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Relationships Between Psychological Birth Order and Perfectionism

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Abstract

Research examining ordinal birth order in relation to various variables has continued for decades with mixed results. However, with the resurgence of an Adlerian conceptualization of birth order, studies have begun producing more meaningful and ecologically valid results. This study explored relationships between birth order and perfectionism using the psychological birth order construct, which conceptualizes birth order in terms of a child's role in the family, rather than their order in successive births. Specifically, this study tested the hypothesis that psychological birth order would be a better predictor than ordinal birth order of personal and family perfectionism scores. Measures of ordinal birth order, psychological birth order, personal perfectionism, and family perfectionism were distributed to students of Tyndale University and Eastern Nazarene College. The data collected from these measures supported the primary hypothesis, with psychological firstborn scores birth order predicting high personal and family standards for perfection for female participants. On this basis, it can be surmised that the role a child adopts within their family is related to enduring adult traits. However, it is unclear whether children adopt a psychological firstborn role and then exhibit perfectionism or whether innate traits toward or away from perfectionism may drive the psychological role children adopt within their family. Therefore, it may be worthwhile for future studies to consider the extent to which psychological birth order may be determined by innate traits such as perfectionism.

Relationships Between Psychological Birth Order and Perfectionism

Beginning in Alfred Adler's era, the concept of birth order has been studied at length with mixed results (Melillo, 1983; Eckstein, 2000). However, in recent years Adlerian researchers have re-examined their progenitor's conceptualization of birth order, and consequently refined it (Stewart, 2012; Campbell et al., 1991). They determined that rather than ordinal birth order (OBO), Adler's chief concern was the child's psychological position or, "the perceived role that a person occupies in the family" (Stewart et al., 2001, p.363). Once researchers began using this construct, birth order studies began producing more consistent and significant results. Consequently, it is imperative that researchers readdress birth order studies using the psychological birth order (PBO) construct, which may aid in resolving prior conflicting results. Since the conception of this construct, birth order studies have examined PBO in relation to other Adlerian concepts such as family atmosphere, parenting styles, and perfectionism. This study built upon past research while providing new insights by investigating the relationships between ordinal position, psychological position, and perfectionism by inquiring: What is the degree to which ordinal and psychological positions predict personal and family perfectionism?

Adlerian Birth Order Theory

Any sound birth order research must pay tribute to the progenitor of birth order theory, Alfred Adler. This obligation was respected by Shulman and Mosak (1977), who noted that Adler recognized birth order as "a given of the child's existence, a location in a social structure" (p.114). In this way, birth order must be

viewed as a social phenomenon which is influenced by contextual factors that endure in adult life. Shulman and Mosak (1977) also provided definitions for three useful constructs for birth order research. To elaborate, OBO is understood as the order in which the child was born, birth order position refers to the distinctive positions that Adler described with recognizable and enduring characteristics, and PBO relates to the location of a child within the family structure. Although some individuals may have the same OBO and PBO, others may not. For example, an ordinal youngest child who is raised with their older siblings is likely to fulfill the psychological role of the youngest child. However, an ordinal firstborn child who is raised apart from their siblings may adopt the role of a psychological only child due to the lack of sibling interaction. Similarly, an ordinal middle child may take on a firstborn role because their older sibling left home at a young age, leaving them to adopt the responsibilities associated with being a firstborn child. Thus, if the ordinal youngest child, oldest child, and middle child were only tested on a measure of OBO, only the ordinal youngest child would demonstrate traits synonymous with their OBO while the other two participants would not exhibit the expected traits associated with their OBO but instead demonstrate traits related to their PBO (i.e., only and firstborn children). Shulman and Mosak (1977) cited PBO as a key determinant within birth order studies and lamented that previous birth order research failed to account for this construct. Shulman and Mosak's (1977) most noteworthy contribution was their understanding of social role theory as it relates directly to an individual's PBO. To elaborate, since PBO is synonymous with role location, children choose from

the available roles within their family system, adopt the behavioural expectations that accompany the role, and allow the role to influence their adult traits if they are satisfied within the role.

Eckstein and Kaufman (2012) pondered various developmental factors in relation to birth order effects. Among these factors, the concepts of sibling de-identification and parental feedback have implications for PBO. For instance, Adler's construct of sibling de-identification is defined as "the tendency for siblings [...] to define themselves as different from one another in order to produce their own identities within the family" (p.62). These identities or roles promote the development of distinct traits and particular behaviours that transcend the family context. Next, Eckstein and Kaufman (2012) referenced several studies (Zajonc, 2001; Hoopes & Harper, 1987; Lasswell, 1948) which observed that parents were either consciously or unconsciously influenced by birth order personality stereotypes, which in turn caused them to reinforce their children's behaviour to correspond to the stereotypes. The authors note that it is highly plausible that this parental feedback creates self-fulfilling prophecies, in which children succumb to the stereotype. After establishing these connections, Eckstein and Kaufman (2012) recommended that future researchers account for the subjective experience of the individual inherent in the role of birth order. Although they did praise the PBO construct, Eckstein and Kaufman (2012) argued that OBO is still relevant for birth order research.

Carich and Willingham (1987) argued for a bridge between Individual Psychology and family systems theory that might help to explain the PBO

construct. First, similar to the constructivist notion that people construct their own views of reality, Adler argued that individual responses to the environment are grounded in subjective perception. Second, Family Systems Theory emphasizes the importance of social contexts such as the family. Adler also recognized the importance of social contexts, asserting how “unscientific it would be to study the individual without taking his social context fully into account” (Adler, 1956, as cited in Carich & Willingham, 1987, p.74). Inspired by these conceptions of constructivism and the family as a social context, the theoretical basis of this study is not limited to Adlerian psychology but also pays tribute to Individual Psychology and Family Systems Theory.

Carlson et al. (2006) explored the influence of PBO, parenting styles, and family atmosphere on personality. In this study, PBO was described in terms of five unique psychological positions: only, oldest, second, middle, and youngest. Carlson et al. (2006) theorized that only children are perfectionists, oldest children value control, second-born children dislike order, middle children are diplomats, and youngest children are ambitious attention seekers. Furthermore, Carlson et al. (2006) theorized that if children perceived that their parents lacked a particular characteristic, the children may behave differently to make up for a perceived lack in their parents. To illustrate this notion, Carlson et al. (2006) provided an example of a child who attempted to discipline their siblings instead of their permissive parent in the hopes of cultivating a sense of family order. Thus, Carlson et al. (2006) emphasized that contextual factors such as family atmosphere and parenting styles may contribute to the development of PBO.

Correlational Studies

Ordinal Birth Order and Psychological Birth Order

Melillo's (1983) study demonstrated the value of measuring PBO with the PBOI (Campbell et al., 1991) by attempting to conduct a PBO study without it. Melillo (1983) observed that Adlerians were particularly concerned with birth order effects on achievement orientation and recognized that statistics have supported the notion that ordinal oldest or only women working in academic fields have been noted to be high achievers with lofty career goals. Consequently, Melillo's (1983) study investigated the relationship between academic women, PBO, OBO, family attitudes towards higher education, and personal academic achievement. Like other birth order studies, Melillo (1983) collected data from participants' age, number and gender of siblings, and family size variables. However, with the development of the PBOI (Campbell et al., 1991) a decade ahead, Melillo (1983) used a three-item questionnaire to determine participants' OBO and PBO. The extent of PBO measurement in this study was a question which asked for the respondent's personal perception of her birth order position in the family. As a result, findings indicated that PBO was not significantly related to high achievement in women. Nonetheless, Melillo (1983) observed that ordinal oldest and only positions were related to achievement orientation in women and that participants' parents encouraged their daughters to pursue higher education.

Birth Order Research Methodologies

Birth order research has historically been criticized for failing to control extraneous variables and for examining OBO without PBO. Watkins (1992)

examined extraneous variables in birth order research, such as PBO, gender, siblings' gender, family size, age spacing, and socioeconomic status. Watkins (1992) also compiled characteristics of 25 birth order studies, including the age range of the sample, assessment methods used, variables controlled for, study results, and their implications. He noted that participants' race was often unspecified, that researchers relied too heavily on self-developed questionnaires, that PBO did not have an assessment tool, and that the aforementioned extraneous variables were not controlled in most of the studies. Since the publication of this review, the Psychological Birth Order Inventory or the PBOI (Campbell et al., 1991) has been established as a reliable and valid tool for measuring PBO. Nonetheless, Watkins' (1992) review demands that extraneous or intervening variables in birth order research be properly addressed. Without controlling for these variables, birth order research cannot produce significant or consistent results. Therefore, this study will record potentially extraneous variables, ethnicity, and a reliable measure of the PBO construct.

Stewart (2012) reviewed Adler's conceptualization of birth order, examined the implications, and compared his methodological concerns for both OBO and PBO studies. First, Stewart (2012) postulated that many researchers misinterpreted Adler's theory which led to many non-Adlerian researchers making the assumption that OBO is the same as PBO — a notion that deviates from Adler's theory. Moreover, much of OBO research has been limited in revealing meaningful theoretical and practical relationships.

Stewart (2012) asserted that rather than relating OBO to dependent variables, it is much more beneficial to consider the mediating influence of PBO on dependent variables. He illustrated his point by contrasting the three types of analyses carried out in OBO studies with those that do employ the PBO construct. Ordinal birth order studies typically carry out one of these types of analyses: Type I, which uses a one-way Analysis of Variance to compare OBO categories to an interval/ratio dependent variable; Type II, which uses a Chi-Square test of independence to compare OBO categories to another categorical variable; and Type III, which uses OBO as a dependent variable. Conversely, PBO studies typically carry out these types of analyses: Type I, where PBO is assessed as interval data and is compared with other interval/ratio data, Type II, in which PBO is related to a nominal/ordinal dependent variable, Type III, in which PBO is the dependent variable studied alongside an interval/ratio independent variable, and Type IV, where PBO is also the dependent variable, but is measured with a nominal/ordinal independent variable. Stewart (2012) then compared OBO and PBO studies that measured perfectionism and observed that studies which measured PBO had substantially more meaningful results. Stewart (2012) advised future researchers to make use of covariance models with PBO acting as a mediator, and to focus on samples with non-European origins since the majority of birth order research has used samples with European origins.

Eckstein (2000) reviewed 154 empirical birth order studies and compiled personality profiles for each birth position. This study, along with the author's subsequent research (Eckstein et al., 2010) was grounded in an Adlerian

conceptualization of birth order effects. While reviewing the studies, Eckstein (2000) noted that oldest children had the highest academic achievement and achievement motivation, middle-born children had high sociability and the highest feelings of exclusion, youngest children had the highest self-esteem and empathy, and that only children possessed achievement and motivation akin to first-born children. Eckstein (2000) argued that these traits are not definitive, but provide a subjective understanding of a person's familial context.

A decade afterward, Eckstein et al. (2010) gathered 200 empirical birth order studies and reported findings with significant birth order effects. This time, the authors gathered personality characteristics related to birth order to create a clearer picture of each of the PBO positions. Eckstein et al. (2010) noted that within the studies particular personality traits seemed to be related to the four PBO positions. However, many of the studies were limited in their results since the majority focused on OBO, which sacrifices potential psychological constructs that provide context to an individual's subjective understanding of their environment rather than PBO. The personality traits by birth position noted in these studies are nearly identical to the traits observed by Eckstein (2000) in his prior study.

Adler (1956) asserted that, "it is not the child's number in the order of successive birth which influences his character, but the situation into which he is born and the way in which he interprets it" (Adler, 1956, as cited in Campbell et al., 1991, p.377). Many researchers have affirmed this assertion and the value of PBO studies (Shulman & Mosak, 1977; Manaster & Corsini, 1982) including

Campbell et al. (1991). Therefore, Campbell et al. (1991) created a study that would provide support for the PBO construct while developing a tool capable of measuring it. This study was necessary since the majority of birth order research classified individuals by their OBO instead of their PBO. To measure PBO, Campbell et al. (1991) developed the PBOI, which invites participants to agree or disagree with forty statements pertaining to four birth order positions. Their research design assessed relationships between PBO, OBO, gender and age of participants and their siblings using contingency tables and correlation coefficients. Campbell et al. (1991) found a significant relationship between PBO and OBO but noted that most participants had different ordinal and psychological positions. They also examined possible factors that could influence birth order perception, such as siblings' gender, birth spacing, and family size. Campbell et al. (1991) encouraged others to conduct research using the PBO construct and committed to increase the accuracy of the PBOI (Campbell et al., 1991) with continued validation studies.

Stewart and Campbell (1998) further tested the validity and reliability of the PBOI (Campbell et al., 1991) for measuring PBO. Stewart and Campbell (1998) developed the PBOI because other instruments used for measuring PBO were limited in their validity and reliability. They argued that the PBOI “relies upon a larger inventory of family of origin experience than existing measures and does not depend upon clinical experience or other diagnostic acumen to make the determination” (p.42). The instrument assesses participants' responses to statements which correspond to four psychological positions (i.e., first, middle,

youngest, and only) which were developed using Adler's descriptions of the feelings, behaviours, and experiences of persons within each position. For instance, the firstborn position is characterized by need for achievement and power, the middle child by competition or devaluation, the youngest child by sociability and being served, and the only child by parental control and anxiety from pressure. The 40 PBOI statements were analyzed for content validity by four experienced counselors with doctorates in Individual Psychology and were found to have high reliability following factor analysis. The authors also investigated their tool's construct validity using factor analysis by gender and found that the PBOI's factor structure for both genders was both stable and replicable. Moreover, items pertaining to the four PBOI scales were significantly related to their corresponding factors. Lastly, Stewart and Campbell (1998) assessed the PBOI's test-retest reliability over three and eight week periods and found correlations ranging from 0.80-0.94. Overall, their findings supported the validity and reliability of the PBOI.

Perfectionism

Personal Perfectionism

Stoltz and Ashby (2007) examined the relationship between perfectionism and personality traits. Building on their prior research (Ashby et al., 1998, 2006) they hypothesized that adaptive perfectionists, maladaptive perfectionists, and non-perfectionists would significantly differ in personality. Stoltz and Ashby (2007) used the Almost Perfect Scale-Revised (APS-R; Slaney et al., 1996), which is a 23-item inventory with three subscales (i.e., personal standards,

organization, and discrepancy between performance expectations and result) to measure participants' dimensions of perfectionism and the Basic Adlerian Principles for Interpersonal Success-Adult Form (BASIS-A; Wheeler et al., 1993), to measure personality priorities. Researchers categorized the participants as adaptive, maladaptive, or non-perfectionists using cluster analysis, and subsequently analyzed the data. The results of the study supported their hypothesis, revealing significant relationships between multidimensional perfectionism and personality. The authors' findings suggested that adaptive, maladaptive, and non-perfectionists interpret life differently and exhibit particular traits. Therefore, these findings may have implications for birth order positions and their corresponding traits (Eckstein, 2000).

Ashby et al. (2003) previously investigated the relationship between personal perfectionism and PBO. The researchers hypothesized that adaptive perfectionists, maladaptive perfectionists, and non-perfectionists would significantly differ from each other in PBOI (Campbell et al., 1991) scores. Ashby et al. (2003) invited participants to complete the Almost Perfect Scale-Revised (APS-R; Slaney et al., 2001) to measure whether respondents were perfectionists or not, and if they were perfectionists, to determine whether their perfectionism was adaptive or maladaptive. After analyzing the data, the researchers observed that the psychological positions of adaptive, maladaptive, and non-perfectionists differed significantly. In particular, Ashby et al. (2003) observed that maladaptive and non-perfectionists had significantly higher middle scale scores. Additionally, non-perfectionists scored significantly higher on the psychological youngest scale

than maladaptive perfectionists. However, Ashby et al. (2003) were surprised to find that the oldest and only child scales were not significantly related to adaptive perfectionism, specifically since they expected that perfectionists would exhibit oldest child characteristics such as striving for perfection, pleasing adults, feeling responsible for others, respecting authorities and rules, and having a strong desire for achievement. Ashby et al. (2003) suspected that this occurred because oldest children experience a psychological *dethroning* with their siblings, whereas perfectionists are never dethroned as they continue to strive and achieve no matter the cost. Thus, the researchers found significant support for a significant relationship between PBO and personal perfectionism.

Adler asserted that striving toward perfection was a natural human conquest with both positive and negative connotations. For instance, Adler described the adaptive perfectionist as an individual whose strivings are moderated by social interest, and the maladaptive perfectionist as an individual who resists social interest. These types of perfectionists were later categorized as normal or neurotic by Hamachek (1978) and have since been studied at length. LoCicero et al. (2000) hypothesized that since personality is generally established in childhood, relationships between perfectionism and personality found in adults should also be present in middle school children. LoCicero et al. (2000) observed that adaptive perfectionists scored significantly higher on the BASIS-A (Wheeler et al., 1993) measures of Belonging/Social Interest, Wanting Recognition, and Striving for Perfection than non-perfectionists, and maladaptive perfectionists scored significantly higher than non-perfectionists on Wanting Recognition and

Striving for Perfection. Thus, the results were consistent with the Adlerian conceptualization of multidimensional perfectionism in addition to supporting the hypothesis that multidimensional perfectionism and personality priorities are present in children and adults alike.

Mobley et al. (2005) observed that studies measuring perfectionism have traditionally been administered to samples with primarily European origins, which is a limitation of perfectionism research. In fact, Mobley et al. (2005) were only able to reference five studies which measured perfectionism using samples with primarily non-European origins. Furthermore, Mobley et al. (2005) were unable to locate any studies that examined the validity of any existing perfectionism scales with participants who did not have European origins. In response, Mobley et al. (2005) developed a study to test the cultural validity of the APS-R (Slaney et al., 2001), with a minority sample of African American college students. They hypothesized that there would be item equivalence between the two groups and that the factorial structure of the APS-R (Slaney et al., 2001) would be equivalent across both groups. After running multiple analyses, researchers found support for the cultural validity of the APS-R (Slaney et al., 2001) for non-European samples.

Family Perfectionism

Stewart et al. (2001) hypothesized that individuals with the psychological firstborn role would perceive their families as valuing high achievement, individuals with a middleborn role would perceive high degrees of conflict within their families, and individuals with a youngest role would perceive high social

support within their families. After utilizing multiple regression analyses, Stewart et al. (2001) found that 54% of their hypothesized relationships were observed. In particular, male middle child scores were strongly related to conflict-ridden families. In their second study, they examined how participants' PBO was related to their personality, and hypothesized that the PBOI's (Campbell et al., 1991) firstborn role would be related to high achievement and people-pleasing traits, the middle role would be related to defensive and impulsive traits, the youngest role would be associated with affable and sociable traits, and the only child role would correlate with desire for autonomy. In this study, Stewart et al. (2001) found that 48% of their hypothesized relationships were observed. The authors most notable findings were that the youngest role was more closely correlated with established personality traits rather than family atmosphere, and that the firstborn role was equally related to both atmosphere and trait variables. In summary, it was determined that family atmosphere and personality traits were related to PBO, thus bolstering our understanding of how family atmosphere contributes to PBO.

Testing the idea that perfectionism is developed in the context of one's family, DiPrima et al. (2011) analyzed the relationship between family variables and perfectionism using a sample of middle school students. The authors began by offering readers operational definitions of adaptive, maladaptive, and non-perfectionists. For instance, adaptive perfectionists have high personal standards but still experience satisfaction when falling short of their goals while maladaptive perfectionists, who also have high personal standards, "feel a sense of personal failure and worthlessness when those goals are not met" (p.815). In

contrast, non-perfectionists are characterized by their absence of high personal standards. In addition, DiPrima et al. (2011) noted that past studies have demonstrated that adaptive perfectionists have fewer concerns about parental expectations, maladaptive perfectionists are greatly concerned with parental expectations, and non-perfectionists have low concern over making mistakes presumably because they do not receive expectations for perfection from their families. Hence, DiPrima et al. (2011) hypothesized that adaptive perfectionists would have family environments with low levels of conflict and control and high levels of harmony, expressiveness in relationships, and nurturance and that maladaptive perfectionists would have controlling and less communicative family environments. In addition to finding support for their hypotheses, DiPrima et al. (2011) reported that adaptive perfectionists had a strong sense of maternal approval and acceptance, and a family emphasis on religion and morality. DiPrima et al. (2011) noted that like psychological middle children, maladaptive perfectionists were shown to have less parental nurturance, felt less important than their siblings, and perceived that their parent's approval was conditional. Therefore, the researchers found support for the idea that family environment is related to perfectionism

Wang et al. (2012) examined the cultural validity of the APS-R (Slaney et al., 1996) and the Family Almost Perfect Scale (FAPS; Wang et al., 2010) for measuring multidimensional perfectionism using a collectivist sample of Indian college students. They hypothesized that participants with higher levels of collectivist ideals would receive higher expectations for perfection from their

families (i.e., family perfectionism), and have higher personal standards for perfection (i.e., personal perfectionism). Moreover, they hypothesized that adaptive perfectionists would have higher self-esteem and lower depression scores than maladaptive perfectionists. Using the Almost Perfect Scale-Revised (APS-R; Slaney et al., 1996) to measure personal perfectionism and the Family Almost Perfect Scale (FAPS; Wang et al., 2010) to measure family perfectionism, Wang et al. (2012) found support for the cross-cultural validity for the measures and for their hypotheses. Moreover, they computed correlations between the APS-R's (Slaney et al., 1996) personal discrepancy subscale and the FAPS (Wang et al., 2010) family discrepancy subscale. Wang et al. (2012) found that the correlation between personal and family discrepancy was stronger for participants with deeper collectivist values and the relationship between family standards and depression was lower for those with less collectivist values. Therefore, the authors surmised that "parents who are likely to hold their children to high standards for achievement need to be made more aware of the negative impact of imposing excessively high standards" (p.44) by helping their children to cope with the gap between standards and performance in order to obtain the benefits of perfectionism.

Methikalam et al. (2015) studied the relationships between Asian values, personal and family perfectionism, and psychological outcomes. They hypothesized that they could identify three types of perfectionists and perfectionist families (i.e., non-perfectionistic, adaptive, and maladaptive) using cluster analysis, that adaptive perfectionists and perfectionist families would have

higher mental health than their maladaptive counterparts, and that Asian values would predict types of perfectionists and perceived perfectionist families. Methikalam et al. (2015) observed that their analyses provided evidence for their hypotheses, and interestingly reported that the Asian value of Family Recognition Through Achievement was significantly and positively related to all the dimensions of perfectionism. Additionally, the researchers found support the notion that adaptive and maladaptive perfectionism not only applies to the individual, but to how they perceive their family in a collectivist cultural context. Thus, the findings of this study suggest that families who have the value of Family Recognition Through Achievement are likely to be perfectionistic, that one's mental health is connected to their type of perfectionism, and that personal perfectionism affects how an individual perceives their family's perfectionism.

This study assumed PBO as a mediator between OBO and dependent variables in the same way as most meaningful birth order research has done in the past several decades (Stewart, 2012). Further, this study recognized extraneous variables such as gender, siblings' gender and age, family size, SES, age spacing between siblings (Watkins, 1992), and supported the cultural validity of the APS-R (Slaney et al., 1996) and the PBOI (Campbell et al., 1991) by using a more culturally diverse sample. Moreover, since research has demonstrated that significant relationships exist between PBO and other constructs within Adlerian Psychology and Family Systems Theory, this study contrasted PBO as a better predictor than OBO of personal and family perfectionism.

First, I hypothesized that OBO would be significantly related to PBO. Secondly, I hypothesized that there would be a significant relationship between PBO, personal, and family perfectionism. Thirdly, I hypothesized that that psychological first and only scales would be negatively related to high personal and family discrepancy scores. Fourth, I hypothesized that the psychological middle scale would be positively related to high personal and family discrepancy scores. Lastly, I hypothesized that apart from the mediating influence of PBO, OBO would not be significantly related to personal or family standards for perfection.

Method

Participants

The sample consisted of 68 students from Tyndale University and Eastern Nazarene College. Eighty students began the survey but 12 did not complete all measures. The general demographics survey revealed that the sample was between the ages of 18-54 years old, with 59 participants (86.8%) being between the ages of 18-24 years old, four participants (5.9%) being between the ages of 25-34 years old, four participants being between the ages of 35-44 years old (5.9%) and one participant (1.5%) being between the ages of 45-54 years old. The gender distribution within the sample was uneven with 58 female participants (85.3%) and ten male participants (14.7%). However, the goal of ethnic diversity was met in this study, with 43% of the sample reporting having European origins and 37% of the sample reporting having Non-European origins (i.e. Caribbean, South or Central American, North American Indigenous, African, Asian, or Oceanic). Additionally, participants were asked to indicate the approximate annual income of their household. At the lowest end of the scale, 12 participants (17.9%) reported having a household income of \$40 000 or less, while nine participants (13.4%) indicated that they had a household income of \$40 000-\$60 000, 25 participants (37.3%) had a household income of \$60 000-\$80 000, 15 participants (22.4%) had a household income of \$80 000-\$100 000, and six participants (9%) had an annual household income of over \$100 000. Since the sample was recruited from two Christian institutions, it was expected that the majority of participants would record that Christianity was the religion their

family practiced in their childhood. This expectation was observed with 61 participants (89.7%) indicating that they were raised in a Christian household. Conversely, six participants (8.8%) reported that they were raised without a household religion and one participant (1.5%) indicated that they were raised with Hinduism as their household religion.

The self-developed OBO survey recorded variables such as parents' marital status, maternal age at birth, family type, number and gender of siblings, age spacing between siblings, family size, and birth order expectations. Findings from this survey revealed that the majority (75%) of participants had parents who were married, and that only three participants had one or both parents pass away. See Table 1 for frequencies of participants' parents' marital status. Moreover, the majority of the sample (45.6%) reported that their mother was between the ages of 25-34 years old at the time of their birth while only a small minority of the sample indicated that their mother was less than 18 years old when she gave birth to them. See Table 2 for frequencies of maternal age at birth.

In regards to the types of families present in the sample, the vast majority of participants had a nuclear family with biological parents living with their children, followed by participants who reported having a single-parent family. See Table 3 for frequencies of each family type. The size of participants' immediate families was also recorded, with most participants reporting a family size of 3-5 people, and one third of the sample reporting a family size of 6-9 people. See Table 4 for frequencies of family sizes. Within their families, the majority of the sample reported having only male siblings, while the minority had mostly female

siblings. See Table 5 for frequencies of sibling genders. More than half the sample reported having a gap of four years or more between them and at least one of their siblings, and about one third of the sample did not have a gap of four or more years between them and one of their siblings. See Table 6 for frequencies of age spacing between participants and their siblings. Lastly, participants were asked if they thought their personality fit birth order expectations and if they felt that their parents had influenced their personality with birth order expectations. Interestingly, most of the sample indicated that they thought their personality related to birth order expectations (see Table 7). In addition, the majority of participants felt influenced by their parents towards birth order expectations (see Table 8). This finding is consistent with past research (Zajonc, 2001; Hoopes and Harper, 1987; Lasswell, 1948) that observed that parents are often influenced by birth order personality stereotypes, which caused them to reinforce their children's behaviour to correspond to the stereotypes. Participants were compensated for their time with their choice of 1% extra credit in any Psychology course of their choosing or an entry in a draw for a \$25.00 Amazon gift card.

Table 1

Frequencies of parents' marital status

Parents Marital Status	Frequency	Percent
Married	51	75%
Divorced/Separated	12	17.6%
Living Together	2	2.9%
Widowed	1	1.5%
Both Parents Passed Away	2	2.9%

Table 2

Frequencies of maternal age at participants' birth

Maternal Age at Birth	Frequency	Percent
Less than 18 years old	3	4.4%
18-24 years old	15	22.1%
25-34 years old	31	45.6%
35-44 years old	19	27.9%

Table 3

Frequencies of family type

Family Type	Frequency	Percent
Nuclear	53	77.9%
Blended	6	8.8%
Extended	1	1.5%
Single-Parent	7	10.3%
Adopted	1	1.5%

Table 4

Frequencies of family size

Family Size	Frequency	Percent
1-2 people	2	2.6%
3-5 people	48	63.2%
6-9 people	23	30.3%
10+ people	3	3.9%

Table 5

Frequencies of sibling genders

Sibling Genders	Frequency	Percent
Mostly Male	9	15.8%
Mostly Female	6	10.5%
Only Male	17	29.8%
Only Female	13	22.8%
Gender Balance	12	21.1%

Table 6

Frequencies of age spacing

Sibling Age Spacing	Frequency	Percent
4+ years apart	37	64.9%
Less than 4 years apart	20	35.1%

Table 7

Frequencies of participants' personality relating to birth order expectations

Personality relates to birth order expectations	Frequency	Percent
Agreed	51	67.1%
Disagreed	25	32.9%

Table 8

Frequencies of participants' family birth order influences

Influenced by parents birth order expectations	Frequency	Percent
Agreed	47	61.8%
Disagreed	29	38.2%

Materials*Informed Consent*

Participants completed an informed consent form before proceeding with the study. Respondent had to be 18 years of age or older to participate. The form informed participants of their rights, confidentiality, potential benefits and risks, compensation information, withdrawal procedure, and any disclaimers that they should be aware of before participation was followed through. Participants were also provided with investigators' contact information if they had any questions, queries, or concerns. See Appendix A for a copy of the Informed Consent Form.

Ordinal Birth Order (OBO) Survey

The Ordinal Birth Order Survey was designed to collect data on participants' OBO and to address potentially extraneous variables for birth order research as noted by Watkins (1992). The survey was comprised of eight items which inquired about participants' family size, sibling genders, age spacing, order in birth succession, expectations that personality fits birth order expectations, and the degree to which they felt their parents had influenced their understanding of birth order and personality. The survey accounted for large families, giving participants room to enter data for nine or more siblings. First, participants were

asked about their family size including themselves, their siblings, and their parents. Then they asked to indicate whether they had siblings, and to choose a statement which most accurately reflected the gender of their siblings (i.e., *I only have male siblings*). Next, participants were invited to indicate whether or not there was a large age gap (four or more years) between them and at least one of their siblings. Afterward, participants were asked to indicate their order within successive births (*first, second, third, etc.*) and about which birth order position they would categorize themselves as (*firstborn, middle, youngest, and only*). Participants were also asked if they believed that their personality fit or used to fit birth order expectations such as being the responsible oldest child, the rebellious middle child, the sociable youngest child, or the spoiled youngest child. Finally, participants were asked if they felt that they had been influenced by birth order expectations coming from their parents, to which they could respond with *yes* or *no*. The Ordinal Birth Order Survey was administered via SurveyMonkey.com. See Appendix B for a copy of the Ordinal Birth Order Survey.

Psychological Birth Order Inventory (PBOI)

The PBOI (Campbell et al., 1991) is the most effective and recognized instrument for measuring the psychological birth order construct (Stewart & Campbell, 1998 p.42). The PBOI invited participants to respond with either *yes* or *no* to 46 statements which correspond to the four psychological birth order positions. The inventory items were analyzed and found to have high construct validity by four experienced counselors with doctorate degrees in Individual Psychology. Stewart and Campbell (1998) assessed the test-retest reliability of the

PBOI over three and eight week periods, and found correlations ranging from 0.80-0.94. Additionally, using factor analysis, the researchers demonstrated that the factor structure of the PBOI was stable and replicable for both males and females. Stewart and Campbell (1998) observed that while school achievement and pleasing adults were related to the firstborn scale for both genders, “high parental expectation, advising siblings, and being organized uniquely characterized the first scale for women [...] being the best among others was uniquely descriptive of the first scale for men” (p.51). Some of the statements in the PBOI include “I believed my parents had high expectations of me” (first), “I was taken less seriously than anyone in my family” (middle), “it was easy to talk my brothers and sisters into giving me things” (youngest), and “I felt smothered by my parents” (only). The Psychological Birth Order Inventory was administered via SurveyMonkey.com. See Appendix C for a copy of the Psychological Birth Order Inventory (PBOI; Campbell et al., 1991).

The Family Almost Perfect Scale (FAPS)

The Family Almost Perfect Scale, subsequently referred to as FAPS (Wang et al., 2010) measured an individual’s perceived degree of perfectionistic expectations and evaluations from their family of origin. Like the APS-R (Slaney et al., 1996), the FAPS has the subscales of Family Standards, Family Order, and Family Discrepancy. Methikalam et al. (2015) recorded that the Family Standards subscale examines the expectations that one’s family has for their high achievement and performance, the Family Order subscale measures family emphasis on neatness and orderliness, and the Family Discrepancy subscale

measures the degree to which individuals perceive that they do not meet their family's expectations for their achievement and performance. Examples of items in the FAPS include "My performance rarely measures up to my family's standards" (Family Discrepancy), "My family has high standards for my performance at work or at school" (Family Standards), and "My family expects me to always be organized and disciplined" (Family Order). Participants respond to the instrument's 17 items with a 7 point Likert scale ranging from *strongly disagree* to *strongly agree*. Cronbach's alphas for the FAPS have been good to excellent. For example, Wang et al. (2010) found that in their study, alphas were .85, .94, and .86 for Family Standards, Family Order, and Family Discrepancy respectively. The FAPS has been analyzed for cross-cultural validity with favorable results, and has also been found to have high construct validity with the APS-R (Wang et al., 2012). The FAPS was administered via SurveyMonkey.com. See Appendix D for a copy of the Family Almost Perfect Scale.

Almost Perfect Scale—Revised (APS-R)

The Almost Perfect Scale—Revised (Slaney et al., 1996) was comprised of 23 items that measured whether or not individuals are perfectionists, and whether the perfectionists are adaptive or maladaptive. The items were organized on a 7-point Likert scale which ranged from *strongly agree* to *strongly disagree*. Moreover, the scale was divided into three subscales: standards, order, and discrepancy. Stanley et al. (2002) used factor analysis to support the validity of the APS-R (Slaney et al., 1996), finding a goodness of fit index of 0.92. Additionally, researchers found that reliability (Cronbach's coefficient alphas) of

the subscales was 0.85 for Standards, 0.92 for Discrepancy, and 0.68 for Order while internal consistency reliabilities were 0.91 for Standards, 0.96 for Discrepancy, and 0.70 for Order. Some examples of APS-R (Slaney et al., 1996) items are “I have high standards for my performance at work or at school” (Standards), “I like to always be organized and disciplined” (Order), and “I often feel disappointment after completing a task because I know I could have done better” (Discrepancy). The APS-R (Slaney et al., 1996) was administered on SurveyMonkey.com. See Appendix E for a copy of the APS-R.

General Demographics Survey

This survey was developed to measure participants’ general demographics. Data collected from this survey included participants’ age range, gender, ethnic origins, socioeconomic status, household religion, parents’ marital status, and family type. See Appendix F for a copy of the general demographics survey.

Procedure

This study received approval from the Tyndale University Research Ethics Board and the Eastern Nazarene College Institutional Research Board recruitment and participation commenced. After this study was formally approved, I used convenience sampling to recruit participants from both institutions. Tyndale University students were recruited using emails and posters on social media (See Appendix G for the social media poster) while Eastern Nazarene College students were recruited via email. Participants completed the measures online on SurveyMonkey.com, a platform which allows respondents to participate from

any location. This format is especially useful for soliciting participants during an online academic year, and for including remote participants from Eastern Nazarene College. However, before participants completed the questionnaires on SurveyMonkey.com, they agreed to give their consent via the informed consent form, which informed them about the purpose of the study and their rights. Once they signed the informed consent form, participants were invited to complete an Ordinal Birth Order Survey, the PBOI, the APS-R, the FAPS, and a general demographics survey. This order of measures was designed to direct participants' attention from a familial context to a personal one.

Completion of these measures did not exceed 60 minutes of the participants' time. Tyndale University and Eastern Nazarene College participants were compensated with an extra 1% in any Psychology course of their choosing or with entry into a draw for a \$25 Amazon gift card.

Results

Descriptive Statistics of Key Variables

The key variables within this study were ordinal birth order, psychological birth order, personal perfectionism, and family perfectionism. The PBOI has different scoring for women and men. The items to which participants responded YES were counted for each subscale (i.e. first, middle, youngest, and only) within both gender categories and since each subscale contained a different number of items, the subscale totals were converted into z-scores to allow comparisons across subscales.

Each subscale for the male scoring of the PBOI had the same amount of items. The male sample's mean for the firstborn subscale was the highest of the four subscales, followed by the only and youngest child subscales. The male sample's lowest mean was observed in the middle child scale. The alphas for the four subscales ranged from excellent to acceptable, with a lowest alpha of 0.69. Please see Table 9 for descriptive statistics of the male PBOI scores. The internal reliability of the male PBOI scores varied from moderate to excellent, with Cronbach's alpha ranging from 0.69 to 0.94. Cronbach's alphas for male and female participants PBOI scores were generally higher than past studies measuring the construct (Stewart & Campbell, 1998).

Table 9

Descriptive Statistics of Male Psychological Birth Order Inventory Scores

	Mean	SD	Min.	Max.	Items	N	α
First	5.80	3.08	2.00	10.00	10	10	0.87
Middle	2.10	3.38	0.00	9.00	10	10	0.94
Youngest	3.90	2.42	0.00	9.00	10	10	0.69
Only	4.20	3.33	0.00	10.00	10	10	0.84

In contrast to males, females are scored on the PBOI using a different number of items for each subscale. For instance, the firstborn subscale had 12 items, the middle child subscale had 13 items, the youngest child subscale had nine items, and the only child subscale had ten items. The female sample's firstborn subscale mean was also the highest when compared to the other three subscales. It is followed by the middle, only, and youngest child subscales. The internal reliability of the female PBOI scores is more consistent than the male scores (see Table 9) with Cronbach's alpha ranging from 0.78 to 0.84. See Table 10 for descriptive statistics of female PBOI scores.

Table 10

Descriptive Statistics of Female Psychological Birth Order Inventory Scores

	Mean	SD	Min.	Max.	Items	N	α
First	9.03	2.81	0.00	12.00	12	58	0.80
Middle	4.53	3.70	0.00	13.00	13	58	0.84
Youngest	3.38	2.76	0.00	9.00	9	58	0.78
Only	3.93	3.09	0.00	10.00	10	58	0.84

The APS-R categorized participants as perfectionists or non-perfectionists based on whether their scores were above or below 42 on the Standards subscale. If a participant scored above 42 on this subscale, they would be classified as a perfectionist. In contrast, if they scored below 42 on the subscale, they would be categorized as a non-perfectionist. The APS-R uses a Likert scale which ranges from one (strongly disagree) to seven (strongly agree) for participants to respond to the items. In addition, each subscale (i.e. standards, order, and discrepancy) had a different number of items. The personal standards subscale had seven items, the personal order subscale had four items, and the personal discrepancy scale had 12 items. The mean for the standards subscale indicated that the sample had high expectations for their personal performance, being just shy of perfectionism. Descriptive statistics for the three APS-R subscales can be found in Table 11. The mean was the highest for the discrepancy subscale, but so was the variability. The

internal reliability for the APS–R subscales was higher than past studies (Ashby et al., 2003, p. 45), with Cronbach’s alpha ranging from 0.84 to 0.94.

Table 11

Descriptive Statistics of Almost Perfect Scale-Revised Scores

	Mean	SD	Min.	Max.	Items	N	α
Personal Standards	40.4	6.80	7.00	49.00	7	67	0.87
Personal Order	21.2	4.62	6.00	28.00	4	67	0.84
Personal Discrepancy	55.7	16.1	15.00	84.00	12	67	0.94

Like the APS–R, the FAPS functions using a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) for participants to respond to items pertaining to their family’s expectations for excellence or perfection. Each subscale within the FAPS had a different number of items. For example, the family standards subscale had six items, the family order subscale had four items, and the family discrepancy scale had seven items. The sample’s mean for the family standards subscale was the highest, followed by the family discrepancy and order subscales. Descriptive statistics for FAPS subscales can be found in Table 4. The internal reliability for these subscales was excellent and higher than past studies (Wang, 2010), with Cronbach’s alpha ranging from 0.90 to 0.93.

Table 12

Descriptive Statistics of Family Almost Perfect Scale Scores

	Mean	SD	Min	Max.	Items	N	α
Family Standards	32.2	7.70	7.00	42.00	6	65	0.93
Family Order	19.4	5.73	4.00	28.00	4	65	0.90
Family Discrepancy	23.5	9.88	7.00	42.00	7	65	0.91

Investigation of Primary Hypothesis

Relationships between OBO, PBO, and the dimensions of perfectionism were examined. While significant relationships were expected between PBO and perfectionism, OBO has often shown mixed results in such analyses; demonstrating the usefulness of the PBO construct for hypothesis testing.

A series of repeated measures ANOVAs was carried out to determine whether OBO was related to PBOI scores as might be expected. Firstly, ordinal firstborn females did score higher on the PBOI firstborn subscale than other subscales. Examining only ordinal firstborn females, PBOI firstborn scores were significantly higher than other subscales, $F(3,60) = 8.58, p < 0.01$. However, when male ordinal firstborns were tested, they did not score higher on the PBOI firstborn subscale than other subscales. For instance, for ordinal firstborn males PBOI firstborn scores were not significantly higher than the other three subscales, $F(3,9)=1.65, p = .246$. Secondly, ordinal middleborn females did not score higher on the PBOI middle child subscale than other subscales. When examining only

ordinal middleborn females, PBOI middle child scores were not significantly higher than other subscale scores, $F(3,45) = 0.396, p = .76$. The male sample was too small to provide acceptable data for a comparison between being an ordinal middleborn and a psychological middle child. Thirdly, ordinal youngest females did not score higher on the PBOI youngest child subscale than other subscales. When examining only ordinal youngest females, PBOI youngest child scores were not significantly higher than the other subscale scores but did approach significance, $F(3,54) = 2.70, p = .055$. Ordinal youngest male participants followed a similar pattern. When ordinal youngest males were examined, PBOI youngest child scores were not significantly higher than the other subscale scores, $F(3,12) = .123, p = .945$. Fourthly, ordinal only female children did not score higher on the PBOI only subscale than other subscales. When examining females who were ordinally only children, PBOI only child scores were significantly higher than other subscale scores, $F(3,3) = 8.42, p = .057$. There were no males in the sample that indicated that they were ordinally only children.

Therefore, being born first was related to PBOI firstborn and only child subscale scores for female participants. No significant relationships between ordinal birth order and PBOI scores were observed in male participants, but this may be due to the small size of the male sample. Since OBO was expected to yield different results than PBO, the subsequent analyses will focus on the latter. This confirms that conceptualization of PBO as different from OBO. See Table 13 for an illustration of psychological birth order means with standard errors for each ordinal birth order condition.

Table 13

Psychological birth order means for each ordinal birth order position

		Females				Males			
		by Psychological Birth Order				by Psychological Birth Order			
		First	Middle	Youngest	Only	First	Middle	Youngest	Only
Ordinal Birth Order	First	.633	-.127	-.290	-.085	-.797	-1.529	-.065	N/A
	Born	(.089)	(.276)	(.243)	(.169)	(.651)	N/A	(.448)	N/A
	Middle	-.138	.037	.402	-.856	-.719	-1.032	.033	N/A
	Born	(.188)	(.271)	(.213)	(.000)	(.313)	N/A	(.600)	N/A
	Youngest	-.379	-.188	.386	1.144	.025	.111	.111	N/A
	Born	(.182)	(.220)	(.273)	(.561)	(.293)	N/A	(.508)	N/A
	Only	-.220	-.352	.568	-.634	.170	-.955	.202	N/A
	Child	(.141)	(.267)	(.244)	(.643)	(.208)	N/A	(.656)	N/A

Note.

*N/A reflects the small male sample for this study.

Next, Pearson correlations were computed to test the hypothesis that there would be significant relationships between PBO, personal standards for perfection, and family standards for perfection. Since the PBOI has different scoring for women and men, the results are summarized for females in Table 14 and males in Table 15.

Table 14

Correlations between female PBOI Scores and standards for perfection

	First		Middle		Youngest		Only	
	r	n	r	n	r	n	r	n
Personal Standards	.459**	58	-.035	58	.146	58	-.029	58
Family Standards	.298*	56	.072	56	.217	56	.135	56

Note.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

A significant positive relationship was found between the PBOI's firstborn subscale and personal standards for perfection for female participants $r(n=58) = .459, p < .001$. Moreover, a significant relationship was found between the PBOI's firstborn subscale and family standards for perfection for female participants $r(n=56) = .298, p = .026$. Thus, female participants who scored higher on the firstborn subscale were more likely to receive standards of perfection from their families and have high standards for their own performance. Correlations between

female PBOI scores and personal and family standards for perfection are summarized in Table 16. See Figure 1 for an illustration of the relationship between psychological firstborn scores and personal standards for perfection for female participants and Figure 2 for a scatterplot of the relationship between psychological firstborn scores and family standards for perfection for female participants.

Figure 1

Relationship between psychological firstborn scores and personal standards for perfection for female participants

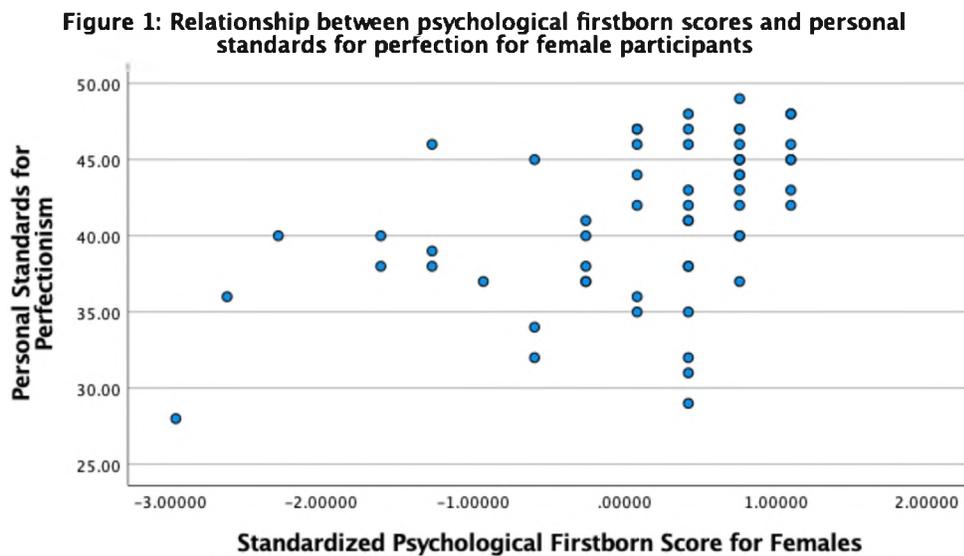


Figure 2

Relationship between psychological firstborn scores and family standards for perfection for female participants

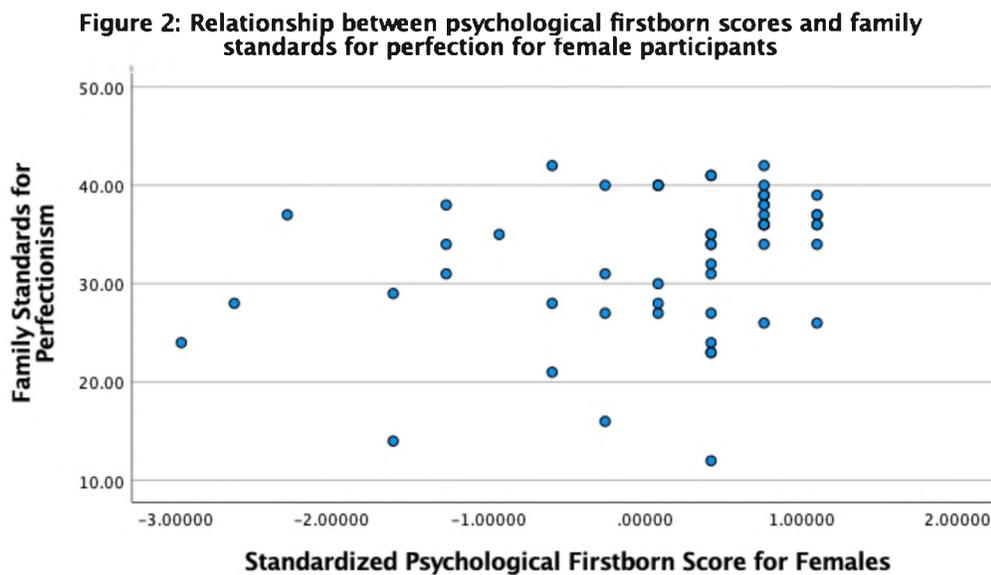


Table 15

Correlations between male PBOI Scores and standards for perfection

	First		Middle		Youngest		Only	
	r	n	r	n	r	n	r	n
Personal Standards	-.038	9	-.687*	9	-.666	9	-.421	9
Family Standards	.098	9	-.733*	9	-.537	9	-.579	9

Note.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

A significant negative relationship was found between the PBOI's middle child subscale and personal standards for perfection for male participants, $r(n=9) = -.687, p = .041$. A significant negative relationship was also found between the PBOI's middle child subscale and family standards for perfection for male participants $r(n=9) = -.733, p = .025$. Therefore, the more likely that male participants were to be psychological middle children, the less likely they were to receive high standards of perfection from themselves or their families. See Figure 3 for a graph of the relationship between PBOI middle child scores and personal standards for perfection and Figure 4 for a graph of the relationship between PBOI middle child scores and family standards for perfection for male participants.

Figure 3

Relationship between psychological middle child scores and family personal for perfection for male participants

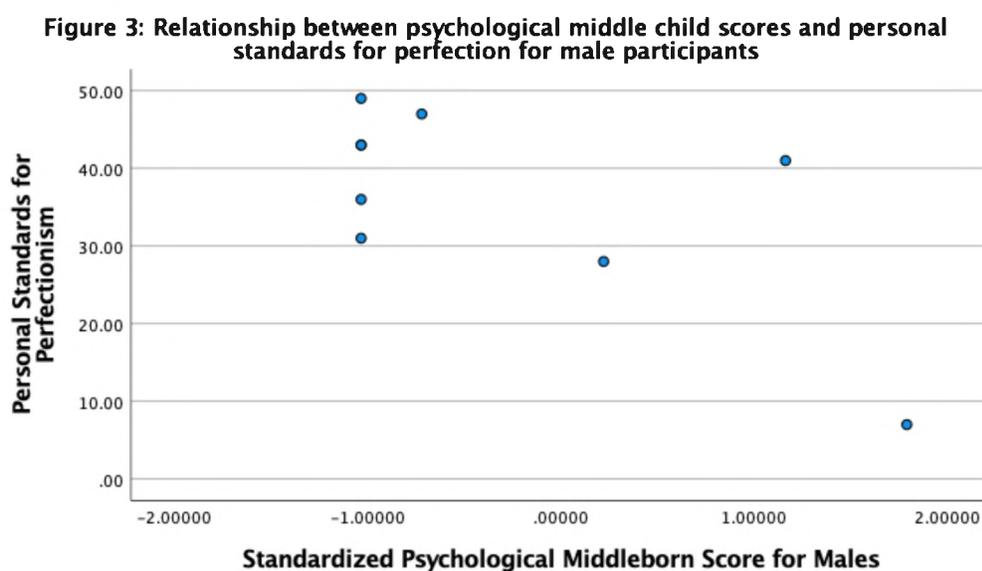
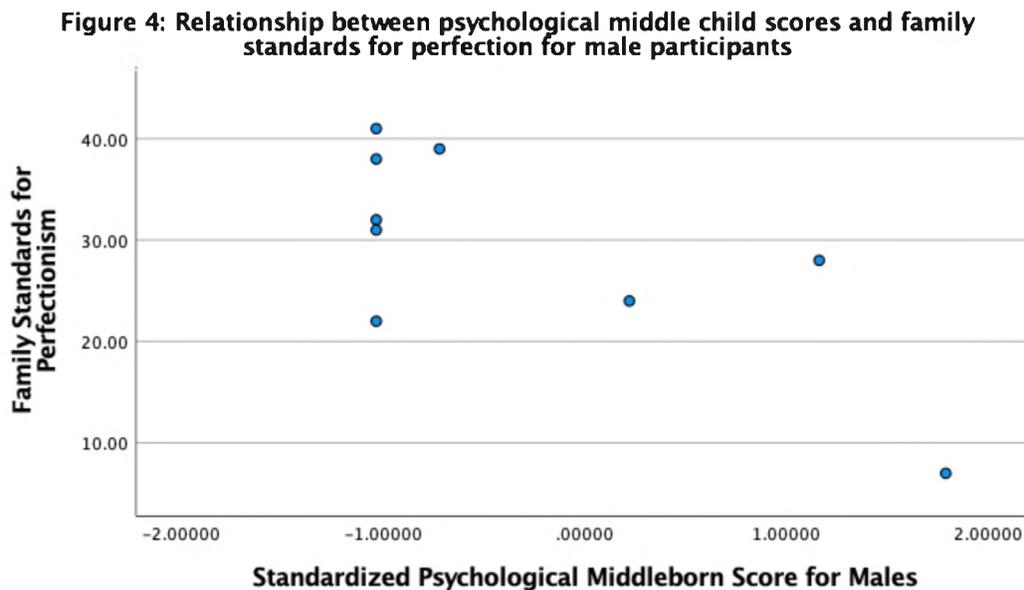


Figure 4

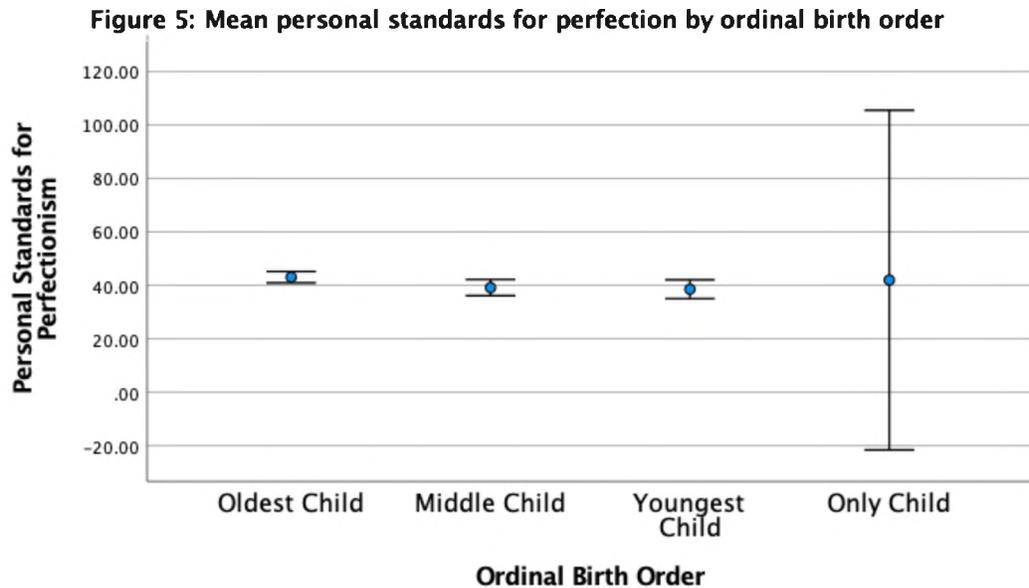
Relationship between psychological middle child scores and family standards for perfection for male participants



A one-way ANOVA (ordinal birth order x personal standards) was carried out to determine whether OBO would be related to having high personal standards for perfection. As expected, a significant result was not found, $F(1,3) = 2.14$, $p = .104$. Thus, participants' order in successive births was not related to having high standards of perfection for themselves. See Figure 5 for an error bar graph of mean personal standards for perfection by OBO.

Figure 5

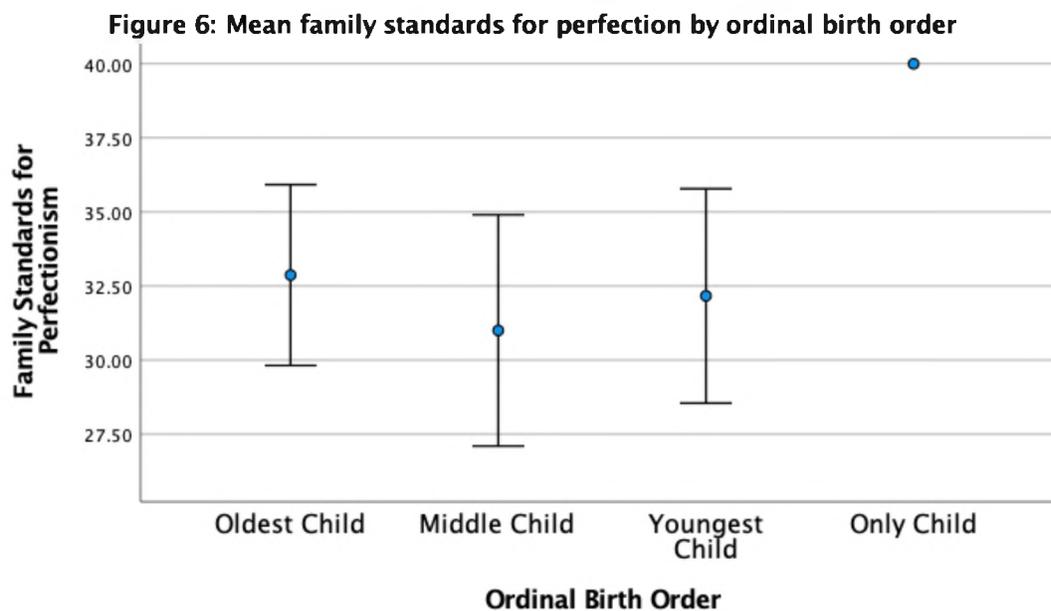
Mean personal standards for perfection by ordinal birth order



An additional one-way ANOVA (ordinal birth order x family standards) was carried out to test the hypothesis that OBO would be significantly related to family standards for perfection. As hypothesized, a significant result was not found, $F(1,3) = .525$, $p = .667$. Therefore, participants' order in successive births was not related to receiving high standards of perfection from their families. See Figure 6 for an error bar graph of the mean family standards for perfection by ordinal birth order.

Figure 6

Mean family standards for perfection by ordinal birth order



A Chi-Square Test of Independence was carried out to test the hypothesis that OBO would be related to whether a person is a perfectionist or not. The personal standards for perfection scale proposes a specific criterion for determining whether or not someone is a perfectionist. This made it possible to determine whether there was a relationship between OBO and status as a perfectionist. Participants were categorized as perfectionists if they had a personal standards score of 42 or above (Rice & Ashby, 2007) and as non-perfectionists if their personal standards score was below 42. Ordinal only children were omitted from this analysis due to the small size of the ordinal only child sample ($n=2$). A significant relationship was found when examining oldest, middle, and youngest children, $X^2(2, n=65) = 6.18, p = .045$. Thus, participants' order in successive

births was significantly related to whether or not they were perfectionists. See Table 17 for percentages of perfectionism and non-perfectionism by OBO.

Table 17

Percentages of perfectionism and non-perfectionism by ordinal birth order

		Ordinal Birth Order		
		Oldest Child	Middle Child	Youngest Child
Perfectionist	%	70.8%	41.2%	37.5%
	N	17	7	9
Non-Perfectionist	%	29.2%	58.8%	62.5%
	N	7	10	15

This study attempted to obtain a diverse sample by soliciting participation from Eastern Nazarene College in addition to Tyndale University. Participants were given a list of ethnicities and were instructed to check off the origins that applied to them. For the sake of simplicity, and because each non-European category contained only a few observations, if participants checked off ethnicities which were not European they were categorized as “non-European” and were categorized as “European” if they selected options from Europe. See Table 18 for frequencies of European and Non-European participants.

Table 18

Frequencies of European and Non-European Participants

Ethnicity	Frequency	Percent
European	43	53.8%
Non-European	37	46.3%

In order to confirm that the expected pattern of results held for both European and non-European participants, a Pearson Correlation was computed to test the hypothesis that non-European female PBOI scores would be related to personal and family standards for perfection. A significant positive correlation was found between the PBOI firstborn subscale scores and personal standards for perfection, $r(n=20) = .542, p = .014$. Additionally, a significant relationship was observed between PBOI firstborn subscale scores and family standards for perfection, $r(n=19) = .519, p = .023$. Therefore, female PBOI firstborn subscale scores were related to personal and family standards for perfection regardless of the participants' ethnicity (see Table 19). See Figure 7 for a scatterplot of the relationship between non-European psychological firstborn scores and personal standards for perfection for female participants and Figure 8 for a scatterplot of the relationship between non-European psychological firstborn scores and family standards for perfection for female participants.

Table 19

Correlations between non-European female PBOI scores and standards for perfection

	First		Middle		Youngest		Only	
	r	n	r	n	r	n	r	n
Personal Standards	.542*	20	-.080	20	.026	20	-.080	20
Family Standards	.519*	19	.078	19	.196	19	.306	19

Note.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Figure 7

Relationship between non-European female psychological firstborn scores and personal standards for perfection

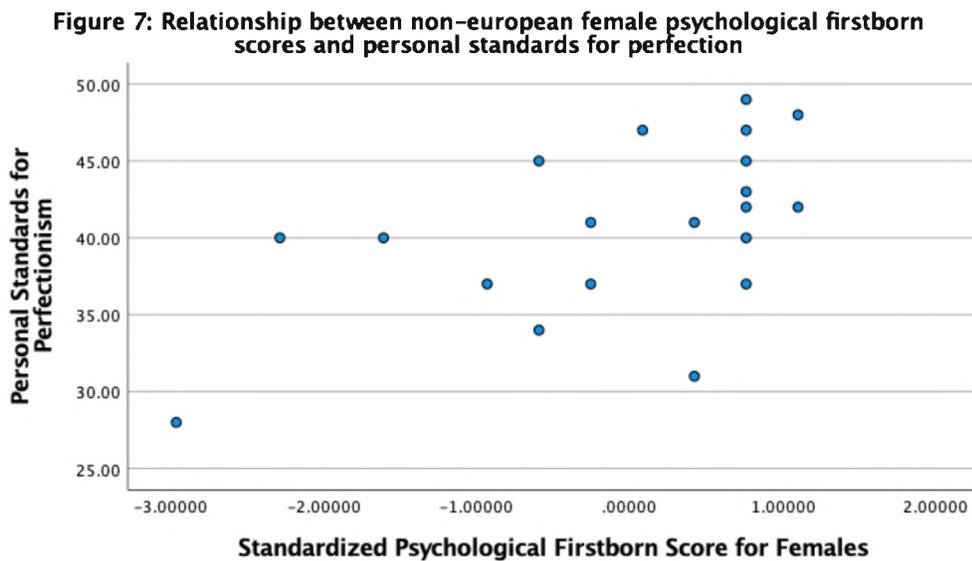
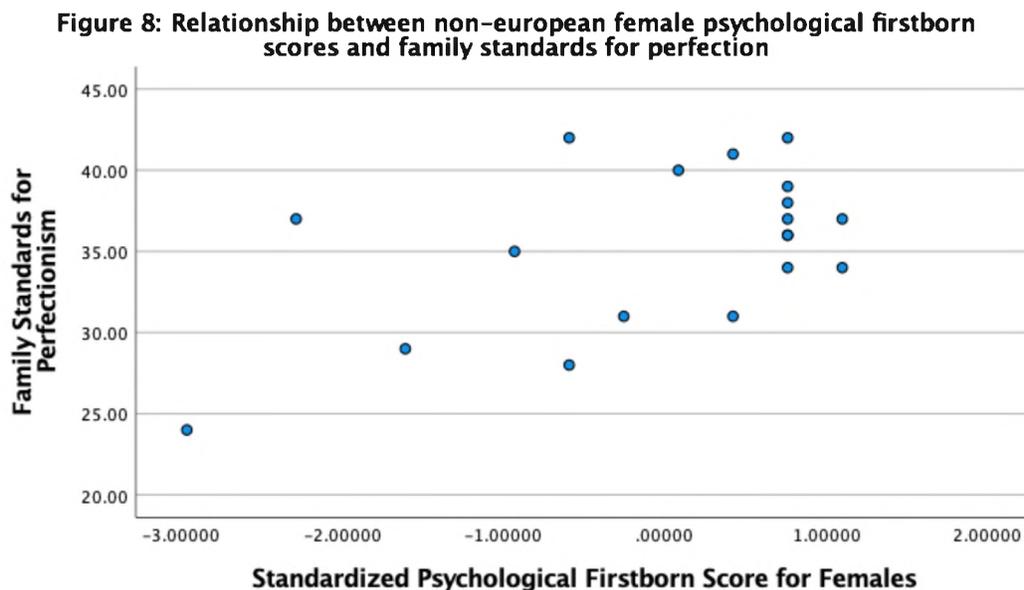


Figure 8

Relationship between non-European female psychological firstborn scores and family standards for perfection



In perfectionism research, discrepancy scores represent the difference between how an individual expects to perform and how they evaluate themselves afterwards. A series of Pearson correlations were computed to test the hypotheses that PBOI firstborn and only child scales would be negatively related to high personal and family discrepancy scores. A negative correlation was found between the PBOI firstborn scale for male participants and high personal and family discrepancy scores, but it was not significant. For female participants, the PBOI firstborn scale was not significantly related to high personal and family discrepancy scores. However, a significant positive correlation was found between the PBOI only child scale and high personal discrepancy scores for female participants, $r(n=58) = .274, p = .038$. Additionally, a significant positive correlation was found between the PBOI only child scale and high family discrepancy scores for female participants, $r(n=56) = .528, p < .001$.

Therefore, to the extent to which participants agreed with items related to being psychological only children, then they had higher discrepancy scores. See Figure 9 for a scatterplot of the relationship between the psychological only child scale and personal discrepancy scores for female participants and Figure 10 for a scatterplot of the relationship between the psychological only child scale and family discrepancy scores for female participants.

Figure 9

Relationship between psychological only child scores and personal discrepancy for female participants

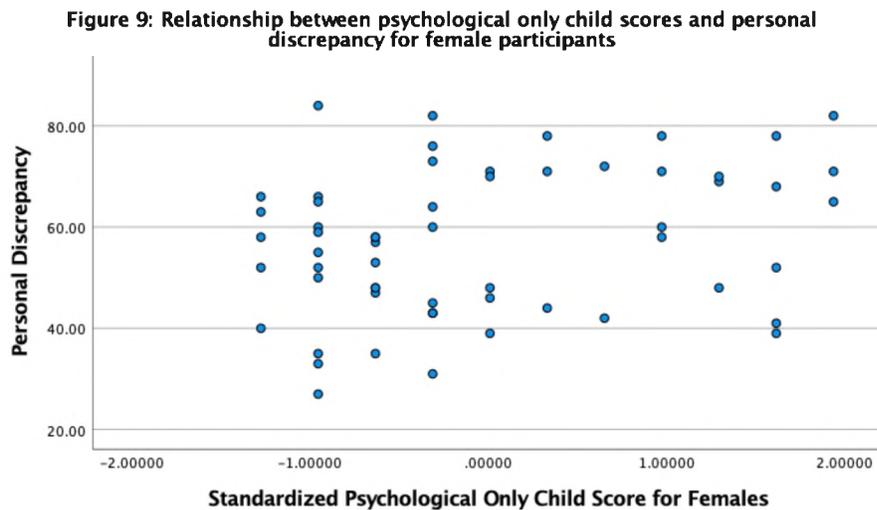
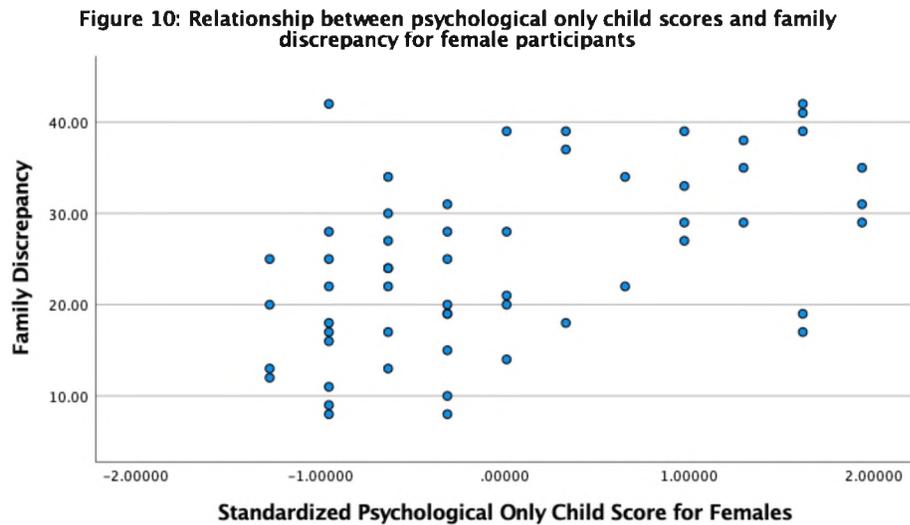


Figure 10

Relationship between psychological only child scores and family discrepancy for female participants



An additional Pearson correlation was computed to test the hypothesis that the psychological middle child scale would be positively related to high personal and family discrepancy scores. A negative correlation was observed for male participants, but it was not significant due to the small size of the male sample. On the other hand, a significant positive correlation was found between the PBOI middleborn scale and personal discrepancy for female participants, $r(n=58) = .414, p = .001$.

Additionally, a significant positive correlation was found between the psychological middle child scale and family discrepancy for female participants, $r(n=56) = .653, p < .001$. Thus, to the extent to which female participants agreed with items related to being psychological middleborns, then they also agreed with the items on the perfectionism scale that reflected higher discrepancy scores. See Table 20 for a summary of the relationships between psychological birth order, personal discrepancy, and family discrepancy for female participants. See Figures 11 and 12 for scatterplots of the relationships between the psychological middle child scale, personal discrepancy, and family discrepancy.

Table 20

Correlations between the psychological only child scale, personal discrepancy, and family discrepancy for female participants

	First		Middle		Youngest		Only	
	r	n	r	n	r	n	r	n
Personal Discrepancy	.095	58	.414**	58	.051	58	.274*	58
Family Discrepancy	-.124	56	.653**	56	.000	56	.528*	56

Note.

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Figure 11

Relationship between psychological middle child scores and personal discrepancy for female participants

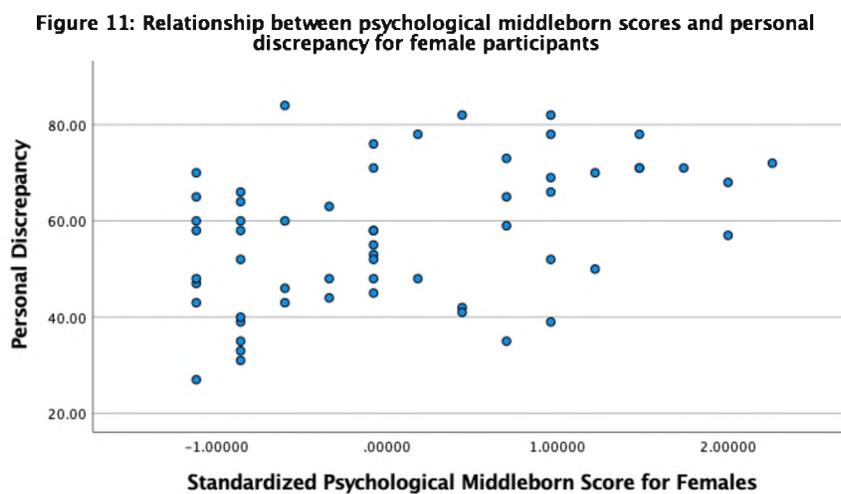
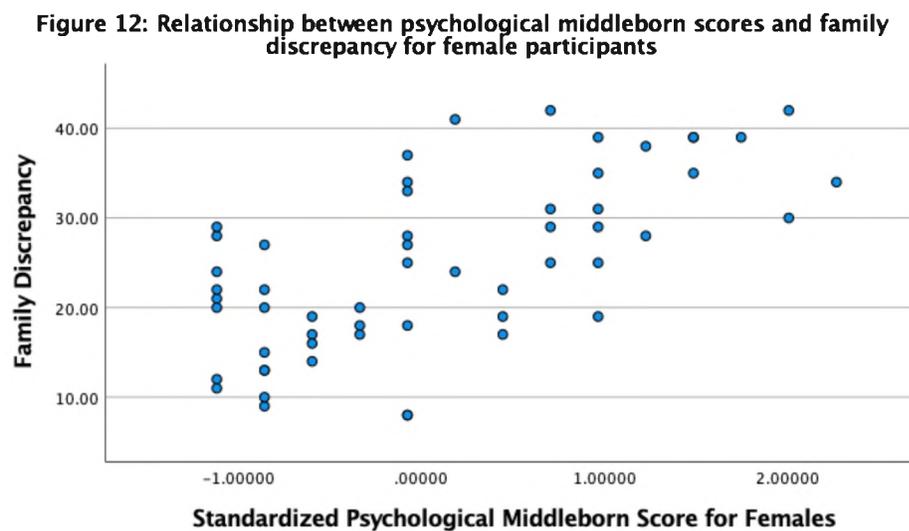


Figure 12

Relationship between psychological middle child scores and family discrepancy for female participants

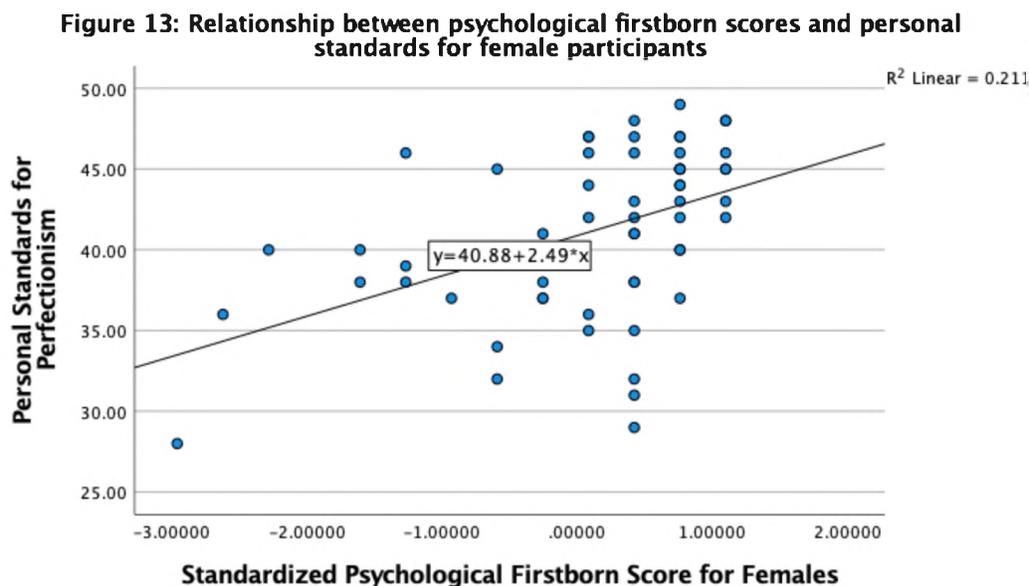


A multiple linear regression was carried out to test the hypothesis that, apart from the mediating influence of PBO, OBO would not be significantly related to personal standards for perfection for female participants. In other words, rather than OBO, PBO would predict high personal standards for perfection. The model predicted a significant proportion of the variability of personal standards for perfection, $F(5,52) = 3.64$, $p = .007$, with an R-square of .259. Psychological firstborn scores were a significant predictor of high personal standards for perfection for female participants, $t=2.72$, $p = .009$. Psychological middle child scores were not a significant predictor of high personal standards for perfection for female participants, $t= .511$, $p = .611$. Psychological youngest child scores were not a significant predictor of high personal standards for perfection for female participants, $t=1.39$, $p = .169$. Psychological only child scores were not a significant predictor of high personal standards for perfection for female participants, $t=.265$, $p = .792$.

As expected, OBO was not a significant predictor of high personal standards for perfection for female participants, $t= -1.54$, $p = .129$. The equation for the regression line was $y=40.88+2.49*x$. See Figure 13 for a scatterplot including the regression line, illustrating the one significant relationship between psychological firstborn scores and high personal standards for perfection for female participants.

Figure 13

Relationship between psychological firstborn scores and personal standards for female participants

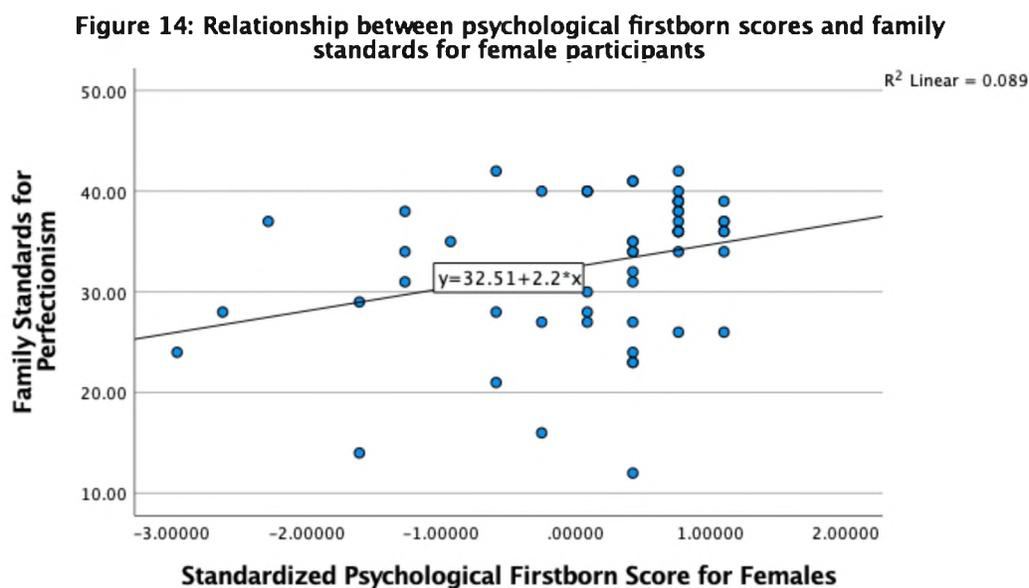


Another multiple linear regression was carried out to test the hypothesis that apart from the mediating influence of PBO, OBO would not be significantly related to family standards for perfection for female participants. The model did not predict a significant proportion of the variability of family standards for perfection, $F(5,55) = 1.91$, $p = .109$, and had an R-square of .160. However, although the overall model was significant, nonetheless psychological firstborn scores were a significant predictor of high family standards for perfection for female participants, $t=2.31$, $p = .025$. Psychological middle child scores were not a significant predictor of high family standards for perfection for female participants, $t= .641$, $p = .525$. Psychological youngest child scores were not a significant predictor of high family standards for perfection for female

participants, $t=1.04$, $p = .304$. Psychological only child scores were not a significant predictor of high family standards for perfection for female participants, $t= .828$, $p = .412$. Lastly, OBO was not a significant predictor of high family standards for perfection for female participants, $t= .300$, $p = .765$. The equation for the regression line was $y=32.51 + 2.2*x$. Although the overall model was not significant, the fact that one predictor was significant suggests that a larger sample size may have yielded a significant model as well. See Figure 14 for a scatterplot including the regression line, illustrating the relationship between psychological firstborn scores and high family standards for perfection for female participants.

Figure 14

Relationship between psychological firstborn scores and family standards for female participants



In both of these analyses, OBO was added first and the PBO variables were added subsequently. OBO was not a significant predictor of high personal or

family standards for perfection, while psychological firstborn scores were a significant predictor of high personal or family standards for perfection for female participants. These findings were consistent with the expectation that PBO would be a better predictor of perfectionism than OBO. Multiple regression analyses were not run for male participants due to the small size of the male sample (n=10).

Discussion

The aim of the present study was to demonstrate that compared to OBO, PBO is a better predictor of personal and family perfectionism. Additionally, this study was conducted to increase the validity of the psychological birth order construct for measuring the relationship between birth order and other variables. These findings did support the view based on the theory proposed by Adler (1956) that more so than a child's order in successive births, the way in which they interpret their role within their family is what matters most.

The first hypothesis of this study was that OBO would be significantly related to PBO. The expectation was that these two constructs would be related since they both attempt to conceptualize birth order, but not perfectly related since the PBO construct is more closely aligned with Adler's theory. This hypothesis received support from ordinal firstborn and only female participants. To elaborate, ordinal firstborn females scored higher on the psychological firstborn subscale than other subscales. Similarly, when female only children were isolated for examination, psychological only child scores were significantly higher than other subscale scores. Thus, being the first in successive births was related to

psychological firstborn and only child subscale scores for female participants. No significant relationships between OBO and PBO scores were observed for ordinal firstborn or only male participants, but this may have been due to the small size of the male sample. These results provide support for the hypothesis that OBO would be significantly related to PBO for ordinal firstborn and only female participants. Past researchers have also found significant relationships between PBO and OBO (Campbell et al., 1991), but nonetheless have noted that a significant number of participants had different ordinal and psychological positions. In other words, the role that many people serve within their family is different from the expectations associated with their order in successive births.

The second hypothesis of this study was that there would be a significant relationship between psychological birth order and personal or family standards for perfection. The data supported this hypothesis, since significant positive relationships were found between the psychological firstborn subscale and personal and family standards for perfection for female participants. Thus, female participants who scored the higher on the psychological firstborn scale were more likely to receive standards of perfection from their families and have high standards for their own performance. This finding is consistent with past research (Stewart & Campbell, 1998) that observed that while academic achievement and pleasing adults were related to the firstborn scale for both genders, the firstborn score for females was characterized by high parental expectations, directing siblings, and organizational skills. This finding may be attributable to gendered socialization. For example, female children may be pressured by their parents to

provide a positive example for their siblings with high academic achievement. These parental expectations may be bolstered by the inactivity of the female child's male siblings. In this way, female children may experience dual pressure to provide an example of achievement while also feeling pressure to take on the maternal role of directing their siblings. Therefore, receiving high standards of perfection from parents and having high standards for personal achievement be contribute to a child becoming a psychological firstborn, or a female child may naturally adopt a firstborn role within her family and behave accordingly. In contrast, for male participants, significant negative relationships were found between psychological middleborn scores and personal and family standards for perfection. Consequently, the more likely that male participants were to be psychological middleborns, the less likely they were to have high standards of perfection for themselves or receive high standards for perfection from their families. A possible explanation for this finding could be related to gender. For instance, the idea that the ideal birth order is for a son to be born before a daughter contributes to gender expectations about males, since the firstborn son will be ahead of his sister in developmental milestones and perceived as more capable than she is. Additionally, since being the best among others is uniquely included in the psychological firstborn scale for males, boys who feel that they do not meet this criteria may gravitate towards a middle born role. This may be why psychological middle born males are less inclined towards perfectionism; from their earliest days they could not measure up to society's expectation that they would be ahead of their sister, and therefore may react against high standards as if

to demonstrate that they are not even interested in competing against her. Since they react against high personal and family standards, they may feel less important than their siblings (DiPrima et al., 2011) and as if they are taken less seriously than anyone in their family (Stewart & Campbell, 1998).

It was also hypothesized that the psychological youngest child scale would be negatively related to personal or family standards for perfection. This hypothesis was not supported by the data. When comparing the frequency of categorical perfectionism to OBO, it did appear that more than half of ordinal youngest children in the sample were classified as non-perfectionists (Rice & Ashby, 2007). However, when comparing personal standards scores for each OBO, no significant results were found. Taken together, these results suggest that participants' order in successive births was not related to having high standards of perfection for themselves.

The third hypothesis of this study was that psychological first and only scales would be negatively related to high personal and family discrepancy scores. The expectation was that a greater discrepancy between personal standards and evaluation would be associated with lower personal and family perfectionism scores. To elaborate, one of the personal discrepancy items on the APS-R is, "I often feel frustrated because I cannot meet my goals" (Slaney et al., 1996) and a family discrepancy item on the FAPS is "My best just never seems to be good enough for my family" (Wang et al., 2010). The data failed to support this hypothesis, demonstrating that the PBOI firstborn subscale was not significantly related to high personal and family discrepancy scores for female participants

(and it was not possible to examine this relationship in the small sample of males). Ashby et al. (2003) encountered a similar result in their study when they found that the psychological firstborn and only child scales were not significantly related to adaptive perfectionism. Contrary to expectations, higher psychological only child scores were related to higher personal discrepancy and family discrepancy scores for female participants. Thus, to the extent to which female participants agreed with items related to being psychological only children, they had higher discrepancy scores and were more likely to exhibit the maladaptive dimensions of perfectionism. It has been suggested that such a relationship between psychological only child scores and high personal and family perfectionism scores could be due to the dimensions of autonomy, parental control, and anxiety from pressure, which characterize the only child subscale (Stewart & Campbell, 1998; Stewart et al., 2001). Female psychological only children may have higher discrepancy scores because they receive immense pressure to succeed from their families, and feel as though they consistently fail to meet their parents' high standards in academics. Similarly, female psychological only children may exhibit aspects of maladaptive perfectionism when they neglect to meet their or their family's standards for perfection; feeling a sense of worthlessness when they do not meet their goals (DiPrima et al., 2011).

The fourth hypothesis of this study was that the psychological middle scale would be positively related to high personal and family discrepancy scores. This hypothesis was supported: higher psychological middleborn scores were associated with higher personal discrepancy, and family discrepancy scores for

female participants. Therefore, to the degree to which female participants agreed with psychological middleborn items, then they had higher personal and family discrepancy scores and were more likely to be maladaptive perfectionists. These results were consistent with findings from past studies. For instance, both psychological middleborns and maladaptive perfectionists have been shown to receive less nurturance from their families and to perceive that their parents' approval is conditional (DiPrima et al., 2011).

The fifth and final hypothesis of this study was that apart from the mediating influence of PBO, OBO would not be significantly related to personal or family standards for perfection. This hypothesis was developed from the research by Stewart (2012), who advised future birth order researchers to utilize covariance models with PBO acting as a mediating variable. The multiple regression analysis provided support for this hypothesis, since OBO was not a significant predictor of high personal or family standards for perfection. However, the analysis demonstrated that psychological firstborn subscale scores were a significant predictor of high personal standards for perfection for female participants. This result was consistent with expectations, since the psychological firstborn subscale is characterized by a desire for achievement (Stewart & Campbell, 1998).

In consideration of past OBO and PBO research (Watkins, 1992; Stewart, 2012), this study attempted to obtain a more ethnically diverse sample by soliciting participation from students from Eastern Nazarene College in addition to Tyndale University. While many previous studies were based on predominantly

European samples, a more ethnically balanced sample was achieved in this case, with 53.8% of participants identifying as European and 46.3% of participants identifying as non-European. Results demonstrated that non-European participants experienced much the same pattern of relationship between PBO and perfectionism. Specifically, when the hypothesis that female PBOI scores would be related to personal and family standards for perfection was tested using only non-European female participants, higher psychological firstborn scores were related to higher personal and family standards for perfection. Therefore, female psychological firstborn subscale scores were related to personal and family standards for perfection regardless of participants' ethnicity. Since these findings provided support for the cultural validity of the psychological birth order construct, future research should examine how wider culture contributes to role selection. For instance, a newcomer to Canada from a collectivist culture may express psychological birth order differently than a third generation Canadian, even though they may both share the same ethnic background.

Limitations

The primary limitations of this study were the small size of the sample and the balance of male and female participants. For instance, while the target sample size for this study was 80-130 participants, only 68 participants completed the study. Moreover, the sample was not gender balanced, with the majority of participants being female. Since the PBO construct is operationalized differently for females and males, it is necessary to analyze females and males separately. The particularly small size of the male sample made it difficult to conduct

meaningful analyses using only male participants. Furthermore, the design of this study did not allow for examining casual relationships. That is, the correlational design of this study made it impossible to determine whether PBO causes one's tendency for or against perfectionism or whether innate traits (such as an inborn tendency toward perfectionism) might influence PBO. Conversely, it may be that PBO is actually a reflection of an interaction between innate tendencies and OBO. Ultimately, we cannot be sure about cause and effect here, since we cannot experimentally manipulate birth order.

In addition, while we had a more ethnically diverse sample than some past studies, it only allowed us to compare European vs. non-Europeans. A better sample would include many participants in various ethnic categories. Finally, the online nature of the study may have limited the sample size, since some participants may have preferred to complete the study inside of a classroom alongside their peers. Moreover, it is possible that the participants who did not complete all of the measures online may have been more inclined to complete them in a physical setting.

Considerations for Future Research

The findings of this study support the notion that birth order can be understood as a social phenomenon which is influenced by contextual factors that persists in adult life. For example, Shulman and Mosak (1977) noted that children choose from available roles within their family of origin, adopt the behavioural expectations associated with the role, and continue to exhibit the behaviours into adulthood when they are satisfied with the role. In this study, PBO was a predictor

of high standards for perfection. Additionally, there was a positive relationship between firstborn PBOI scores and standards for perfectionism. Therefore, it is plausible that female participants chose the firstborn role within their family as children, adopted high personal standards for perfection, received high standards of perfection from their families, and continued to exhibit perfectionism as adults. However, it is also possible that females with high innate perfectionism gravitated towards the firstborn role because they already possessed high standards for perfection. Conversely, there was a negative relationship between middleborn psychological scores and high standards for perfection for male participants. Male participants who identified with the middleborn role within their family may have done so because their parents did not exhibit nurturing behaviour toward them, made them feel inferior to their siblings, or demonstrated conditional acceptance and approval of their child (DiPrima et al., 2011), thus absolving the male child of high family standards for perfection. Another explanation could be related to gendered socialization, in which male psychological middle children abandon high personal standards for perfection to avoid competition with their sisters. This result was consistent with past research that examined relationships between PBO and perfectionism. For instance, Ashby et al. (2003) also observed that non-perfectionists had significantly higher psychological middle child means than other psychological positions.

Future research should aim to acquire a larger sample with a balance between males and females. It is important to gather sufficient data for both genders since the PBOI is scored differently for men and women. However, the

PBOI itself may need to be revised to adhere to how gendered socialization has changed since the development of the measurement from Campbell et al. (1991). A larger sample could have been recruited with more frequent social media posts, by visiting classrooms to promote the study, or using more desirable incentives. Conducting future studies at larger institutions may aid in procuring a greater number of male and non-European participants. It may also be advisable to interview psychological firstborn females and middleborn males about their experiences to learn about why positive relationships were found between the PBOI firstborn scale for females and perfectionism and negative relationships were found between the PBOI middleborn scale for males and non-perfectionism.

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Appendix A
Consent Form

You have been invited to participate in a research study. Please read this consent form thoroughly to understand what is involved in participation.

Relationships Between Birth Order, Personal Perfectionism, and Family Perfectionism

INVESTIGATORS: This research study is being conducted by Cheyenne Dungey, and will be supervised by the Department Head of Psychology at Tyndale University, Dr. Nancy Ross.

PURPOSE OF THE STUDY: The purpose of this study is to explore the relationship between birth order, personal perfectionism, and family perfectionism. You will be asked questions pertaining to your ordinal and psychological birth order, and about perfectionism in personal and familial contexts. Participants must be at least 18 years of age in order to take part in the study.

WHAT PARTICIPATION MEANS: If you decide to participate in this study, you will be invited to complete the following four inventories:

First, you will be asked to an Ordinal Birth Order Inventory developed for this study. Next, you will be asked to complete three inventories to measure your psychological position (PBOI; Campbell et al., 1991), personal perfectionism (APS-R; Slaney et al., 1996), and family perfectionism (FAPS; Wang et al., 2010). You will finally be invited to complete a brief General Demographics Survey. Overall, your participation is expected to take approximately 90 minutes.

POTENTIAL BENEFITS: This study is designed to make you think introspectively, which may help you to understand yourself within your family system more deeply. In addition, you may learn more about your familial role, how you interact with others, and about perfectionism in your personal and family life.

POTENTIAL RISKS: There is minimal risk associated with this study. While it is possible that you might not be comfortable with what you learn about yourself or with the memories you are asked to recall, the measures used in this study should not cause any more distress than what is experienced during a routine psychological examination.

COMPENSATION: Tyndale University participants will be compensated with their choice of 1% of extra credit in a Psychology course of their choosing or entry in a draw for a \$25.00 Amazon gift card. Eastern Nazarene College participants will be compensated with entries in the Amazon gift card draw.

CONFIDENTIALITY: Your data will be kept confidential and will not be isolated for any reason. Your responses will be attached to a randomly assigned number for organizational purposes, and your name will not be associated with any of the data you provide. Your information will only be utilized for statistical purposes with other participants' data.

VOLUNTARY PARTICIPATION AND WITHDRAWAL: While you have been invited to participate, you are not required to do so. Your participation is voluntary, and you are not obligated to answer every or any question. You are free to withdrawal from the study at any time, and you may choose whether your data will be used in the study up until its conclusion. Should you choose to withdrawal, you will not be penalized and your relationship with your institution and the investigators will not be affected.

LEGAL RIGHTS: You are not waiving any legal rights by consenting to participate in this study.

QUESTIONS PERTAINING TO THE STUDY: If you have any questions, queries, or concerns about the study, you may contact the investigators here:

Cheyenne Dungey:

Nancy Ross:

This study is pending approval by Tyndale University's and Eastern Nazarene College's Research Ethics Boards. If you have additional questions pertaining to your rights as a participant in this study please contact:

Tyndale University Research Ethics Board:

Eastern Nazarene College Research Ethics Board: (insert here)

SECONDARY USE OF DATA: With your consent, your data may be reanalyzed by other researchers for other purposes. However, your results will be anonymized and will remain confidential. Do you consent to future secondary use of your data?

Yes No

CONFIRMATION OF AGREEMENT: Your signature below indicates that you have read and understood the aforementioned information in this consent form, that you agree to participate in this study, that you have been encouraged to ask questions should you have them, that you are not waiving any legal rights by signing below, and that you recognize that you may change your mind and withdraw your consent to participate at any time.

Signature of Participant _____

Date _____

Appendix B

Ordinal Birth Order Survey

1. Including yourself, your siblings (half and full), and your parents,

what is your family size?

- 1-2 people
- 3-5 people
- 6-9 people
- 10+ people

2. Do you have siblings? (including adopted, step, and half siblings and siblings who have passed away)

- Yes
- No

3. Which statement is the most true about the genders of your siblings?

- I have more male siblings than female siblings
- I have more female siblings than male siblings
- I only have male siblings
- I only have female siblings
- I have as many male siblings as I have female siblings
- I do not have siblings

4. Is there a large age gap (4+ years) between you and at least ONE of your siblings?

- Yes
- No
- I do not have siblings

5. What is your order in the succession of births in your family? (i.e. first, second, third, etc.)

- First
- Second
- Third
- Fourth
- Fifth
- Sixth
- Seventh
- Eighth
- Ninth (or greater)

6. Are you the oldest, middle, youngest, or only child in your family?

- Oldest child
- Middle child (Select this option if you have siblings but are not the oldest or the youngest)
- Youngest child
- Only child

7. Do you think that your personality fits or used to fit into birth order expectations? (e.g. The responsible oldest child, the rebellious middle-child, the sociable youngest child, or the spoiled only child)

- Yes
- No

8. Do you feel that you have been influenced by birth order expectations coming from your parents? (For example, if you are the eldest child

did your parents expect you to be more responsible than your siblings?)

Yes

No

Appendix C

White-Campbell Psychological Birth Order Inventory (Campbell et al., 1991)

Instructions: Please read each item and then select YES or NO according to how you felt when you lived in the family in which you grew up. If you lived in several families, please think of the one that you spent the most time in as you respond to these items. If you had no brothers or sisters you may ignore items that refer to experiences you had with your siblings.

YES/NO	1. I believed my parents had high expectations of me.
YES/NO	2. I was babied by my family members.
YES/NO	3. My family was more involved in my life than I wanted.
YES/NO	4. It seemed like I was in a race trying to catch up.
YES/NO	5. It was important to me to please adults.
YES/NO	6. My family did not respect my privacy.
YES/NO	7. I felt isolated from others.
YES/NO	8. It was easy to talk my brothers and sisters into giving me things.
YES/NO	9. My parents worried a lot about me.
YES/NO	10. I was taken less seriously than anyone in the family.
YES/NO	11. It was important to me to advise my brothers and sisters about right and wrong.
YES/NO	12. I was seen as being the most charming in the family.
YES/NO	13. It seemed like I never had my parent's full attention.
YES/NO	14. My parents tried to control me.
YES/NO	15. I am more organized and structured than others in my family.
YES/NO	16. I was pampered by my family members.
YES/NO	17. Other family members saw me as the least capable.
YES/NO	18. It was important to me that others do things right.
YES/NO	19. My parents tried to manage my life.
YES/NO	20. I was good at getting others to do things for me.
YES/NO	21. It seemed like I was less important than other members of my family.
YES/NO	22. I wanted to satisfy my parents.
YES/NO	23. My parents wanted to know about everything that was going on in my life.
YES/NO	24. It was easy to talk my parents into giving me things.
YES/NO	25. I often felt less loved than others in my family.
YES/NO	26. I felt smothered by my parents.
YES/NO	27. It was important to me to do things right.
YES/NO	28. When I wanted to I could be the ruler of the family.

YES/NO	29. I often felt that I was treated more unfairly than others in the family.
YES/NO	30. I was good at getting what I wanted from my family.
YES/NO	31. I felt like I lived in a fishbowl.
YES/NO	32. It was important to me to make good grades in school.
YES/NO	33. I felt disconnected from others in my family.
YES/NO	34. My parents considered everything that was my business, their business.
YES/NO	35. It was important to me to be the best.
YES/NO	36. I could be the boss in the family when I wanted to.
YES/NO	37. I felt squeezed out by my brothers and sisters.
YES/NO	38. My parents were busybodies.
YES/NO	39. I liked order more than other people in my family.
YES/NO	40. I was seen as the most adorable in the family.
YES/NO	41. It was important to me that my brothers and sisters do things right.
YES/NO	42. I was treated less justly than others in my family.
YES/NO	43. I wanted others in my family to do things properly.
YES/NO	44. I felt like I was less valuable than other members of my family.
YES/NO	45. I liked doing things the correct way.
YES/NO	46. I felt left out by my brothers and sisters.

Scoring the PBOI (Campbell et al., 1991)

Instructions: The PBOI is scored differently for women and for men. Find the items pertaining to each gender. Count the number of YES responses that were made for the items listed in each scale. It is recommended that you convert the raw scores into some standard score format (z-scores, T-scores, etc.) to facilitate comparisons between scales since the scales have different numbers of items.

Items for Women:

Pleaser/Organizer (First): 1, 5, 11, 15, 18, 22, 27, 32, 39, 41, 43, 45

Neglected/Rejected (Middle): 4, 7, 10, 13, 17, 21, 25, 29, 33, 37, 42, 44, 46

Charmer/Initiator (Youngest): 2, 8, 12, 16, 20, 24, 28, 30, 40

Scrutinized (Only): 3, 6, 9, 14, 19, 23, 26, 31, 34, 38

Items for Men:

Pleaser/Organizer (First): 5, 18, 22, 27, 32, 35, 39, 41, 43, 45

Neglected/Rejected (Middle): 10, 13, 21, 25, 29, 33, 37, 42, 44, 46

Charmer/Initiator (Youngest): 2, 8, 12, 16, 20, 24, 28, 30, 36, 40

Scrutinized (Only): 3, 6, 9, 14, 19, 23, 26, 31, 34, 38

Appendix D

Family Almost Perfect Scale (Wang et al., 2010)

Instructions: The following items are designed to measure your perceptions of the attitudes, beliefs, and values your family has and conveyed to you. There are no right or wrong answers. Please respond to all of the items. Use your first impression and do not spend too much time on individual items in responding. Respond to each of the items using the scale below to describe your degree of agreement with each item.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Items	Ratings						
1. My family has high standards for my performance at work or at school.	1	2	3	4	5	6	7
2. My family expects me to be an orderly person.	1	2	3	4	5	6	7
3. Neatness is important to my family.	1	2	3	4	5	6	7
4. My best just never seems to be good enough for my family.	1	2	3	4	5	6	7
5. My family thinks things should be put away in their place.	1	2	3	4	5	6	7
6. My family has high expectations for me.	1	2	3	4	5	6	7
7. I rarely live up to my family's high standards.	1	2	3	4	5	6	7
8. My family expects me to always be organized and disciplined.	1	2	3	4	5	6	7

9. Doing my best never seems to be enough for my family.	1	2	3	4	5	6	7
10. My family sets very high standards for me.	1	2	3	4	5	6	7
11. Nothing short of perfect is acceptable in my family.	1	2	3	4	5	6	7
12. My family expects the best from me.	1	2	3	4	5	6	7
13. My performance rarely measures up to my family's standards.	1	2	3	4	5	6	7
14. My family expects me to try to do my best at everything I do.	1	2	3	4	5	6	7
15. I am seldom able to meet my family's high standards of performance.	1	2	3	4	5	6	7
16. I am aware that my family sets standards that are unrealistically high.	1	2	3	4	5	6	7
17. My family expects me to have a strong need to strive for excellence.	1	2	3	4	5	6	7

FAPS Scoring Key (Wang et al., 2010)

Family Standards = 1, 6, 10, 12, 14, 17

Family Order = 2, 3, 5, 8

Family Discrepancy = 4, 7, 9, 11, 13, 15, 16

Sum up the items corresponding to the three subscales to get your FAPS scores on Family Standards, Family Order, and Family Discrepancy.

Appendix E

Almost Perfect Scale—Revised (Slaney et al., 1996)

Instructions: The following items are designed to measure attitudes people have toward themselves, their performance, and toward others. There are no right or wrong answers. Please respond to all of the items. Use your first impression and do not spend too much time on individual items in responding. Respond to each of the items using the scale below to describe your degree of agreement with each item.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Items	Ratings						
1. I have high standards for my performance at work or at school.	1	2	3	4	5	6	7
2. I am an orderly person.	1	2	3	4	5	6	7
3. I often feel frustrated because I can't meet my goals.	1	2	3	4	5	6	7
4. Neatness is important to me.	1	2	3	4	5	6	7
5. If you don't expect much out of yourself, you will never succeed.	1	2	3	4	5	6	7
6. My best just never seems to be good enough for me.	1	2	3	4	5	6	7
7. I think things should be put away in their place	1	2	3	4	5	6	7
8. I have high expectations for myself.	1	2	3	4	5	6	7

9. I rarely live up to my high standards.	1	2	3	4	5	6	7
10. I like to always be organized and disciplined.	1	2	3	4	5	6	7
11. Doing my best never seems to be enough.	1	2	3	4	5	6	7
12. I set very high standards for myself.	1	2	3	4	5	6	7
13. I am never satisfied with my accomplishments.	1	2	3	4	5	6	7
14. I expect the best from myself.	1	2	3	4	5	6	7
15. I often worry about not measuring up to my own expectations.	1	2	3	4	5	6	7
16. My performance rarely measures up to my standards.	1	2	3	4	5	6	7
17. I am not satisfied even when I know I have done my best.	1	2	3	4	5	6	7
18. I try to do my best at everything I do.	1	2	3	4	5	6	7
19. I am seldom able to meet my own high standards of performance.	1	2	3	4	5	6	7
20. I am hardly ever satisfied with my performance.	1	2	3	4	5	6	7
21. I hardly ever feel that what I've done is good enough.	1	2	3	4	5	6	7
22. I have a strong need to strive for excellence.	1	2	3	4	5	6	7
23. I often feel disappointment after completing a task because I know I could have done better.	1	2	3	4	5	6	7

Scoring – APS-R (Slaney et al., 2001)

Standards = 1, 5, 8, 12, 14, 18, 22

Order = 2, 4, 7, 10

Discrepancy = 3, 6, 9, 11, 13, 15, 16, 17, 19, 20, 21, 23

Sum up the items corresponding to the three subscales to get your scores on *Standards*, *Order*, and *Discrepancy*.

Classification: (Rice & Ashby, 2007)

If your *Standards* score is below 42, you are not a perfectionist.

If you have a *Standards* score 42 and above, you are classified as a perfectionist.

If you also have a *Discrepancy* score 42 and above, you are classified as a maladaptive perfectionist.

If your *Discrepancy* score is below 42, you are an adaptive perfectionist

Appendix F

General Demographics Survey

1. Please indicate your age category:

- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old
- 75 years or older

2. What is your gender?

- Male
- Female
- Non-Binary
- Other: _____

3. What are your ethnic origins?

- European
- Caribbean
- South or Central American
- North American (Indigenous)
- African
- Asian
- Australian/Oceanic

4. What was the approximate annual income of your childhood household?

- \$40 000 or below
- \$40 000 - \$60 000
- \$60 000 - \$80 000
- \$80 000 - \$100 000
- Over \$100 000

5. Which religion did your family practice when you were growing up?

- Christianity/Catholicism
- Judaism
- Islam
- Hinduism
- Buddhism
- None
- Other: _____

6. Please indicate the marital status of your parents:

- Married
- Separated/Divorced
- Living Together
- Widowed (One parent passed away)
- Both parents passed away

7. How old was your mother at the time of your birth?

- Less than 18 years old
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old

8. Which of these categories best described your family during your childhood?

- Nuclear Family (i.e. mother, father, and children)
- Blended Family (i.e. biological parent, step-parent, and children)
- Extended Family (i.e. mother and/or father, related adults living in the home, and children)
- Single-Parent Family (i.e. mother or father and children)
- Adoptive Family (i.e. adoptive mother and/or father and children)

Appendix G

Poster for advertising the study on social media

**PSYCHOLOGICAL BIRTH
ORDER AND PERFECTIONISM**

**YOUR ORDER IN
SUCCESSIVE
BIRTHS, YOUR
FAMILIAL ROLE,
AND YOUR
STANDARDS &
EXPECTATIONS
FOR PERFECTION**

**HONOURS THESIS
STUDY**

**GET EXTRA CREDIT IN
A PSYCH CLASS OF
YOUR CHOOSING!**

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