Family Structure and the Gender Gap in ADHD

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Abstract

We document the large excess male-female gap in ADHD diagnosis and treatment rates for non-traditional families. In order to overcome the endogeneity of family structure, we exploit the random nature of child gender and make comparisons between boys and girls across (and within) family structures. Pre-teen boys in traditional families are 2.9 percentage points more likely to have been medicated for ADHD in the past two years than girls in traditional families, while the same gap for non-traditional families is 5.4 percentage points. This large differential raises concerns about medication patterns and suggests that non-traditional families are less able to cope with difficult early male behavior.

1. Introduction

Despite attention deficit/hyperactivity disorder (ADHD) being the most common neurobehavioral disorder among America's youth (Feldman and Reiff 2014), diagnosis patterns strongly suggest that children are under or over-diagnosed with the disorder.[1] Nearly 19 percent of children in Kentucky have been diagnosed with ADHD compared to only 6 percent in Nevada, low income children are more likely to be diagnosed, and boys are twice as likely as girls to have ADHD (Akinbami et al. 2011). While some variation may be explained by differences in underlying prevalence such as males being predisposed to ADHD or low income settings exacerbating ADHD symptoms, not all gaps in diagnosis rates can be accounted for. Perhaps the best example of the inherently subjective nature of ADHD diagnosis is the finding that children who are young for their grade are much more likely to be diagnosed with and treated for ADHD (Elder and Lubotsky 2009; Elder 2010; and Evans et al. 2010).

In this paper, we provide evidence that family structure is also an important factor influencing ADHD diagnosis and medication rates, especially for boys. In order to overcome the endogeneity of family structure on child outcomes, we exploit the random nature of child gender and make comparisons between boys and girls within traditional and non-traditional families, respectively. Using data from the Medical Expenditures Panel Survey (MEPS) from 1999 to 2012, we find that the male-female gap in ADHD medication and diagnosis is twice as large in non-traditional families as traditional families. Boys in traditional families are 2.9 percentage points more likely to have been medicated for ADHD in the past two years than girls in traditional families, while the same gap for non-traditional families is 5.4 percentage points. This large, excess gap in non-traditional households is consistent with overtreatment of boys, undertreatment of girls, or a combination of both. We present evidence that overmedication of boys is driving the excess gender gap in non-traditional households, suggesting that these households are less able to cope with early difficult male behavior.

[1] ADHD is a developmental disorder characterized by inability to focus, hyperactivity, impulsivity, and difficulty paying attention (National Institute of Mental Health 2012). The American Psychiatric Association's diagnostic criteria for ADHD requires that a child present at least six symptoms of hyperactivity or inattention. Several symptoms must be present before age 12, symptoms must be present in two or more settings (e.g. home and school), and must interfere with social, academic, or occupational functioning.

We also estimate an ADHD diagnosis gap of similar magnitude to the treatment gap. The male-female difference in diagnosis is 2.3 percentage points larger in non-traditional families than traditional families. This large diagnosis gap is concerning because ADHD itself poses significant short and long-run costs. Children with symptoms of ADHD have lower grades, higher special education enrollment, higher incidence of learning disabilities, higher delinquency, and lower completed education (Mayes et. al 2000; Currie and Stabile 2006; Fletcher and Wolfe 2008, 2009). In adulthood, individuals who have ever been diagnosed with ADHD have lower levels of employment, earn less, and are more likely to receive social assistance (Fletcher 2014).

Not only is potential overdiagnosis troubling, but excess treatment raises concerns about medication patterns because ADHD medications are not risk free. ADHD drugs pose cardiovascular risks, have side effects including appetite suppression, insomnia, headaches, dizziness, mood changes, and may cause short and long term growth deficits (MTA Cooperative Group 2004, Nissen 2006, Joshi and Adam 2002, Swanson et al. 2007). Moreover, there is mixed causal evidence of long term benefits associated with medicating for ADHD. Dalsgaard et al. 2014 use variation in physician propensity to prescribe ADHD medication as an instrument for treatment and find that children treated for ADHD have fewer subsequent hospitalizations and contacts with police using Danish data. Using a similar identification strategy, Chornity and Kitashima 2015 find that ADHD treatment reduces the probability of having a substance abuse disorder, STD, and being injured in a sample of Medicaid patients in South Carolina. Other studies, however, find no evidence of a positive impact of ADHD treatment and perhaps negative effects of medication. The Multimodal Treatment Study of Children with ADHD randomly assigned 579 children with ADHD to four treatment groups – medication alone, behavioral therapy alone, a combination of the two, and routine community care (the control group) (MTA Cooperative Group 2009). Combination medication and behavioral therapy outperformed the control group in reducing symptoms and other behavioral issues after 14 months of treatment. The medication alone treatment group had improved symptom reduction relative to the control group; however, the medication alone group did not differ significantly from the control group in terms of oppositional/aggressive symptoms, internalizing symptoms, teacher-related social skills, parent-child relations, and academic achievement. In a follow-up study conducted 8 years after the MTA study, treatment and control groups were no different across 24 measures of symptoms, behavior, delinquency, or academic outcomes (Molina et al. 2009). Using a policy change in Quebec that greatly expanded access to ADHD medications, Currie et al. 2014 find that increased access reduced math scores, increased grade repetition, and worsened parental relationships. Potential overtreatment combined with mixed evidence regarding the benefits of ADHD medication may act as a double-jeopardy for children who are already at a disadvantage in non-traditional families.

From a policy perspective, it is critical to establish a causal pathway between family structure and ADHD that is independent of other characteristics. As Painter and Levine 2000 point out, policies that target family structure will be ineffective if poor outcomes truly result from other factors correlated with family structure. On the other hand, if the relationship between family structure and childhood outcomes is causal, policies targeting this factor could generate positive results. In order to disentangle the effect of non-traditional family structure from other forms of disadvantage, we use a sub-sampling strategy and perform an alternative regression specification. Remarkably, the excess gender gap in non-traditional families is pervasive across racial and socioeconomic groups. These results support the theory that it is being in a non-traditional family and not other forms of disadvantage that increase the male-female gap in ADHD medication rates.

Our results are consistent with a larger literature associating worse outcomes for children in non-traditional families; however, few papers explore gender differences in outcomes. In general, children in non-traditional families fare worse than children in traditional families (Antecol and Bedard 2007, Craigie et al. 2012, Case et al. 1999 and 2001, Ermisch and Francesconi 2001, Evenhouse and Reilly 2004, Francesconi 2010a, Gennetian 2005, Ginther and Pollack 2004, Painter and Levine 2000). However, differences in outcomes are not always found between children raised in traditional and non-traditional families (Bjorklund et al. 2006, Francesconi et al 2010b). Antecol and Bedard 2007 find no differential effects of years spent with the biological father on male and female children. Morrison and Cherlin 1995 find that divorce predicted behavioral outcomes for boys, but not girls. Bertrand and Pan 2011 use the same identification strategy in this paper to estimate causal effects and show that family structure is an important determinant of the gender gap in disruptive behavior. They find that the male-female gap in externalizing behavior is nearly twice as large in single mother households compared to traditional households, which is similar to the magnitude of the ADHD gaps estimated in this paper.

The paper proceeds as follows: Section 2 explains the data used for the analysis, Section 3 contains the empirical specification, results are presented in Section 4, and Section 5 concludes.

2. Data

Medical Expenditures Panel Survey

Our primary data source is the 1999 to 2012 Medical Expenditures Panel Survey (MEPS). The MEPS is a five round, two-year panel survey that collects detailed health, diagnosis, and healthcare utilization information from households and medical providers. The main outcome variable is an indicator for whether or not the child had a prescription for ADHD medication at any point during the two-year panel. The variable is created using self-reported prescription information collected from the respondent and then survey personnel follow up with pharmacists to verify the prescription and obtain the type, dosage, and payment. Survey personnel also ask household members the reason for each prescription and the verbatim response is translated into ICD-9-CM codes by professional medical coders. We identify ADHD-related prescriptions using ICD-9-CM code 314.

In addition to ADHD prescriptions, we also use reported ADHD diagnosis as an outcome. During each round of interviewing, the respondent is asked about each household member's current conditions and professional medical coders translate the verbatim responses to ICD-9-CM codes. Individuals with a condition code of 314 at any point during the two year panel are coded as having ADHD. We observe ADHD medication and diagnosis status for all children in the household.

The MEPS sample includes 27,634 children between the ages of 4 and 12 in traditional and non-traditional households.[2] In addition to ADHD diagnosis and treatment, we observe age, race, maternal education, household income, region, survey year, and construct a variable for young motherhood indicating that the mother had a child before age 20. Children are classified as belonging to a traditional family if they live with both biological parents. Children in non-traditional families live with either a single parent or a step-parent.

[2] We drop 3 children with missing family income and 7 children with missing race information. Results are unchanged if these observations are retained in the sample.

Children in single-parent families are easily identified because they have only one parent. Children in traditional and blended families live with two parents and the type of parental relationships (biological or step) must be known in order to differentiate traditional from blended households. The MEPS does not include a variable for the type of parental relationship, but the NHIS does. Since the MEPS is a subsample of the NHIS from the previous year, we link the MEPS to the NHIS and use a novel approach to determine family structure at the end of the MEPS panel. For each parent-child relationship in the NHIS, we know the type of relationship (biological, step, adoptive, in-law, legal guardian, etc.). We compare the IDs of parents in the NHIS to IDs of parents in the MEPS and if both parental IDs match, then family structure is unchanged between the NHIS and MEPS survey. If parental IDs are unchanged and both parents are biological in the NHIS, then the child is in a traditional family in the MEPS. If parental IDs are unchanged and one parent is biological and the other is a step-parent in the NHIS, then the child is in a blended family in the MEPS. If one parental ID changes from the NHIS to MEPS, the child is in a blended family based on the assumption that a change in the parental adults within the household is unlikely lead to a traditional family structure. Blended and single parent families are considered non-traditional.

National Health Interview Survey

We supplement the MEPS analysis using the 1998 to 2012 National Health Interview Survey (NHIS) because the survey contains ADHD diagnosis and additional cognitive and physical health measures for children. The NHIS is an annual cross-sectional household survey that collects information on health conditions, health care use, and detailed demographic characteristics for a nationally representative sample. We draw on parental reports of child health for one child in the household from the Sample Child Supplement. Parents report whether the sample child has ever been diagnosed with ADHD. In addition to ADHD diagnosis, we also use parental reports of child behavior including whether the child has a good attention span, is worried, is unhappy, or has difficulties with emotions, concentration, behavior, or getting along with others. Lastly, we use cognitive outcomes and mental health diagnoses that are often related to ADHD.

The NHIS sample includes 69,595 children.[3] In contrast to the MEPS, ADHD in the NHIS is defined as ever been diagnosed and is observed for only one child in the household. We define all other variables including traditional and no-traditional family structure, race, maternal education, income, and young motherhood the same way in the NHIS and MEPS.

3. Empirical Specification

We test for differences in the male-female gap in ADHD medication rates using a linear probability model that compares boys and girls within traditional and non-traditional families.

$$ADHD\_RX_{irt} = \beta_0 + \beta_1 Male_{irt} + \beta_2 NT_{irt} + \beta_3 Male_{irt} \times NT_{irt} + \gamma_r + \delta_t + \varepsilon_{irt} \qquad (1)$$

$ADHD\_RX_{irt}$ is an indicator variable set to 1 for child i living in region r interviewed in year t that had an ADHD prescription during the past 2 years and zero otherwise.[4] $Male$ indicates that the child is male and NT indicates that the child lives in a non-traditional family. All regressions also include age indicators to control for age effects, region indicators absorb regional variation, and year indicators to control for the national time trend in ADHD medication rates. The standard errors are clustered by family.[5] We do not control for other factors that might affect ADHD medication rates such as race, parental education, or income. Instead, we use a sub-sampling strategy and perform an alternative regression specification to disentangle the effect of non-traditional family structure from other forms of disadvantage.

In all specifications, the omitted category is girls in traditional families. The coefficient β_1 is the male-female ADHD prescription gap for traditional families, β_2 is non-traditional-traditional gap for girls, and $(\beta_1 + \beta_3)$ is the male-female gap for non-traditional families. The difference-in-difference estimate of the excess male-female gap for non-traditional families relative to traditional families is then β_3.[6]

[3] We drop 3 children with missing race information and 484 children with missing maternal education information. The results are unchanged if these observations are included in the sample.
[4] In some regressions, the dependent variable is an indicator for ADHD diagnosis or a measure of cognitive or emotional health.
[5] NHIS regressions are not clustered by family because the sample includes only one child per household.
[6] We have also specified a version of equation (1) with separate effects for the two types of non-traditional families: single parents and blended families. Results are discussed in the next section and presented in Appendix Table 2.

A causal interpretation of this difference-in-difference estimate (β_3) is compromised if child gender influences family structure. In fact, previous research shows that having a male child slightly increases the probability that unwed parents marry and that married parents remain married (Katzev et. al 1994; Mott 1994; Lundberg and Rose 2003; Bedard and Deschenes 2005; Dahl and Moretti 2008). However, Morgan and Pollard (2003) show that the correlation between child gender and subsequent divorce is gone by 1994 in Current Population Survey data. And, Lundberg et al. (2007b) find that the association between child gender and parental living arrangements disappears by age one using a sample of low-income parents from the Fragile Families and Child Wellbeing Study. Overall, the evidence suggests that by the 2000s (the time period of our data), the impact of child gender on family structure is at most very small.

Consistent with the literature described above, Table 1 demonstrates that average socioeconomic characteristics for boys and girls across traditional and non-traditional families are balanced in the MEPS sample. [7] Male-female average differences for observable characteristics are not statistically different for children in traditional and non-traditional households (difference-in-difference). These results are consistent with the absence of selection into family structures based on child gender. In other words, child gender appears to be as good as randomly assigned across family structures.

If is worth emphasizing that even if one was still to believe that small amount of selection continues to exist, even if not detectable in observables, such a small amount of non-random selection into family structure by child gender could explain only a tiny fraction of the 2.6 percentage point excess ADHD prescription gap for non-traditional families that we find.

4. Results

Table 2 presents linear regression results for the gender gap in ADHD medication for traditional and non-traditional families. In each regression, the dependent variable is an indicator for an ADHD prescription during the past 2 years. Boys in traditional families are 2.9 percentage

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Differences in the male-female ADHD treatment and diagnosis gap are generally not statistically different between single parent and blended families; therefore, we choose to combine these two groups for our main specification.

[7] Appendix Table 1 includes similar tests for the NHIS sample.

points more likely than girls in traditional families to take ADHD medication. In non-traditional families, boys are 5.4 percentage points more likely than girls to have an ADHD prescription. Boys in non-traditional families are disproportionately more likely to be medicated for ADHD; the excess gender gap of 2.6 percentage points in non-traditional families essentially doubles the male-female gap in traditional families.

Although family structure is endogenous, it is worth noting that there is no traditional family effect on ADHD medication outcomes for girls (β_2) – girls in traditional and non-traditional families are equally likely to be medicated for ADHD. Because girls are equally likely to be medicated in both family types, the 2.6 percentage point excess gender gap in non-traditional families comes solely from an increase in boys' medication rates in non-traditional households. Thus, we interpret the excess medication gap in non-traditional families as being generated by overtreatment of boys rather than undertreatment of girls.

The estimates reported in column 1 are from a reduced form model that purposefully excludes family and parental characteristics that might be highly correlated with family structure. This, of course, leaves open the possibility that the net effect we report partially reflects other family/parental characteristics. For example, black children are much more likely to live in non-traditional households. We explore this issue in two ways. First, we sub-sample on available important family/parental characteristics. Second, we exclude family structure and estimate the excess gender gaps for other family/parental characteristics directly.

Columns 2-9 in Table 2 report estimates for important family/parental characteristic sub-samples to explore the possibility that the overall average effect is driven by specific sub-groups or characteristics. A remarkable feature of Table 2 is that the excess gender gap in non-traditional families is large, and of roughly the same magnitude for whites and non-whites, among mothers with no more than a high school education and those with some college or more, among children of women who had their first child before the age of 21 and those who had their first child later, and among families in the bottom and top third of the income distribution. The excess gender gap in non-traditional families is always approximately 2.5 percentage points. As such, there is no evidence that the overall average excess gender gap for non-traditional families is driven by any particular sub-group of the population.

Table 3 explores the correlation between family structure and other family/parental characteristics from the opposite direction by replacing the non-traditional family indicator (and its interaction with gender) with family/parental characteristics that defined the sub-samples in Table 2. To facilitate comparisons, column 1 of Table 3 replicates column 1 of Table 2 showing the main result for non-traditional families. Column 2 of Table 3 excludes the non-traditional variables and instead includes an indicator for nonwhite and its interaction with male. While there is a 4.5 percentage point male-female gap in ADHD medication rate for whites, the non-white male-female gap is actually smaller than the white gap by 1.9 percentage points. Columns 3 and 4 similarly repeat the analysis by maternal education level and maternal age at first birth (first child born before age 21). Again there is a male-female gap, but no evidence of an excess male-female gap for less educated mothers or mothers whose first birth occurred before age 21. The only excess male-female gap we estimate is for children in families in the bottom third of the income distribution (column 5). This is not surprising because non-traditional families are disproportionately low income, which makes it difficult to separate the effect of income from the effect of family structure.

Taken as a whole, the results reported in Tables 2 and 3 strongly suggest that there is a substantial excess gender gap in ADHD medication rates for children in non-traditional families caused by family structure itself. Stated somewhat differently, the reported estimates do not support the conjecture that non-traditional family structure is simply proxying for another form of disadvantage. Rather, it is being in a non-traditional family and not other forms of disadvantage that increase the male-female gap in ADHD medication rates.

As not all children diagnosed with ADHD are prescribed medication, it is worth repeating the medication analysis for diagnosis rates. We have two data options for this analysis. Panel A of Table 4 presents results for the MEPS sample, in which ADHD is set to 1 for children who report having ADHD at any point during the two year interview period. Panel B of Table 4 presents results using the NHIS sample. In the NHIS, parents are asked if the child has ever been diagnosed with ADHD. As a result, ADHD diagnosis rates in the NHIS are higher than in the MEPS and the magnitude of the estimated effects are generally larger as well. Regardless of which data set or sample we use, the estimates tell the same story as Table 2; there is an excess ADHD diagnosis gender gap in non-traditional families.

While not the focus of the analysis, it is worth commenting on the emergence a consistently higher non-traditional family ADHD diagnosis rate in Table 4 because there is not a non-traditional family ADHD medication gap. Although the non-traditional ADHD diagnosis gap should not be interpreted as causal because family structure is endogenous, it is sizeable across all sub-samples. To the best of our knowledge, an excess non-traditional ADHD diagnosis rate has not been reported elsewhere.

One potential source of heterogeneity that is not shown in Tables 2 through 4 is blended versus single parent families. In Appendix Table 2, we present results from a version of equation (1) that allows the male-female gap to vary between single parent, blended, and traditional families. The results for single parent and blended families are generally not statistically different from each other and are materially the same as the combined results. No pattern of differences between single parent and blended families emerges; thus, we have chosen to combine single and blended families into one category.

We next turn to examining the differential impact of a family structure by child gender on other cognitive and mental health outcomes that are often present in children with ADHD (Mayes et al. 2000). Table 5 presents the results of estimating equation (1) for the dependent variables listed across the top row of the table. In all cases, these are parental reports of whether the child has experienced the listed problem in the past 6 months. The dependent variables are self explanatory with the exception of emotional difficulties; the questionnaire asks whether the child has had difficulties in any of the following areas: emotions, concentration, behavior, or being able to get along with other people. In line with the ADHD medication and diagnosis results, we find larger male-female gaps in non-traditional families for many of these measures. The excess gender gap for non-traditional families are 4.3, 2.6, 3.1, and 2.2 percentage points for low attention span, learning disability, emotional difficulties, and unhappy, respectively. Although all of these results are troubling, the unhappiness result may be particularly concerning because there is no gender gap in unhappiness in traditional families. This suggests that boys do not have a differential predisposition for unhappiness in general, but that a non-traditional family structure imposes unhappiness more on boys than girls.

Thus far, we have ignored the fact that we observe all children in the household in the MEPS data other than to cluster the standard errors. In Panel A of Table 6, we add family fixed effects to equation (1) to estimate the within-family gender gap in ADHD medication rates, allowing for differences across traditional and non-traditional families. Once family fixed effects are included, the coefficients of interest are identified exclusively from families with two or more children and at least one child of each gender. Overall (column 1), we continue to estimate a 2.1 percentage point excess male-female gap for non-traditional families, but it is imprecisely estimated. The remaining columns report the results for family/parent characteristic sub-samples. Here we see the first hint that the excess gender gap for non-traditional families is concentrated among disadvantaged sub-groups, at least among families with two or more mixed-sex children. But due to statistical imprecision, we can never rule out the possibility of equivalent excess gender gaps across disadvantaged and advantaged sub-groups.

While family fixed effects allow us to control for unobserved family characteristics that affect all children in the household, in our context they have the drawback that the gender gap estimates only reflect the effect for a specific type of family. To the extent that family structure effects differ across family size and/or child sex composition, the family fixed effects estimates only tell part of the story. The remaining panels of Table 6 therefore report the OLS estimates for families with two or more different-sex children (Panel B), two or more same-sex children (Panel C), and single child families (Panel D). While many of the point estimates for the excess gender gap for non-traditional families are noisy once we sub-sample so heavily, the results for multiple child families are consistent with those reported in the family fixed effects panel. The most striking results are for single child families (Panel D). The excess ADHD medication rate for boys is non-traditional families with an only child is 3.2 percentage points. And in contrast to the theme of socioeconomic disadvantage that emerges for multiple-child families, the overall result for only children is driven by those with more educated and high income mothers.

Table 6 highlights an important limitation of family fixed effects in some contexts. By making comparisons within a family, family fixed effects can miss important variation across families. In this setting, we find evidence that the effects for multiple-child families are concentrated among less advantaged groups while the effects for only child families are perhaps larger and driven by more advantaged groups.

5. Discussion

ADHD is the most common neurobehavioral disorder in childhood, yet seemingly unusual patterns in treatment rates remain largely unexplained and imply that the disorder is frequently under- and/or over-diagnosed and treated. In this paper, we document the large excess male-female ADHD diagnosis and treatment rates for non-traditional families. Overmedication for ADHD is concerning because ADHD medications have non-trivial side effects and there is little evidence of long-term benefits for those treated for ADHD with medication, while diagnosis is associated with worse short and long-run outcomes. Our findings are part of a growing literature exploring male vulnerability during childhood and whether this might be part of the reason that disadvantaged boys fare poorly in adulthood (Heckman and Rubinstein 2001; Jacob 2002; Heckman et al. 2006; Becker et al. 2010; Chetty et al. 2011; Bertrand and Pan 2013; Autor et al. 2015). Since ADHD is related to worse cognitive and non-cognitive development, excess male-female gaps in ADHD rates for non-traditional families are consistent with worse adult outcomes for boys from disadvantaged backgrounds.

But from what does the gap arise? Lundberg et al. (2007a) and Bertrand and Pan (2013) show that single mothers spend less time with male children, while boys in two-parent households receive the same or more parental time investment than girls. However, Bertrand and Pan (2013) also find that differences in parental time investment explain only a small portion of the gender gap in externalizing behavior. While there is still a lot to learn about why boys fare relatively worse than girls in non-traditional families, ADHD is clearly correlated with both short and long-run outcomes, and the results reported in this paper document huge excess male-female gaps in ADHD diagnosis and treatment in non-traditional families. But whether the excess treatment of ADHD itself leads to poor outcomes or it describes the inability of non-traditional families to cope with difficult boy behavior which in turn leads to poor outcomes remains an open question.

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Table 1. Child and Family Demographics by Gender and Family Structure (MEPS)

	Non-Traditional Family			Traditional Family			D-in-D
	Boys (1)	Girls (2)	Dif (3)	Boys (4)	Girls (5)	Dif (6)	NT - T (7)
Age of Child	8.19	8.26	-0.07	7.87	7.88	-0.02	-0.05
	(2.56)	(2.56)	(0.06)	(2.60)	(2.59)	(0.05)	(0.08)
Number of Children in Household	1.80	1.82	-0.02	1.86	1.87	-0.01	-0.01
	(0.89)	(0.89)	(0.02)	(0.84)	(0.83)	(0.02)	(0.03)
Young Mother (first birth ≤20)	0.41	0.44	**-0.03**	0.15	0.15	-0.01	-0.02
	(0.49)	(0.50)	(0.01)	(0.35)	(0.36)	(0.01)	(0.01)
<u>Race and Ethnicity</u>							
White	0.46	0.45	0.00	0.66	0.67	-0.01	0.01
	(0.50)	(0.50)	(0.01)	(0.47)	(0.47)	(0.01)	(0.02)
Black	0.25	0.26	-0.01	0.06	0.06	0.00	0.00
	(0.44)	(0.44)	(0.01)	(0.24)	(0.24)	(0.00)	(0.01)
Hispanic	0.23	0.23	0.00	0.20	0.19	0.01	-0.01
	(0.42)	(0.42)	(0.01)	(0.40)	(0.40)	(0.01)	(0.01)
Other	0.06	0.06	0.00	0.08	0.07	0.00	0.00
	(0.24)	(0.24)	(0.01)	(0.27)	(0.26)	(0.00)	(0.01)
<u>Maternal Education</u>							
Less than High School	0.23	0.22	0.01	0.13	0.13	0.00	0.00
	(0.42)	(0.41)	(0.01)	(0.34)	(0.34)	(0.01)	(0.01)
High School Diploma or GED	0.33	0.35	-0.02	0.24	0.23	0.01	-0.02
	(0.47)	(0.48)	(0.01)	(0.42)	(0.42)	(0.01)	(0.01)
Some College	0.28	0.29	-0.01	0.25	0.25	0.00	0.00
	(0.45)	(0.45)	(0.01)	(0.43)	(0.43)	(0.01)	(0.01)
Bachelors Degree or more	0.15	0.14	0.01	0.38	0.39	-0.01	0.02
	(0.36)	(0.35)	(0.01)	(0.49)	(0.49)	(0.01)	(0.01)
Household Income	35,535	35,212	322	75,899	77,759	(1,860)	2,182
	(35276)	(33455)	-939	(53313)	(54666)	-1094	-1442
<u>ADHD</u>							
Prescription	0.08	0.02	**0.05**	0.05	0.02	**0.03**	**0.03**
	(0.27)	(0.15)	(0.01)	(0.21)	(0.13)	(0.00)	(0.01)
Diagnosis	0.10	0.04	**0.06**	0.06	0.02	**0.04**	**0.02**
	(0.30)	(0.20)	(0.01)	(0.24)	(0.15)	(0.00)	(0.01)
Sample Size	5604	5541		8404	8085		

Summary statistics are from the 1999 to 2012 Medical Expenditures Panel Survey. Traditional families include both a biological mother and father. The sample includes children between the ages of 4 and 12. Standard deviations of means are in parenthises. Standard errors of differences are obtained via regression and are in parenthesis. Differences that are statistically significant at the 5 percent level are bolded.

Table 2. Gender, Family Structure, and ADHD Prescriptions (MEPS)

		Race		Maternal Education		Young Mother		Household Income	
	Entire Sample (1)	Nonwhite (2)	White (3)	≤HS Grad (4)	Some College + (5)	1st Birth ≤20 (6)	1st Birth 20+ (7)	≤33%tile (8)	>33%tile (9)
Male	**0.0288**	**0.0124**	**0.0368**	**0.0246**	**0.0312**	**0.0278**	**0.0290**	**0.0308**	**0.0281**
	(0.0036)	(0.0034)	(0.0051)	(0.0049)	(0.0049)	(0.0067)	(0.0040)	(0.0064)	(0.0042)
Non-Traditional	0.0019	0.0020	0.0079	0.0053	-0.0014	0.0066	0.0024	0.0038	0.0019
	(0.0039)	(0.0032)	(0.0073)	(0.0058)	(0.0050)	(0.0047)	(0.0058)	(0.0047)	(0.0076)
Male×Non-Traditional	**0.0256**	**0.0301**	**0.0321**	**0.0263**	**0.0275**	**0.0230**	**0.0279**	**0.0260**	***0.0227***
	(0.0068)	(0.0062)	(0.0121)	(0.0089)	(0.0103)	(0.0098)	(0.0094)	(0.0089)	(0.0116)
Mean Traditional Girls	0.0179	0.00993	0.0218	0.0159	0.0190	0.0110	0.0191	0.0128	0.0192
Sample Size	27,634	16,820	10,814	15,500	12,134	8,946	18,688	13,321	14,313

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys. All regressions include indicators for child age, region, and survey year.

Table 3. Gender, Deprivation, and ADHD Prescriptions (MEPS)

	Non-Traditional (1)	Nonwhite (2)	Mother ≤HS Grad (3)	Young Mother (first birth ≤20) (4)	≤33%tile Income (5)
Male	**0.0288**	**0.0451**	**0.0385**	**0.0364**	**0.0329**
	(0.0036)	(0.0047)	(0.0043)	(0.0037)	(0.0040)
Column Heading	0.0019	**-0.0119**	-0.0009	-0.0045	-0.0021
	(0.0039)	(0.0033)	(0.0036)	(0.0032)	(0.0033)
Male×Column Heading	**0.0256**	**-0.0187**	-0.0024	0.0043	**0.0135**
	(0.0068)	(0.0056)	(0.0061)	(0.0063)	(0.0061)
Mean Omitted Girls	0.0179	0.0253	0.0199	0.0212	0.0211
Sample Size	27,634	27,634	27,634	27,634	27,634

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys. All regressions include indicators for child age, region, and survey year.

Table 4. Gender, Family Structure, and ADHD Diagnosis (MEPS and NHIS)

		Race		Maternal Education		Young Mother		Household Income	
	Entire Sample (1)	Nonwhite (2)	White (3)	≤HS Grad (4)	Some College + (5)	1st Birth ≤20 (6)	1st Birth 21+ (7)	≤33%tile (8)	>33%tile (9)
<u>Panel A: MEPS</u>									
Male	**0.0399**	**0.0214**	**0.0491**	**0.0300**	**0.0454**	**0.0348**	**0.0408**	**0.0385**	**0.0400**
	(0.0041)	(0.0044)	(0.0057)	(0.0054)	(0.0056)	(0.0071)	(0.0046)	(0.0081)	(0.0047)
Non-Traditional	**0.0130**	**0.0077**	**0.0244**	**0.0179**	0.0058	**0.0183**	***0.0125***	**0.0179**	0.0028
	(0.0047)	(0.0039)	(0.0089)	(0.0070)	(0.0058)	(0.0063)	(0.0065)	(0.0064)	(0.0078)
Male×Non-Traditional	**0.0234**	**0.0309**	***0.0275***	**0.0278**	**0.0251**	**0.0286**	**0.0227**	0.0267	***0.0206***
	(0.0079)	(0.0074)	(0.0141)	(0.0104)	(0.0118)	(0.0119)	(0.0105)	(0.0114)	(0.0124)
Mean Traditional Girls	0.0216	0.0141	0.0253	0.0200	0.0225	0.0139	0.0230	0.0185	0.0224
Sample Size	27,634	16,820	10,814	15,500	12,134	8,946	18,688	13,321	14,313
<u>Panel B: NHIS</u>									
Male	**0.0386**	**0.0218**	**0.0465**	**0.0345**	**0.0410**	**0.0338**	**0.0397**	**0.0402**	**0.0412**
	(0.0023)	(0.0032)	(0.0030)	(0.0038)	(0.0029)	(0.0064)	(0.0025)	(0.0064)	(0.0030)
Non-Traditional	**0.0229**	**0.0159**	**0.0328**	**0.0217**	**0.0220**	**0.0119**	**0.0258**	**0.0200**	**0.0147**
	(0.0027)	(0.0035)	(0.0043)	(0.0041)	(0.0037)	(0.0055)	(0.0034)	(0.0051)	(0.0043)
Male×Non-Traditional	**0.0461**	**0.0462**	**0.0550**	**0.0441**	**0.0497**	**0.0639**	**0.0347**	**0.0455**	**0.0461**
	(0.0051)	(0.0061)	(0.0081)	-(0.0073)	(0.0072)	(0.0098)	(0.0061)	(0.0090)	(0.0085)
Mean Traditional Girls	0.0229	0.0174	0.0254	0.0260	0.0211	0.0304	0.0214	0.0287	0.0229
Sample Size	69,595	34,728	34,867	30,926	38,669	17,344	52,251	22,161	33,012

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys. NHIS sample includes children ages 4-12 from 1998 to 2012 surveys. All regressions include indicators for child age, region, and survey year.

Table 5. Cognitive Outcomes and Mental Health (NHIS)

	Low Attention Span (1)	Learning Disability (2)	Developmental Disability (3)	Emotional Difficulties (4)	Worried (5)	Unhappy (6)
Male	**0.1062**	**0.0266**	**0.0228**	**0.0182**	0.0055	-0.0015
	(0.0084)	(0.0025)	(0.0021)	(0.0026)	(0.0070)	(0.0047)
Non-Traditional	**0.0917**	**0.0282**	**0.0135**	**0.0277**	**0.0411**	**0.0480**
	(0.0103)	(0.0034)	(0.0028)	(0.0037)	(0.0087)	(0.0064)
Male×Non-Traditional	**0.0430**	**0.0260**	0.0002	**0.0308**	0.0180	**0.0227**
	(0.0144)	(0.0054)	(0.0042)	(0.0062)	(0.0122)	(0.0092)
Mean Traditional Girls	0.310	0.0374	0.0229	0.0193	0.193	0.0750
Sample Size	30,908	69,595	69,595	38,602	30,908	30,908

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. NHIS sample includes children ages 4-12 from 1998 to 2012 surveys. All regressions include indicators for child age, region, and survey year.

Table 6. Family Fixed Effects and OLS (ADHD Prescriptions in MEPS)

	Entire Sample	Race		Maternal Education		Young Mother	
		Nonwhite	White	≤HS Grad	Some College +	1st Birth ≤20	1st Birth 21+
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Fixed Effects							
Male	**0.0343**	**0.0235**	**0.0386**	***0.0222***	**0.0411**	0.0246	**0.0362**
	(0.0096)	(0.0096)	(0.0136)	(0.0125)	(0.0135)	(0.0173)	(0.0113)
Male×Non-Traditional	0.0209	***0.0298***	0.0169	***0.0384***	0.0040	0.0384	0.0111
	(0.0174)	(0.0179)	(0.0320)	(0.0203)	(0.0311)	(0.0240)	(0.0261)
Mean Traditional Girls	0.0179	0.0099	0.0218	0.0159	0.0190	0.0110	0.0191
Sample Size	27,634	16,820	10,814	15,500	12,134	8,946	18,688
Panel B: OLS - Mixed-Sex Kids							
Male	**0.0325**	**0.0256**	**0.0360**	**0.0188**	**0.0403**	**0.0246**	**0.0343**
	(0.0058)	(0.0056)	(0.0081)	(0.0077)	(0.0078)	(0.0096)	(0.0067)
Non-Traditional	0.0047	0.0028	0.0172	-0.0018	0.0136	0.0122*	0.0056
	(0.0055)	(0.0042)	(0.0108)	(0.0073)	(0.0101)	(0.0067)	(0.0083)
Male×Non-Traditional	**0.0220**	***0.0278***	0.0220	**0.0426**	0.0017	**0.0373**	0.0130
	(0.0101)	(0.0102)	(0.0181)	(0.0122)	(0.0173)	(0.0143)	(0.0144)
Mean Traditional Girls	0.0160	0.00714	0.0203	0.0179	0.0148	0.00882	0.0175
Sample Size	10,542	6,567	3,975	6,219	4,323	3,941	6,601
Panel C: OLS - Same-Sex 2+ Kids							
Male	**0.0231**	**0.0158**	**0.0266**	**0.0268**	***0.0194***	**0.0381**	**0.0208**
	(0.0074)	(0.0067)	(0.0106)	(0.0097)	(0.0101)	(0.0133)	(0.0085)
Non-Traditional	0.0057	0.0034	0.0131	0.0203	-0.0105	0.0061	0.0107
	(0.0110)	(0.0054)	(0.0212)	(0.0167)	(0.0097)	(0.0090)	(0.0189)
Male×Non-Traditional	0.0166	***0.0187***	0.0237	0.0104	0.0234	-0.0050	0.0269
	(0.0155)	(0.0113)	(0.0295)	(0.0216)	(0.0188)	(0.0180)	(0.0247)
Mean Traditional Girls	0.0208	0.00759	0.0271	0.0133	0.0246	0.0130	0.0223
Sample Size	7,300	4,418	2,882	4,149	3,151	2,497	4,803
Panel D: OLS - Single Kid							
Male	**0.0295**	-0.0022	**0.0458**	**0.0290**	**0.0300**	**0.0263**	**0.0296**
	(0.0058)	(0.0056)	(0.0084)	(0.0082)	(0.0079)	(0.0129)	(0.0064)
Non-Traditional	-0.0021	0.0006	0.0007	0.0040	-0.0075	0.0016	-0.0027
	(0.0053)	(0.0064)	(0.0082)	(0.0072)	(0.0074)	(0.0092)	(0.0064)
Male×Non-Traditional	**0.0319**	**0.0395**	**0.0375**	0.0213	**0.0438**	0.0277	**0.0341**
	(0.0106)	(0.0103)	(0.0175)	(0.0133)	(0.0163)	(0.0190)	(0.0128)
Mean Traditional Girls	0.0178	0.0144	0.0196	0.0155	0.0192	0.0123	0.0186
Sample Size	9,792	5,835	3,957	5,132	4,660	2,508	7,284

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys.

Appendix Table 1. Child and Family Demographics by Gender and Family Structure (NHIS)

	Non-Traditional Family			Traditional Family			Difference-in-Difference
	Boys	Girls	Difference	Boys	Girls	Difference	Non-Traditional - Traditional (3)-(6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age of Child	8.14	8.19	-0.04	7.94	7.91	0.03	-0.07
	(2.59)	(2.56)	(0.04)	(2.58)	(2.59)	(0.03)	(0.05)
Number of Children in Household	2.67	2.70	-0.03	2.56	2.56	0.00	-0.04
	(1.23)	(1.28)	(0.02)	(1.11)	(1.10)	(0.02)	(0.03)
Young Mother (first birth ≤20)	0.44	0.44	0.00	0.16	0.16	**-0.01**	0.01
	(0.50)	(0.50)	(0.01)	(0.36)	(0.37)	(0.00)	(0.01)
Race and Ethnicity							
White	0.49	0.49	0.01	0.68	0.68	0.00	0.01
	(0.50)	(0.50)	(0.01)	(0.47)	(0.47)	(0.01)	(0.01)
Black	0.26	0.27	-0.01	0.07	0.07	0.00	-0.01
	(0.44)	(0.44)	(0.01)	(0.25)	(0.25)	(0.00)	(0.01)
Hispanic	0.21	0.21	0.00	0.19	0.19	0.00	0.00
	(0.41)	(0.40)	(0.01)	(0.39)	(0.39)	(0.00)	(0.01)
Other	0.04	0.04	0.00	0.06	0.07	0.00	0.00
	(0.18)	(0.19)	(0.00)	(0.24)	(0.25)	(0.00)	(0.00)
Maternal Education							
Less than High School	0.20	0.21	**-0.01**	0.13	0.13	0.00	-0.01
	(0.40)	(0.41)	(0.01)	(0.34)	(0.34)	(0.00)	(0.01)
High School Diploma or GED	0.30	0.30	0.00	0.22	0.22	0.00	0.00
	(0.46)	(0.46)	(0.01)	(0.41)	(0.41)	(0.00)	(0.01)
Some College	0.37	0.36	0.01	0.30	0.30	0.00	0.01
	(0.48)	(0.48)	(0.01)	(0.46)	(0.46)	(0.01)	(0.01)
Bachelors Degree or more	0.13	0.13	0.00	0.35	0.35	0.01	-0.01
	(0.33)	(0.34)	(0.01)	(0.48)	(0.48)	(0.01)	(0.01)
Household Income	34954	34755	199.32	61007	61005	2	197
	(28012)	(27990)	-450	(30745)	(30653)	-355	(573)
ADHD							
Diagnosis	0.13	0.05	**0.08**	0.06	0.02	**0.04**	**0.05**
	(0.34)	(0.22)	0.00	(0.24)	(0.15)	0.00	(0.01)
Sample Size	13097	12587		22658	21253		

Summary statistics are from the 1998 to 2012 NHIS. Traditional families include both a biological mother and father. The sample includes children between the ages of 4 and 12. Standard deviations of means are in parenthises. Standard errors of differences are obtained via regression and are in parenthesis. Differences that are statistically significant at the 5 percent level are bolded.

Appendix Table 2. Traditional, Blended, and Single Parent Families (ADHD Prescription and Diagnosis)

		Race		Maternal Education		Young Mother		Household Income	
	Entire Sample	Nonwhite	White	≤HS Grad	Some College +	1st Birth ≤20	1st Birth 21+	≤33%tile	>33%tile
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: MEPS ADHD Prescription									
Male	**0.0288**	**0.0124**	**0.0368**	**0.0246**	**0.0312**	**0.0278**	**0.0291**	**0.0308**	**0.0281**
	(0.0036)	(0.0034)	(0.0051)	(0.0049)	(0.0049)	(0.0067)	(0.0040)	(0.0064)	(0.0042)
Blended	0.0045	0.0009	0.0090	0.0140	-0.0067	0.0088	*0.0053*	0.0111	0.0011
	(0.0067)	(0.0043)	(0.0111)	(0.0108)	(0.0058)	(0.0062)	(0.0118)	(0.0070)	(0.0095)
Male×Blen	**0.0225**	**0.0272**	0.0268	0.0153	**0.0342**	***0.0234***	0.0237	0.0125	**0.0280**
	(0.0103)	(0.0095)	(0.0165)	(0.0146)	(0.0138)	(0.0130)	(0.0161)	(0.0135)	(0.0140)
Single Pare	-0.0002	0.0026	0.0066	-0.0016	0.0026	0.0043	0.0005	0.0014	0.0038
	(0.0039)	(0.0037)	(0.0079)	(0.0046)	(0.0068)	(0.0052)	(0.0053)	(0.0050)	(0.0109)
Male×Sing	**0.0281**	**0.0319**	**0.0376**	**0.0349**	***0.0225***	**0.0226**	**0.0305**	**0.0305**	0.0111
	(0.0079)	(0.0072)	(0.0158)	(0.0093)	(0.0134)	(0.0113)	(0.0106)	(0.0097)	(0.0189)
P-Value for	0.643	0.668	0.619	0.223	0.515	0.953	0.713	0.199	0.459
Sample Siz	27,634	16,820	10,814	15,500	12,134	8,946	18,688	13,321	14,313
Panel B: MEPS ADHD Diagnosis									
Male	**0.0399**	**0.0214**	**0.0491**	**0.0300**	**0.0454**	**0.0348**	**0.0408**	**0.0385**	**0.0400**
	(0.0041)	(0.0044)	(0.0057)	(0.0054)	(0.0056)	(0.0071)	(0.0046)	(0.0080)	(0.0047)
Blended	***0.0151***	0.0066	***0.0228***	**0.0279**	-0.0021	**0.0216**	0.0130	**0.0345**	0.0031
	(0.0082)	(0.0054)	(0.0135)	(0.0130)	(0.0073)	(0.0100)	(0.0102)	(0.0117)	(0.0081)
Male×Blen	0.0149	**0.0260**	0.0147	0.0068	**0.0327**	0.0201	0.0164	0.0049	0.0216
	(0.0119)	(0.0111)	(0.0191)	(0.0168)	(0.0158)	(0.0164)	(0.0155)	(0.0181)	(0.0134)
Single Pare	**0.0113**	***0.0084***	**0.0263**	***0.0101***	0.0117	***0.0151***	***0.0122***	***0.0122***	0.0020
	(0.0048)	(0.0045)	(0.0100)	-0.0061	(0.0079)	(0.0067)	(0.0065)	(0.0063)	(0.0110)
Male×Sing	**0.0298**	**0.0338**	**0.0399**	**0.0439**	0.0194	**0.0370**	**0.0265**	**0.0341**	0.0184
	(0.0093)	(0.0085)	(0.0188)	(0.0113)	(0.0153)	(0.0138)	(0.0120)	(0.0120)	(0.0209)
P-Value for	0.286	0.536	0.324	0.0495	0.517	0.371	0.588	0.116	0.896
Sample Siz	27,634	16,820	10,814	15,500	12,134	8,946	18,688	13,321	14,313
Panel C: NHIS ADHD Diagnosis									
Male	**0.0386**	**0.0218**	**0.0465**	**0.0345**	**0.0410**	**0.0338**	**0.0397**	**0.0401**	**0.0412**
	(0.0023)	(0.0032)	(0.0030)	(0.0038)	(0.0029)	(0.0064)	(0.0025)	(0.0064)	(0.0030)
Blended	**0.0268**	**0.0156**	**0.0341**	**0.0259**	**0.0260**	***0.0125***	**0.0333**	**0.0339**	**0.0193**
	(0.0042)	(0.0053)	(0.0059)	(0.0062)	(0.0057)	(0.0069)	(0.0058)	(0.0100)	(0.0053)
Male×Blen	**0.0467**	**0.0325**	**0.0583**	**0.0445**	**0.0504**	**0.0652**	**0.0320**	**0.0617**	**0.0428**
	(0.0078)	(0.0093)	(0.0111)	(0.0110)	(0.0111)	(0.0129)	(0.0101)	(0.0183)	(0.0100)
Single Pare	**0.0199**	**0.0161**	**0.0313**	**0.0187**	**0.0189**	***0.0113***	**0.0210**	**0.0166**	0.0006
	(0.0033)	(0.0040)	(0.0058)	(0.0048)	(0.0045)	(0.0065)	(0.0039)	(0.0053)	(0.0056)
Male×Sing	**0.0453**	**0.0531**	**0.0507**	**0.0435**	**0.0490**	**0.0625**	**0.0363**	**0.0406**	**0.0556**
	(0.0061)	(0.0072)	(0.0107)	(0.0086)	(0.0086)	(0.0117)	(0.0071)	(0.0093)	(0.0140)
P-Value for	0.883	0.0570	0.607	0.940	0.918	0.854	0.715	0.251	0.442
Sample Siz	69,595	34,728	34,867	30,926	38,669	17,344	52,251	22,161	33,012

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys. NHIS sample includes children ages 4-12 from 1998 to 2012 surveys. All regressions include indicators for child age, region, and survey year.

Appendix Table 3. Family Fixed Effects and OLS (ADHD Diagnosis in MEPS)

	Entire Sample (1)	Mixed-Sex Children (2)	Same-Sex Children with 2+ Kids (3)	Single Child Familes (4)
Male	**0.0421**	**0.0396**	**0.0411**	**0.0396**
	(0.0100)	(0.0061)	(0.0091)	(0.0067)
Non-Traditional		**0.0149**	0.0198	0.0068
		(0.0062)	(0.0133)	(0.0064)
Male×Non-Traditional	0.0275	**0.0270**	0.0055	**0.0295**
	(0.0190)	(0.0112)	(0.0189)	(0.0122)
Mean Traditional Girls	0.0216	0.0176	0.0257	0.0228
Includes Family Fixed Effects	Yes	No	No	No
Sample Size	27,634	10,542	7,300	9,792

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys.

Appendix Table 4. Family Fixed Effects and OLS (ADHD Diagnosis in MEPS)

	Race		Maternal Education		Young Mother	
	Nonwhite (1)	White (2)	≤HS Grad (3)	Some College + (4)	1st Birth ≤20 (5)	1st Birth 21+ (6)
<u>Panel A: Fixed Effects</u>						
Male	**0.0267**	**0.0487**	**0.0285**	**0.0499**	***0.0309***	**0.0446**
	(0.0103)	(0.0142)	(0.0130)	(0.0142)	(0.0182)	(0.0118)
Male×Non-Traditional	***0.0361***	0.0280	**0.0456**	0.0109	***0.0481***	0.0156
	(0.0192)	(0.0354)	(0.0220)	(0.0340)	(0.0264)	(0.0281)
Mean Traditional Girls	0.0141	0.0253	0.0200	0.0225	0.0139	0.0230
Sample Size	16,820	10,814	15,500	12,134	8,946	18,688
<u>Panel B: OLS - Mixed-Sex Kids</u>						
Male	**0.0283**	**0.0452**	**0.0242**	**0.0485**	**0.0303**	**0.0422**
	(0.0060)	(0.0085)	(0.0080)	(0.0082)	(0.0101)	(0.0070)
Non-Traditional	**0.0114**	**0.0265**	0.0076	***0.0216***	**0.0228**	0.0125
	(0.0056)	(0.0117)	(0.0081)	(0.0111)	(0.0087)	(0.0089)
Male×Non-Traditional	**0.0334**	0.0308	**0.0498**	0.0054	**0.0459**	0.0154
	(0.0110)	(0.0205)	(0.0133)	(0.0195)	(0.0160)	(0.0158)
Mean Traditional Girls	0.0109	0.0209	0.0198	0.0163	0.0130	0.0186
Sample Size	6,567	3,975	6,219	4,323	3,941	6,601
<u>Panel C: OLS - Same-Sex 2+ Kids</u>						
Male	**0.0284**	**0.0478**	**0.0316**	**0.0444**	**0.0511**	**0.0389**
	(0.0096)	(0.0127)	(0.0102)	(0.0128)	(0.0148)	(0.0104)
Non-Traditional	0.0075	0.0392	**0.0423**	-0.0103	0.0276*	0.0168
	(0.0068)	(0.0262)	(0.0197)	(0.0111)	(0.0151)	(0.0196)
Male×Non-Traditional	0.0182	0.0019	-0.0007	0.0281	-0.0111	0.0181
	(0.0144)	(0.0356)	(0.0250)	(0.0227)	(0.0251)	(0.0265)
Mean Traditional Girls	0.0117	0.0324	0.0160	0.0307	0.0144	0.0279
Sample Size	4,418	2,882	4,149	3,151	2,497	4,803
<u>Panel D: OLS - Single Kid</u>						
Male	0.0102	**0.0545**	**0.0344**	**0.0427**	**0.0310**	**0.0404**
	(0.0075)	(0.0095)	(0.0099)	(0.0089)	(0.0135)	(0.0074)
Non-Traditional	0.0049	0.0150	0.0119	0.0011	***0.0078***	***0.0095***
	(0.0074)	(0.0104)	(0.0091)	(0.0091)	(0.0099)	(0.0081)
Male×Non-Traditional	**0.0366**	***0.0347***	0.0269	**0.0361**	***0.0394***	***0.0265***
	(0.0126)	(0.0203)	(0.0164)	(0.0184)	(0.0211)	(0.0148)
Mean Traditional Girls	0.0189	0.0249	0.0229	0.0228	0.0148	0.0240
Sample Size	5,835	3,957	5,132	4,660	2,508	7,284

All models are population weighted and standard errors clustered at the family-level. p<0.05 are bold and p<0.10 are bold-italic.
MEPS sample includes children ages 4-12 from 1999 to 2012 surveys.

Appendix Table 5. Results by Age

	ADHD Medication (MEPS)			ADHD Diagnosis (MEPS)			ADHD Diagnosis (NHIS)		
	Ages 4-6 (1)	Ages 7-9 (2)	Ages 10-12 (3)	Ages 4-6 (4)	Ages 7-9 (5)	Ages 10-12 (6)	Ages 4-6 (7)	Ages 7-9 (8)	Ages 10-12 (9)
Male	**0.0067**	**0.0348**	**0.0472**	**0.0147**	**0.0501**	**0.0577**	**0.0154**	**0.0408**	**0.0604**
	(0.0023)	(0.0062)	(0.0089)	(0.0039)	(0.0073)	(0.0095)	(0.0028)	(0.0041)	(0.0049)
Non-Traditional	**0.0056**	0.0078	-0.0035	**0.0119**	**0.0201**	0.0110	**0.0166**	**0.0272**	**0.0274**
	(0.0022)	(0.0061)	(0.0081)	(0.0036)	(0.0070)	(0.0101)	(0.0037)	(0.0049)	(0.0053)
Male×Non-Traditional	**0.0225**	***0.0200***	***0.0272***	**0.0213**	0.0215	0.0203	**0.0303**	**0.0520**	**0.0498**
	(0.0073)	(0.0110)	(0.0141)	(0.0092)	(0.0132)	(0.0161)	(0.0070)	(0.0089)	(0.0099)
Mean Traditional Girls	0.0008	0.0167	0.0381	0.0008	0.0167	0.0381	0.0086	0.0252	0.0356
Sample Size	9,127	9,219	9,288	9,127	9,219	9,288	23,453	22,816	23,326

All models are population weighted and standard errors clustered at the family-level. $p<0.05$ are bold and $p<0.10$ are bold-italic. MEPS sample includes children ages 4-12 from 1999 to 2012 surveys. NHIS sample includes children ages 4-12 from 1998 to 2012 surveys. All regressions include indicators for child age, region, and survey year.