family Size

Zimbardo and Formica (1963) based their research on social comparison theory which states that an individual’s level of self-esteem is determined by the results of a comparison between that individual and others. They reasoned that first and only-borns compare themselves to their parents, whereas last-borns compare themselves to their older siblings. Since during childhood, such comparisons are more invidious for first and only than last-borns, they concluded that only and first-borns acquire lower self-esteem.

Rosenberg (1965) reported that only-borns were more likely to be classified as having high self-esteem and this apparent difference between only and non-only borns existed mainly for males, especially Jewish males.

Coopersmith (1967) research encompassed the effects of family size on self-esteem (though in no great detail). The results of his study indicated that, "Children in smaller families are no higher in self-esteem than are those in larger families."

Sears (1970) theorized that parents have only so much time and energy to give to their children. As a result, the larger the family, the less the parents will be able to promote conditions facilitating self-concept development in their children.
Watkins, David, Astilla, and Estela (1980) investigated the relationship between birth order and self-esteem among 209 11- to 13-year-old girls attending a private high school in the central Philippines. The Self-Esteem Inventory was used to measure self-esteem. No evidence of any influence of birth order, family size, or their interaction with self-esteem was found.

Kidwell (1982) conducted a study to examine the self-esteem of middle borns compared with firstborns and lastborns. While most of the birth-order research concentrates on comparing firstborns with a general category of "later borns," the present research emphasized an empirical and conceptual distinction for middle borns. The number, spacing, and sex of siblings of the middle born were also closely examined. Data were obtained from a secondary analysis of a national sample of over 2,200 adolescent males. The results suggested that middle borns have a significantly lower self-esteem than firstborns and lastborns and that the self-esteem of middle borns is significantly lower when the average spacing of their immediately adjacent siblings is two years compared with one year. Self-esteem of the middle born male is significantly enhanced when his siblings are all female than when they are all male or mixed gender. The findings were explained according to a uniqueness theory, which suggests that firstborns and lastborns enjoy an inherent uniqueness in their birth order which facilitates status, recognition, and attention by parents and other siblings. There is no inherent uniqueness in the position of middle born child, whose role in the family is consequently less well defined. This is reflected in the middle born's overall self-assessment.

Falbo and Polit (1986) conducted six meta-analyses summarizing characteristics of 115 studies published between 1925 and 1984 in psychological journals and educational sources comprising of both male and female subjects ranging in age from preschoolers to adults involving contrasts between only children and various comparison groups- first, only children were compared with all non-only children. Additional comparison groups were defined in terms of birth order and family size. Three family size comparison groups were established: small (two-child), medium (three or four-child), and large (five or more child) families. In terms
of birth order, only borns were compared with first borns and later borns from multi-child families. The Meta-analyses was conducted on the following topics: achievement, adjustment, anxiety, character, intelligence, parent-child relationships and sociability. The only children surpassed the non-only group in self-esteem, besides other characteristics like character (leadership, autonomy), intelligence, achievement, psychological adjustment and anxiety. Across all developmental outcomes, only children were found to be indistinguishable from first borns and people from small families.

Gates, Lineberger, Crockett, and Hubbard (1988) carried out a study on 404 children ranging from 7-12 years of age, of whom 158 were 1st-born, to disprove Adler's suggestion of the first child being "dethroned," and having associated factors like increased rates of depression, higher needs for affiliation and achievement, and stronger dependency needs. The children were given the Children's Depression Inventory, the State-Trait Anxiety Inventory for Children, and the Piers-Harris Self-Concept Scale. Results revealed that 1st-borns showed significantly higher levels of self-esteem than 2nd-born and youngest borns.

Veenhoven and Verkuyten (1989) gathered data among pupils of 40 secondary schools in the Netherlands. All types of secondary schools in the Netherlands were represented proportionally. Schools were selected in all regions of the country. Classes within the schools were chosen at random, from which 2,511 students completed a questionnaire. Their ages were between 13 and 17 years; 54% were boys and 46% girls. The number of only children in the sample was 280 (11%). Sex and age distribution among the singletons did not differ from the sample as a whole. Results revealed that only children do not differ from non-singletons in the global appreciation of themselves. In fact, they show somewhat more self-esteem. Specification by employment status of parents showed significantly higher global self-esteem of female only children with a working mother (three-way interaction effects among only child, sex, and working mother: F = 4.1, p < .05). Female only children with an unemployed father, on the other hand, distinguish themselves from children with siblings by lower global self-esteem (three-way interaction effect among only child, sex, and working father: F = 3.9, p < .05).
Orr and Dinur (1995) investigated the effect of two multidimensional systems—namely, social setting and the self—upon adolescents' growth and development. It was hypothesized that gender differences in adult social status are greater in the kibbutz than in the Israeli urban setting, and that this gap is associated with gender differences in global self-esteem among kibbutz youth. The Rosenberg Self-esteem Scale, and scales from Marsh's Self-Description Questionnaire III and from Harter's Self-Perception Profile for Adolescents were administered to 569 kibbutz and urban adolescents from Grades 9 to 11. Data on academic achievement and parental status was also obtained. Kibbutz mothers were found to have significantly lower social status than fathers, while kibbutz girls had significantly lower self-esteem than kibbutz boys and urban adolescents of both sexes. The organization of the self-concept of kibbutz females differed from the other groups: self-esteem was predicted not only from self-concepts in the domains of scholastic achievement and peer support, but also from the domain of parental support, from academic achievement, and from father's occupational status.

Rivera and Carrasquillo (1997) in his research found that only children appear to have an advantage over children with siblings. In an interview conducted with parents and teachers of 10, 4-year-old only-children in a Bronx Head Start program, found that stereotypes against only children are still influencing popular opinion. Research on their self-esteem has revealed positive aspects, besides which, teachers also viewed only-children as more attention-seeking, more mature and tending to have undeveloped social skills.

Wilson (2002) found that later born children do not receive as extensive attention as first-borns and often feel less appreciated. Therefore, later-born children often have lower self-esteem than first and only-children.

Liu, Munakata, Fujiyama, and Usuba (2003) carried out a study to investigate psychosocial factors underlying the mental health problems of single-child high school students in China. In the single-child group, anxiety, interpersonal dependence, and perceived stressors were significantly higher while the perceived self-esteem and emotional support from family members were significantly lower than in the non-
single-child group. The results indicated that a poor emotional support network could cause low self-esteem.

Liu, Munakata, and Onuoha (2005) conducted a study in China to examine the one-child phenomenon due to deliberate government policy. The sample comprised of 299 and 333 students in two high-rank high schools in urban Harbin and rural Qing an Xian, respectively (mean age = 17.2 years). Multiple comparisons of urban and rural, only and non-only children were carried out. Results showed that urban only-children (M=11.68; S.D=4.93) showed significant negative mental health tendencies as compared to urban non-only children (M=8.67; S.D=4.31). Specially, urban non-only children (M=7.11; S.D=1.79) showed higher self-esteem than did urban only children (M=7.97; S.D=1.21). No significant differences were found in the rural only- and non-only children. Low love awareness from parents and peers was associated with high negative mental health conditions in the children.

Collins (2006) surveyed a sample of 100 Providence College students, a private liberal arts New England College and asked them to report their birth order, perceived traits, career choice, and college major. The sample included 38 males and 63 females. The subjects’ graduation year was also noted: 15 were freshman, 34 sophomores, 16 juniors, and 35 seniors. They were asked to complete a survey regarding their birth order, college major, year of anticipated graduation, career the subject intends to pursue, number of siblings in their families, how they personally perceive their personality traits, and how their family members perceive their personality traits. Participants’ ages ranged from 18 to 22, with the mean age being 20.13 years. Participants were categorized by birth order as well: 6% were only children, 51% were first children, 12% were middle born children, and 31% were last born children. Results revealed that birth order does not necessarily have a direct effect on children’s personality and self-esteem.

Osarenren, Ubangha, and Oke (2008) investigated the family characteristics as the correlates of self-esteem among young adults. Three hypotheses were postulated to give direction to the study. The participants for the study consisted of 200 students randomly selected from tertiary institutions in Ogun state. The instruments used for
data collection were Rosenberg's (1965) Self Esteem Scale and Personal Data Card constructed by the researchers. The data collected were analyzed with one-way analysis of variance and independent t-test statistical techniques. The results of the analysis showed that there is a significant difference in self-esteem of young adults with respect to their ordinal position. Young adult’s self-esteem have no linkage with size of the family and there is a significant gender difference in young adult’s self-esteem. On the basis of the results, it was recommended among others that preferential treatment should be avoided by parents in the course of relating with their children.

McCormack (2012) conducted a study on 60 undergraduate students attending a third level Institute in Ireland. The study was approved by the Ethics Committee of the Institute and treatment of participants was in accordance with the ethical standards of the American Psychological Association (APA). Participants were primarily Psychology undergraduate students. Participants’ ages ranged from 18-25 years old [M=20]. This study examined the role of birth order and self-esteem on utilizing student support services within third-level education. Student support services consist of student welfare, health centre, career advice, counselling services and accommodation. This study anticipated that (1) later born students’ would be more open to using student social support services. An ANOVA was used to examine the trends between birth rank and using student support services. This was found to be insignificant. Therefore, this hypothesis was not supported. The second hypothesis anticipated that students with higher self-esteem scores would be more likely to utilize student social support services than students with lower self-esteem scores. A Pearson’s correlation was used to examine the relationship between levels of self-esteem and the scores answered on the student support services questionnaire. This was found to be insignificant. Therefore, this hypothesis was not supported. The relationship between ordinal position and self-esteem was found to be not significant, with first born, middle youngest and only children sharing a similar self-esteem and likelihood to use student support services score. The hypotheses presented in this present study were not supported.
2.3 PARENT CHILD RELATIONSHIP

Parent-Child Relationship, Family Size and Birth Order

In the present study, majorly three dimensions of parent-child relationship were studied namely: PROTECTING, REJECTING, AND LOVING in relation with birth order and family size. The following review of literature comprises of these dimensions apart from other general dimensions.

Miller and Gerard (1979) reviewed studies which link children's creativity to family background characteristics and parent-child relations. Sample and measurement differences are considered in resolving discrepancies and integrating the findings. Social class is positively related to children's verbal creativity, but findings are mixed when nonverbal assessments are used. Younger children who are distant from sibs in age tend to be less creative; other birth-order findings are inconsistent. Gender differences in creativity are absent in most samples of very young children, but differences appear and widen developmentally, with older girls doing better on verbal tests and older boys on figural tests. Parents of creative children tend to feel personally secure and be highly competent. Relationships between creative children and their parents tend to be neither overly close emotionally, nor hostile and detached, but marked by respect, independence and freedom.

Kidwell (1981) conducted a study to examine the effect of the sibling structures of number and spacing, sex composition, and birth order on adolescents' perceptions of the power and support dimensions of parental behavior. These sibling structures were conceptualized as dimensions on a hypothetical sibling time line, including number of siblings and the way in which they are arranged in time, i.e., the spacing and birth order. Data were obtained from a secondary analysis of a national sample of over 1,700 adolescent males. The results suggested that research focusing on birth order as an explanatory variable must control for number of siblings, spacing, and sex composition of siblings; studies examining family size must control for sibling spacing, birth order, and sex composition. In addition a curvilinear relationship was found between perceived parent behaviors and wider spacing between siblings.
The "best" spacings are the widest (five years) and the narrowest (one year or less), with spacings of two and three years being the most negative. Most of the power in the curvilinear relationship obtains with male respondents whose closest sibling is male. Males whose closest sibling is female, however, view their parents as more punitive.

Peek et al. (1985) administered two main dimension of family power—mainly power style and power differentiation on 1545 high school students studying in junior and senior classes, their age ranging from 13-19yrs. Results indicated that older adolescents in their senior class perceived their parents as more punitive, strict and violent towards them than the younger adolescents and also revealed that older adolescent’s violence was more directed towards father than mother.

Falbo and Polit (1986) conducted six meta-analyses summarizing characteristics of 115 studies published between 1925 and 1984 in psychological journals and educational sources comprising of both male and female subjects ranging in age from preschoolers to adults involving contrasts between only children and various comparison groups—first, only children were compared with all non-only children. Additional comparison groups were defined in terms of birth order and family size. Three family size comparison groups were established: small (two-child), medium (three or four-child), and large (five or more child) families. In terms of birth order, only borns were compared with first borns and later borns from multi-child families. The Meta-analyses was conducted on the following topics: achievement, adjustment, anxiety, character, intelligence, parent-child relationships and sociability. The non-only children surpassed the only group in anxiety, besides other characteristics like character (leadership, autonomy), intelligence, achievement, and psychological adjustment. Across all developmental outcomes, only children were found to be indistinguishable from first borns and people from small families. Overall, however, the review indicated that only children were comparable in most respects to their siblinged counterparts.

Richardson, Abramowitz, Asp, and Petersen (1986) prepared interview data for 96 eighth graders from intact families with at least two children and used it to
examine effects of family size, sibling spacing, and gender on young adolescents' relationships with their parents. Results of multivariate analyses of variance indicated that, as measured by adolescents' reports of quantity of parental contact and nature of parental discipline, mother-child relationships in early adolescence were influenced by child's gender. In contrast, adolescents' relationships with their fathers were a function of sibling spacing. The possibility that both family structure and childrearing practices were determined by attitudes toward parenthood was discussed. A distinction was made between family size and household size to account for the lack of family size effects in these analyses.

Salmon (1999) in her Study 1, made 140 undergraduates complete a questionnaire relating to the amount of time they spent in contact with specific relatives, while in her Study 2, made 112 undergraduates complete the same questionnaire with the addition of two questions relating to the subjects’ parents’ birth orders. Subjects were more likely to have frequent contact with maternal, as opposed to paternal, kin and women experienced more frequent contact than men with relatives in general. Results revealed that the birth order of subjects did not appear to have a significant influence on contact but the birth order of the subjects’ parents did, with the offspring of middleborn mothers having relatively little contact with maternal grandparents and the offspring of middleborn fathers having relatively little contact with paternal grandparents. These sex and birth order differences were discussed in relation to possible differences in how women and men used kinship ties and in terms of how birth order might influence parental solicitude. Previous research indicates that birth order is a strong predictor of familial sentiments, with middleborns less family-oriented than first- or last-borns. In this research, effects of sex and birth order on the actual frequency of contact with maternal and paternal kin were examined in two studies.

Rohde, et al. (2003) tested various predictions based on Sulloway’s [Born to rebel: birth order, family dynamics, and creative lives. New York: Pantheon, 1996] theory of family relations, using questionnaires. They selected a multinational convenience sample of 2024 university students each of whom had at least one
sibling, from Austria, Germany, Israel, Norway, Russia, and Spain. The data were collected between autumn 1998 and spring 2001. Participants indicated whether they considered themselves or a sibling as the child most favored by the parents. In sibships (family size) of two, it was examined first whether there was an effect of the birth order of the judge on the birth order of the alleged favored child: 163 of 291 firstborns (56%) said that their younger sibling was favored, and 112 of 213 lastborns (53%) named themselves, so firstborns and lastborns did not disagree in their judgment that laterborns tend to be favored [\(\chi^2(1, n = 504) = 0.58, P=.44, u =.03\)]. In the context of the percentage of participants in each birth order who named a parent as the closest person. In sibships of two, 419 of the 518 participants who named a parent as closest person named the mother (81%), 95 (18%) named the father, and 4 (1%) named both parents. Consistent with the prediction, of the 574 firstborns, 307 (53%) named a parent as the closest person compared to 211 (45%) of the 467 last borns [\(\chi^2(1, n = 1041) = 7.10, P=.008, u =.08\)]. In sibships of three or more, 174 of 334 firstborns (52%), 134 of 311 middle borns (43%), and 120 of 255 lastborns (47%) named a parent. To test the prediction that middle borns are least likely to name parents, the firstborns and last borns were pooled, giving 134 of 311 middle borns (43%) vs. 294 of 589 non middle borns (50%), a marginally significant contrast [\(\chi^2(1, n = 900) = 3.80, P=.05, u =.07\)]. Thus, the parents’ most favored child tended to be the lastborn sibling. The rebel of the family tended to be a later born, and rebels tended to feel less close to their parents. In sibships of two, firstborns named a parent as the person to whom they were closest more often than did lastborns; in sibships of three or more, middle borns were the least likely to name their mother, but were more likely than firstborns and lastborns to name their father or a sibling.

Salmon (2003) investigated the impact of birth order on attitudes toward family, friends, and mating. 245 undergraduates completed a questionnaire relating to their attitudes toward friends and family as well as some aspects of mating behavior. Results revealed that birth order did have a significant impact in several areas. Middleborns expressed more positive views toward friends and less positive opinions of family in general. They were less inclined to help family in need than firstborns or lastborns. Mating strategies also appeared to be influenced by birth order, most
notably in the area of infidelity, with middleborns being the least likely birth order to cheat on a sexual partner. Previous studies (Salmon 1999; Salmon and Daly 1998) have found that sex and birth order are strong predictors of familial sentiments. Middleborns tend to be less family-oriented than firstborns or lastborns, while sex differences seem to focus on the utility of kin in certain domains.

Marleau, Saucier, and Allaire (2006) designed a study to define the relation between some sibling characteristics (birth order, sex, and interval between successive births) and some behavioral problems in children, on the one hand, and certain dimensions of the mother-child relationship, on the other hand. The sample, from National Longitudinal Survey of Children and Youth, included 1,196 families with 2 biological children aged 4 to 11 years. Behavioural problems and dimensions of the mother-child relationship were assessed by mothers. Repeated-measures multivariate analyses of variance were conducted. Analyses showed that first-born children have more internalized symptoms than second-born children. Second-born children also have more positive interactions with their mothers than first-born children. The interval between successive births does not affect these results. Thus, several differences emerged between siblings.

Andrews (2006) collected data on birth order and parent-offspring relations for 1,601 adolescents participating in the National Longitudinal Study of Adolescent Health and used it to test the hypotheses about the role of adolescent suicidal behavior in parent-offspring conflict. Among adolescents highly dissatisfied with their mothers, the odds that middleborns would make at least one suicide attempt was 23% that of first- and lastborns (p<.001), but their odds of receiving medical treatment for their attempts was 8.5 times greater than the odds for first- and lastborns (p=.032). The results were tentatively interpreted as supporting the hypothesis that adolescents use suicide attempts to leverage investment from their parents.

Kanagala (2006) carried out a study to identify the visually impaired adolescents’ perception of their parental behavior and identification of the effect of perceived parental behavior on their academic achievement. For this purpose, 24 blind adolescent boys, aged 14 to 20 years old (M = 17.25), studying in a residential special
school run by the state government in Chennai were taken. This research considered all those as blind who make use of Braille as their primary method of study. Results revealed that most of the parents were perceived as loving and protective, adopting an authoritative child rearing style with low involvement. Mothers were perceived slightly more loving and protecting, more authoritative and less involved than fathers. Parental attitudes as loving, rejection and protection were considered. The subjects perceived their parents as loving 88.75% and protecting 87.30%. This contradicts the findings of Mittal (2003) which indicated that blind males perceived their parents as rejecting them. Wright (1983) stated that parents of children with disabilities tend to be more overprotective than parents of non-disabled children as they are usually more concerned with their children’s safety. Mothers were perceived slightly more loving 90.52% and protecting 88.13% than fathers. DoteKwan (1995) and Behl, Akers, Boyce and Taylor (1996) stated that mothers of visually impaired children can display appropriate affection. Adolescents tend to link more emotional attributes to mothers and more rigid and formal attributes to fathers (Pipp, Shaver, Jennings, Lamborn, and Fischer (1985).

Marni, Kan, and McHale (2007) in his study used a person-oriented approach to examine links between adolescents' experiences with parents and peers. Cluster analysis classified 361, White, working- and middle-class youth (mean age=12.16 years) based on mothers' and fathers' reports of parental acceptance and adolescents' reports of perceived peer competence. Three patterns were identified: high mother and father acceptance and high peer competence; low mother and father acceptance and high peer competence; and high mother acceptance, moderate father acceptance, and low peer competence. The groups differed with respect to youth's and parents' individual characteristics, family and peer dynamics, and youth functioning over time.

McHale, Whiteman, Kim and Crouter (2007) studied sibling relationships of African American youths and family and youth characteristics linked to sibling dynamics. Participants were fathers, mothers, and 2 siblings (M = 14.04 and M = 10.34 years of age) from 172 working-middle class 2-parent families (family size). Cluster analyses of data collected in home interviews revealed 3 sibling relationship
types: positive, negative, and distant. Parent education was lower, parent religiosity higher, and parent-child relationships more positive in the positive group; maternal discrimination experiences were higher in the negative group; youth ethnic identity was stronger in the positive group; and youth depression and risky behavior were higher in the negative group. The findings targeted socio cultural factors to consider in interventions for African American families.

Yixin (2007) carried out a study based on the clinical observation of children brought to a child mental health centre for guidance. This study showed that these parents tend to focus excessively on their one child. The reasons for this behavior were analyzed, the potential consequences of such parent-child relationships were elaborated, and the need for mental health awareness about healthy child-rearing patterns was suggested.

Hardman, Villiers, and Roby (2007); Salmon and Daly (1998) found that middleborn children in a sample of adults indicated themselves to be less closely affiliated to their family than were firstborns and lastborns. They argued, along with Sulloway (1996) that this effect results from middleborn children losing out in the competition with firstborns and lastborns for parental investment. The study reported here was an attempt to replicate this finding using three samples of children and a sample of adults. They followed the methodology of Salmon and Daly and, additionally, reported data on inter-sibling affiliation that had not been reported in their study. None of the results showed any evidence of a middle born effect. Some possible reasons are presented as to why birth order effects in familial sentiment might be hard to find.

Suitor and Pillemer (2007) used data on 426 older mothers' relationships with their 1,823 adult children to explore the relationship between birth order and parental favoritism. The findings demonstrate that birth order continues to play an important role in explaining favoritism when families enter later stages of the life course. Last-born adult children were most likely to be named as those to whom their mothers were most emotionally close; firstborn children were most likely to be chosen as those to whom mothers would turn to, when facing personal problems or crises. Further
analyses revealed that these patterns remained largely unaffected by family size, race, and child spacing. Middle born children were substantially underrepresented in mothers' choices; such a pattern is particularly striking considering that the number of middle-born children far exceeded that of firstborn and last-born children in the sample. Thus, found that the firstborn or lastborn child was systematically preferred over the middle born child by mothers in old age.

Price (2008) used data from the American Time Use Survey; found that a first-born child receives 20-30 more minutes of quality time each day with his or her parent than a second-born child of the same age from a similar family. The birth-order difference results from parents giving roughly equal time to each child at any point in time while the amount of parent-child quality time decreases as children get older. Results revealed that the majority of parents give equal time to each of their children (74 percent of fathers and 63 percent of mothers). When there is unequal time allocation, it is more likely to favor the younger child, possibly giving the parents the impression that they are actually giving preferential treatment to the second-born child. The second fact is that parent-child interaction decreases as children age and particularly as the oldest child ages. For example, quality time spent with one’s father drops from 118 minutes each day at age four to 50 minutes at age 13. The corresponding drop for quality time with one’s mother is 150 minutes down to 60 minutes.

Ward, Spitze, and Deane (2009) Though parent-adult child ties are generally positive, most parents have multiple children whose relations may yield collective ambivalence combining higher and lower quality. Little research has investigated these multiple relations. NSFH respondents aged 50+ with adult children ($N = 2,270$) are used to assess patterns of quality and contact across multiple children in the same family. This illuminates mixed experiences, especially for lowest quality and contact across children, contributing to collective ambivalence in parent-adult child relations within families. Having more children increases the prevalence of both positive and negative relations. Stepchildren exhibit more negative relations than non step
children, even in the same family. Mothers have more positive but not more negative relations than fathers; but mothers have more negative relations with stepchildren.

Keating (2009) conducted a study to examine the effects of birth order on parent-child communication. One research question and one hypothesis were proposed, looking at birth order’s effects on parental pressure felt by children and closeness to parents. Oldest children reported greater parental pressure than middle-borns, but not last-borns. Oldest children also reported higher levels of intimate disclosure than middle-borns, but not last-borns.

Pollet and Nettle (2009) sought to test the belief that although middle born college students commonly report worse family relationships than other birth orders, it is unknown whether this effect persists into adulthood. Therefore, they investigated the effect of birth order on self-reported family and friend relationships among a large sample of Dutch adults (n = 794). Results revealed that middle borns did not differ from other birth orders in relationships with their father, mother, sibling or close friend. Middle borns did not prefer a friend over their father, mother or sibling more than other birth orders. Evidence for a “neglected middle born effect” appeared only in a within-family design for siblings. Firstborns were more likely to report very good sibling relationships and preferred a sibling over a friend. The results are discussed in terms of kin competition and inclusive fitness.

Kamble (2009) carried out a study on the “Influence of parental relationship and self concept on academic achievement of PUC students”. This study was undertaken in Dharwad during 2008-09. The aim was to analyze parental relationship and self concept, to assess the interrelationship of parental relationship and academic achievement of students, to know the influence of parental relationship and self concept on academic achievement of students, to know the influence of selected factors on parental relationship, self concept and academic achievement. Results revealed that students perceived their mothers to be more loving than fathers while fathers exhibited more symbolic punishment, rejection, object punishment, demanding, indifferent and neglecting behavior than mother. A significant association was found between mothers and fathers relationship with their children on protecting
symbolic punishment, rejection, object punishment, demanding, indifferent, symbolic reward, loving and neglecting dimensions

Matheen (2011) conducted a study discussing on the dynamics of parent child relationship and emotional maturity of the young girls. The sample consisted of 50 students, from JBAS College for Women, Chennai. Their age group was 19-22 and they were 24 first borns, 16 second borns and 9 later borns. The data was collected on the two main measures – a) Parent-Child Relationship and b) Emotional Maturity. The study adopted a descriptive design and selected certain variables such as age, birth order, parent status, living arrangement, and number of siblings, parent education and religion to describe the socio-demographic information of the sample. The main variables of the study were emotional maturity included by its five dimensions emotional unstability, emotional regression, social maladjustment, personal disintegration, and lack of independence, and parent child relationships of both parents, described by its ten dimensions namely protecting, symbolic punishment, rejecting, object punishment, demanding, indifferent, symbolic reward, loving, object reward, and neglecting. Results revealed that the differences in the mean of the parent-child relationship appear minor, but mother-child show a better score when compared to father-child in all the nine dimensions except the object reward. Further, father neglecting, father symbolic reward, father object reward, mother protecting, mother neglecting, symbolic punishment, mother rejecting, mother object punishment, mother demanding, and mother symbolic reward significantly correlated with emotional unstability at p<0.01, and of them, father symbolic reward, father object reward, mother protecting, and mother symbolic reward showed negative correlations. Father protecting, father symbolic punishment, father rejecting, father object punishment, father loving, and mother object reward correlated with emotional unstability at p<0.05, and of them father protecting, father loving, and mother object reward showed negative correlations.

Salmon, Todd, Shackelford, and Michalski (2012) assessed perceived parental favoritism among 680 college students in two Western, industrialized countries (United States and Canada). One indicator of a high level of parental investment is
being a parental favorite. The participants ranged in age from 18 to 50 years, with a mean of 20.1 years (SD = 3.6 years). 39% of participants were male and 61% were female. Sixty-two participants indicated that they were only children and were excluded from further analyses. Of the remaining participants, 41% indicated that they were from sibships of two (family size), 29% from sibships of three, 12% from sibships of four, and 9% from sibships of five or more. Forty-one percent of participants were firstborns, 21% were middle borns, and 29% were lastborns. After excluding only children and participants that did not report a parental favorite, 306 participants were left. Using self-reports from a sample of several hundred young adults, support for two hypotheses related to the influence of birth order and sex on parental favoritism was secured. Fathers were not perceived as having a favorite child more often than were mothers, but were more likely to favor female children than are mothers. Mothers were perceived to be more likely to favor female children in blended sibships. Both mothers and fathers were perceived as favoring genetically-related children. The results also suggested that the birth order of the parental favorite varies with the birth order of the participant. Firstborns and lastborns reported a pattern of favoritism that suggested parents favor firstborn and lastborn children.

Sharma (2012) carried out a study to determine the effect of gender and academic achievement on Mother Child Relationship of secondary school students of Shimla District. Parent Child Relationship Scale (PCRS) by Nalini Rao (2011) was administered on a sample of 160 secondary school teachers selected through random cluster sampling technique from 10 government schools of Shimla districts of Himachal Pradesh. Statistical technique of t-test was used to analyze the Mother Child Relationship (MCR) scores of secondary school students. The results indicated boys and girls differ significantly in mother child relationship on symbolic punishment and object punishment areas of mother child relationship. Further it was found that students with low and high level of academic achievement differ significantly in mother child relationship on loving, symbolic reward, indifferent, symbolic punishment, object punishment, demanding and neglecting areas of mother child relationship.
Khurshid, Butt, and Hafeez (2012) carried out a descriptive study which used an indigenous research inventory to measure acceptance and rejection among university students. The study was carried out on a sample of 100 university students and it explored the impact of demographic variables including gender, age, birth order, and family income level on determining the level of acceptance and rejection. Results of the study revealed that the phenomenon of university students’ acceptance and rejection does exist. Male students experience higher parental and siblings’ rejection than females. Students from higher income families experience higher rejection compared to students from low income families. The findings also indicated that different demographic variables contribute significantly in determining the perceived level of acceptance and rejection.

Shaban, and Mattoo (2012) aimed at studying the relationship of adolescent boys and girls from district Anantnag of Kashmir valley with their mothers and fathers. To gather information on a sample of 40 male and 40 female respondents, Parent-Child relationship Scale developed by Nalini Rao (1989) was used. The results revealed that a highly significant difference was observed between the use of symbolic punishment, rejecting, loving dimension and gender of the child while no significant difference was found when protecting dimension was compared to the gender of the adolescent.

Fahey, Keilthy, and Polek (2012) carried out a study based on the first wave of data on the child cohort (nine year-olds) in the Growing Up in Ireland (GUI) survey. It examined family relationships and their associations with parent and child well-being in the families of the nine year-olds and explores social inequalities in these aspects of family circumstances. International research has pointed to family size and birth order as important influences on child development. These are significant issues in Ireland since, despite the fall in average family size in recent decades; moderately large families are still common. Among the families of the nine year-olds in the GUI data, fully intact married couples have three children on average and 28% have four or more children. Less stable couples have fewer children and never married lone mothers have the smallest families (1.8 children on average). Family instability thus...
has an inhibiting effect on family size and does so particularly among mothers at lower levels of socio-economic status (SES).

Hotz and Pantano (2013) considered a model in which parents impose more stringent disciplinary environments in response to their earlier-born children’s poor performance in school in order to deter such outcomes for their later-born offspring. The results provided robust empirical evidence that school performance of children in the NLSY-C declines with birth order as does the stringency of their parents’ disciplinary restrictions. And, when asked how they will respond if a child brought home bad grades, parents stated that they would be less likely to punish their later-born children.

2.4 CAREER CHOICE PATTERNS

Career choice patterns, birth order and family size:

Farley (1974) investigated birth order, rank, and branch of service in a random sample of 3,000 service men and women. Results revealed that firstborns garnered higher service ranks at a significantly greater frequency than latterborns, leading them to conclude that this finding was in concert with the Adlerian perspective that firstborns possess more needs for power and approval, as well as a fear of failure.

Gandy (1974) reviewed studies on the relationship of birth order to vocational interests in an attempt to support the hypotheses that firstborns are more directing, controlling, and organizing than laterborns, and that laterborns are more sociable, empathic, and sympathetic than firstborns. The research was inconsistent, contradictory, and speculative. Recommendations for further studies were presented, including (a) investigation of birth-order personality differences within rather than between vocations; (b) additional study of the influence of sibling associations on the development of interests and personality and the effect of personality on occupational preferences; (c) research using Adlerian concepts; and (d) continued emphasis on methodological and theoretical considerations.

Farley (1978) conducted a study to investigate scholastic achievement and creativity in females of two and three-sibling families. The subjects were obtained
from 2 classes in education at the University of Wisconsin. All students in classes were administered the creativity measure, and achievement and family structure data were obtained. No student knew the hypothesis of the study. The criterion for inclusion in the analysis was membership in a two or three-sibling family that supposedly was completed. Five groups were constructed consisting of first born and second borns in two-sibling families; and first, second and third borns in three sibling families, with Ns being equalized to 10 per group using random elimination where necessary. All subjects were administered the unusual questions test in group settings as a measure of creativity with the measure of creativity as a cumulative college grade point average (GPA). The creativity measure was given under timed conditions (10 minutes for completion) and originality was scored using the criteria supplied by Torrance. The mean age in years for the subjects in each of the groups was as follows: two-sibling families for first borns M=21.1 years and for second borns M=21.1 years; three-sibling families for first borns M=20.6 years, for second borns M=21.2 years and for third borns M=20.9 years. These means were not significantly different. Where two siblings were concerned, the mean creativity scores were 9.8 (S.D=13.6) for first borns and 24.7 (S.D=18.7) for second borns. The predicted difference was significant by one tailed t-test (t=1.93; p<.025). It was in the expected direction of greater creativity in later over first borns. Indeed, the mean creativity scores of the second borns were 2.5 times larger than that of the first borns. Thus the predictions of creativity were supported significantly for the two-sibling family, but for the three-sibling family, a non-significant trend suggested that creativity might increase from first to second borns but decrease from second to third borns. For scholastic achievement, the results for the two and three sibling family were in accord with the prediction but were not significant.

Wagner, Schubert, and Schubert (1979) investigated sibling variables, including family size, ordinal position, and gender among the first 38 presidents of the United States. They found that firstborns were over-represented i.e. became presidents while last, middle, and only children were under-represented i.e. less likely that they became presidents. Additionally, the presidents were from predominantly large families (family size) and there was an overrepresentation of male siblings in these families.
Miller and Gerard (1979) reviewed studies which link children's creativity to family background characteristics and parent-child relations. Sample and measurement differences were considered in resolving discrepancies and integrating the findings. Social class was positively related to children's verbal creativity, but findings were mixed when nonverbal assessments were used. Younger children who are distant from sibs in age tend to be less creative; other birth-order findings were inconsistent. Gender differences in creativity were absent in most samples of very young children, but differences appeared and widened developmentally, with older girls doing better on verbal tests and older boys on figural tests.

Wilks and Tfiompson (1979) investigated the relationship between birth order and assessed creative ability giving specific attention to characteristics of the measures used. Subjects were 68 elementary school children ranging in age from 6-9 to 9-10. Assessment of creativity was obtained from the Torrance Test of Creative Thinking, the Penguin Picture Story Task, and the Singer Fantasy Questionnaire. No ordinal differences were found on the creativity measures for these elementary school children in Grades 1 through 4.

Patterson and Tinsley (1980) carried out a study to examine the relationship between birth order, vocational choice, choice of college, and selected personality characteristics among Black college students. The 16 Personality Factors Questionnaire, the Assessment of Career Decision Making, and a research questionnaire were administered to a sample of 231 students enrolled in freshman orientation classes at Grambling State University, Grambling, Louisiana. Analysis of variance revealed no significant differences among the birth order groups. It was concluded that the validity of birth order theory for Black college students should be questioned.

Palmer (1981) conducted a study to explore the relationship between birth order and occupational choice. In particular, if an occupation such as teaching is chosen on the basis of birth order and personality traits, it would be expected that first borns, because they are compliant and person oriented, would choose a teaching
career. The two main hypotheses proposed were: 1) that there is no significant difference in the relationship between birth order and occupational choice, and 2) that first borns are engaged in compliant person oriented occupations as frequently as later borns. The sample consisted of 209 families. Analysis of data was accomplished by chi square to determine differences between small families and large families. When the relevant variables were appropriately considered, there was no meaningful relationship between birth order and vocational interest. The study suggests that tighter controls be used in further investigations and that ordinal position differences within the family rather than independent characteristics be used to determine vocational choice.

Melillo (1983) was among the first to investigate the possible differences between actual ordinal birth order position and psychologically perceived birth order position in a study of female doctorates employed in a university setting. Additional variables examined included: age, parental attitudes, occupational position, academic discipline, number of siblings, and family size. Findings supported previous research that revealed significantly higher numbers of only or eldest child female doctorates, but over half the sample was not first born and more than 40% were neither, first or only children. Melillo also examined the perceived ordinal position of these women, but the results did not support any significant differences between perceived birth order position and actual birth order position. Rather, parental encouragement and support toward daughters appeared to be more predictive of career achievement than family size and birth order, perceived or actual.

Bryant (1987) examined the relationship between vocational interest and birth order in a sample of firstborn and lastborn female high school students, ages 16-17 years. The results revealed significant differences in various aspects of vocational preference between firstborns and lastborns, including: higher levels of optimism and self-esteem among firstborns, higher levels of interest in academic careers, working with others, and management opportunities among firstborns.
Davis (1997) investigated the possibility that birth order affects the degree to which individuals attain higher status. The study examined the relationships between birth order, sibship size, and several variables thought to index future status attainment (status striving) in a random sample of Canadians. Firstborn children appeared to be more status oriented than lastborns, and this effect is mediated by sibship size. While firstborn children were unaffected by the number of younger siblings they have, the status ambitions of youngest children decreased the more older siblings they had. Birth order effects on status attainment were not as strong as they were on status ambitions.

González-Pinto, Yllá, Ortiz, and Zupiria (2003) carried out a study on the birth order of the children and family size as well as other psychosocial variables. The sample comprising of 6,013 students studying in different careers and courses of the University of the Basque Country (UBC) were compared in order to relate these data with the choice of type of university studies. The mean age was 20.26 years. The following instruments were used: a socio demographic questionnaire, the Eysenck Personality Scale and Yllá Alexithymia Scale. Results revealed that the presence of women was greater in all the career studies except for engineering where the proportion of men was greater. The data verifying the relationship between being the youngest or intermediate child of a family of three or more children and studying Journalism and Fine Arts and that the first born of families of two or more children was more represented in Engineering. It was interesting that there were fewer only children in Medicine where children of families of three or more, both first-born as well as intermediate, go. These variables, as well as extraversion, neuroticism and alexithymia, were different in the different career studies. Thus, besides family size and birth order, personality patterns were also studied where it was observed that the female university students scored higher in the neuroticism scale and that the levels of Alexithymia were higher among the men. Further, relations were found between child birth order and family size and personality, in the sense that the Medical and Odontology careers presented lower scores in Alexithymia while the more technical careers such as Engineering are those that present a higher alexithymia. Medicine and
Odontology, followed by Mathematics and Journalism, obtained the highest scores in neuroticism. Engineering students obtain the lowest neuroticism. The most extroverted students were those from Journalism, Chemistry, Economics and Odontology. Thus, the choice of university studies was associated to gender, birth order, family size and personality patterns.

Herrera, Zajonc, Weiczorkowska, and Cichomski (2003) in their first study on two hundred thirty-one students and 10 teachers from Eleva–Strum Central High School who completed a 25-item questionnaires that asked them whether a firstborn or a last-born is more likely to work in each of several occupations. One hundred seventeen (49%) of the participants were female, 123 (51%) were male, and the gender of 1 of the participants was unknown. All but 10 of the participants were between the ages of 12 and 18 ($M_1=16, SD_1=7.1$). The questionnaire included the following occupations, which were ranked according to the Standard International Occupational Prestige Scale on a scale from 0 to 100 (Treiman, 1977): firefighter (35), musician (45), photographer (45), farmer (47), stunt man (49), computer programmer (51), actor (52), journalist (55), accountant (55), social worker (56), artist (57), police officer (60), clergy (60), veterinarian (61), author (62), engineer (62), politician (63), high school teacher (64), airline pilot (66), dentist (70), architect (72), lawyer (73), college professor (78), physician (78), and astronaut (80). Participants were simply asked whether a firstborn or a last-born was more likely to work in each of the occupations. Results revealed that participants believed that a firstborn was more likely to work as an accountant (55), airline pilot (66), architect (72), astronaut (80), college professor (78), computer programmer (51), dentist (70), high school teacher (64), lawyer (73), physician (78), politician (63), and veterinarian (61). They believed also that a last-born is more likely to work as an actor (52), artist (57), clergy (60), firefighter (35), journalist (55), musician (45), photographer (45), social worker (56), and stunt man (49). The average prestige rank of occupations attributed to firstborns was 67.6, and that attributed to last borns was 50.4. The correlation between attributed prestige of occupation and birth rank was $r=.76$. 

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Herrera, Zajonc, Weiczorkowska, and Cichomski (2003) conducted their second study where participants (203 Stanford University undergraduates) completed an 11-item questionnaire that asked them whether a firstborn or a last-born is more likely to work in each of several occupations. The list of occupations included firefighter (35), musician (45), photographer (45), farmer (47), stunt man (49), accountant (55), police officer (60), high school teacher (64), lawyer (73), surgeon (78), and astronaut (80). Results revealed that participants believed a firstborn was more likely to work as an accountant (55), astronaut (80), farmer (47), lawyer (73), police officer (60), and surgeon (78). They believed a last-born was more likely to work as a firefighter (35), high school teacher (64), musician (45), photographer (45), and stunt man (49). The average occupational prestige ranking assigned to firstborns was 65.5, and that assigned to last-borns was 47.6. Thus, participants believed that (a) a firstborn is more likely to work as a farmer, (b) a last-born is more likely to work as a high school teacher, and (c) a firstborn is more likely to work as a police officer. In this study, the correlation between the average birth rank and the occupational prestige scores was .73.

Herrera, Zajonc, Weiczorkowska, and Cichomski (2003) carried out their third study on a sample of respondents, representative of the Polish population, at least 18 years of age. They were interviewed in 1997 and 1999 as part of the fifth and sixth PGSS conducted by the Institute for Social Studies at the University of Warsaw. Results revealed the average occupational prestige attained by respondents of the various birth ranks and family sizes. Because occupational prestige is correlated with the age of the respondents, analyses of covariance (ANCOVAs) with age as covariate were carried out to test these effects. Occupational prestige (low occupational prestige comprising of careers like firefighter, musician, photographer, farmer, and stuntman; while high occupational prestige comprising of careers like high school teacher, lawyer, surgeon, police officer, and astronaut) was found to vary significantly with birth order and with family size, $F(4, 2899) = 4.01, p = .003$, and $F(4, 2441) = 12.83, p = .001$, respectively. The trend is not entirely monotone for birth order, probably because of the instability of data for the lowest birth rank (i.e., there are few families
with five or more members). The family size data, however, show a consistent decline in occupational prestige. The standard errors for birth rank and family size were 0.28 and 0.30, respectively. All differences except between Ranks 2 and 3 and Ranks 4 and 5 were significant. Variations with family size were reliable without exception. ANCOVAs with age of the respondent as covariate were carried out on the data. Years of schooling as a function of birth order and family size were both significant, $F(4, 3245) = 8.31, p < .0001$, and $F(4, 2743) = 22.58, p < .0001$, respectively. The standard errors for birth rank and family size were 0.055 and 0.058, respectively. Except for Ranks 4 and 5, all other birth order and family size means were significantly different from each other.

Collins (2006) surveyed a sample of 100 Providence College students, a private liberal arts New England College and asked them to report their birth order, perceived traits, career choice, and college major. The sample included 38 males and 63 females. The subjects’ graduation year was also noted: 15 were freshman, 34 sophomores, 16 juniors, and 35 seniors. They were asked to complete a survey regarding their birth order, college major, year of anticipated graduation, career the subject intends to pursue, number of siblings in their families, how they personally perceive their personality traits, and how their family members perceive their personality traits. Participants’ ages ranged from 18 to 22, with the mean age being 20.13 years. Participants were categorized by birth order as well: 6% were only children, 51% were first children, 12% were middle born children, and 31% were last born children. It was hypothesized that in the absence of the gender variable, first born children were expected to favor career choices that involve business or mathematics. These first born children were expected to choose majors in college that relate to their field of interest such as management, accounting, and finance. They may also be interested in fields such as chemistry or physics. Only children often behave as first born children and will therefore they choose majors similar to first-borns in college. In sharp contrast with their older siblings, middle children tend to excel in interpersonal relations and are likely to opt for careers in human relations to seek jobs in which there are a great deal of group collaboration. Middle children
choose majors such as psychology, sociology, and social work. However, the youngest children in a family are thought to be the most creative and innovative thinkers. These children often find careers in which abstract thought and creativity is valued such as teaching, studio art, and the performance arts. Unfortunately there were very few statistically significant findings. There was no relationship between birth order and college major; however there was a statistically significant relationship between Factor 2, which is a factor analyzed grouping of personality traits and education majors. The Factor 2 group of traits is creative and imaginative. These traits are typically last child personality traits which support the hypothesis that last born children tend to chose education as a college major and career choice. Results revealed that psychological birth-order may play a significant role/responsibility in shaping a child’s career choice.

Argys, Rees, Averett, and Witoonchart (2006) carried out a study to examine the relationship between birth order and participation in school sports and other extracurricular activities. The results suggested that having an older sibling was associated with an increased probability that males played baseball and football, were members of the school swim team, and participated in cheerleading. Female 10th graders with older siblings were less likely to engage in a variety of extracurricular activities including school band, community service, and yearbook. These results provided additional evidence that birth order is related to adolescent behavior.

Cramer, Dilling, Hockemeyer and Nicholson (2011) conducted a study to examine the correlation of birth order and choice of college major. It was hypothesized that one’s position of birth within the family has an impact on college major choice. A total of 146 college students with junior and senior status from the population of a liberal arts university in northeastern Indiana were surveyed. Respondents answered an online instrument distributed via email to the junior and senior status students at the given institution. Of the sample, 67.8 percent were female and 32.2 percent were male. The responses were almost evenly distributed among juniors and seniors, with a slight lean toward junior respondents. Responses were
collected from 81 junior respondents and 62 senior respondents (56.6% and 43.4%, respectively). The comparison between birth order and choice of college major was assessed using BOCM (Birth-Order, College Major) Survey. A chi-square analysis was used to examine similarities. An alpha level of .05 was used to determine the level of significance. The initial cross-tab was the birth order against specific majors listed on the survey. The level of significance was .542. The second level of significance discovered was .329. No significant association was found between the birth order and college major choice. The study failed to reject the null hypothesis.

Dattner (2012) stated that depending on the birth position, there are special roles within families, leading to different adaptation patterns and different personalities, for instance, first borns tend to take up science, or engineering; middle-borns work in nursing, and firefighting; youngest borns go into art, and designing.

Olaosebikan and Olusakin (2014) carried out a study to investigate the effects of parental influence on adolescents’ career choice on secondary schools students in Badagry Local Government Area of Lagos State. The sample consisted of three hundred respondents who were randomly selected from ten purposely selected secondary schools (3 Model Colleges, 4 Non-Model Colleges, and 3 Private Colleges). The instrument used was a questionnaire which was administered to the respondents personally by the researcher. Five (5) null hypotheses were formulated and tested. Chi-square, using analysis of contingency table was used to test the hypotheses. All hypotheses were tested at the 0.05 level of significance of variable of sex, class of school, and type of school as to the effects of parental influence on adolescents’ career choice on secondary schools students in the Local Government Area. The findings of the study showed that 48.36% of the respondents agreed to parents influencing their career choice. On the average, 21.5% of the respondents agreed that their parents’ line of business influenced their career choice, while 78.5% disagreed. On the whole, 30% of the respondents agreed that they chose the family career because they need to sustain the family business. In addition, three (3) out of the five (5) null hypotheses tested were accepted because there were no significant
differences in the variables compared. These were hypotheses 1, 3, and 5. Hypotheses 2 and 4 were rejected as there were significant differences in the variables compared. The results of these findings seem to indicate that adolescents in secondary schools in Badagry Local Government Area of Lagos State have some form of independence in making career choices.