Patterns in housework and childcare among girls and boys

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Abstract

When do girls begin performing household work? While there is clear research discussing household work among women, the development of time-use patterns in household work among girls is not well understood. Around the globe, long before adulthood, many girls begin devoting significant amounts of time to unpaid housework and childcare. In developing countries, girls often make vital contributions to family welfare through caring for family members, transporting water, and gathering fuel. In the United States, a developed country, most girls' participation in housework begins at a young age, but the time spent performing home duties is substantially less than the time spent by their peers in developing countries. This study describes the evolution of time-use patterns in the United States for girls relative to boys during the childhood and adolescent years. It also illustrates participation rates in home duties, the proportion of girls performing housework on a given day. This study finds that girls participate in home duties significantly more often than boys by age eight and that among girls involved in home duties, the time spent in home duties gradually increases through adolescence but remains significantly lower than rates seen among American adult women. Young girls' and boys' participation rates in domestic work vary by race, ethnicity, family income, number of parents in the home, and mother's employment level.

Keywords

gender, housework, home duties, childcare, time use, patterns

omestic duties such as cooking, laundering clothing, and cleaning are regular occurrences in most homes worldwide. Adults perform significant amounts of domestic work, with adult women typically spending more time than men in home production activities, as documented by Burda, Hamermesh, and Weil (2013). Married women are more likely to provide childcare than men, and women spend more time cleaning, cooking, and shopping. While time-use patterns among adults at home are readily accepted and

documented, the onset and development of time-use patterns in home duties during childhood are not well understood. This research studies the evolution of domestic work among children and adolescents, with a focus on differences between boys and girls. While a few researchers look at average time spent in home duties among all children, this focus on girls relative to boys in overall time spent and participation rates in home duties is new.

Parents, guardians, and others involved in public policy are interested in how chil-

dren spend time. From one point of view, children working at home probably benefit from the work. Children grow in responsibility and dependability, qualities that likely impact future achievement (Beach, 1997; Call, Mortimer, & Shanahan, 1995; Kuperminc, Jurkovic, & Casey, 2009). For example, Stewart and Martin (1984) demonstrate that adolescents who care for siblings with a mother present rate higher in perspective taking and social understanding. Further, time spent working at home could play a role in forming healthy time-use habits later in life. From another point of view, time spent performing home duties requires trade-offs. Home duties can crowd out constructive activities that promote achievement, such as gaining an education, studying, and paid labor. Dodson and Dickert (2004) find that performing home duties may hinder children from pursuing other developmentally appropriate experiences. If children in disadvantaged backgrounds are differentially impacted by home duties and childcare at home, time use at home could have lasting consequences. Understanding the impact of gender on participation rates in domestic work provides insight into weighing the costs and benefits of home duties for children and adolescents.

On a global scale, it is difficult to measure domestic work in developing countries. However, there is a growing literature identifying important trends for girls at home. Girls in developing countries do more domestic work than boys, and the amount of work performed increases with age, as documented by Kruger and Berthelon (2007). This seems consistent with the observation that girls prepare for adult roles, given that "in many countries, cultural norms are that women are expected to…do most of the housework and childrearing" (Agènor, Canuto, & da Silva, 2010, p. 12). In develop-

ing countries, several influential factors at a community level appear to impact girls in their domestic work. Studies concur that access to water reduces girls' home duties (van Selm, 2005). Collecting water is often performed by girls on foot, and access to water greatly reduces the demands on girls who are responsible for providing water for their families. For example, Guarcello and Lyon (2003) have found that in Yemen, girls whose families are connected to a public water supply are 16% more likely to attend school than girls whose families do not connect to a public supply, with less effect for boys. The authors have concluded that many of these girls have time consuming responsibilities in water collection. Access to electricity is another factor impacting girls in their home duties (d'Adda, 2009). For instance, "in Kenya...lack of electricity may contribute to a larger work burden for children" as they collect firewood and fuel for their families (Agènor et al., 2010, p. 14). These findings focus on the importance of public infrastructure in impacting girls' time-use in domestic work and childcare, while not exploring the importance of participation rates in home duties.

This research studies the participation rates of children in home duties. The decision to devote any amount of time to a particular home duty means the child participates in the activity. This decision may be a separate decision than that of how much time to spend performing the activity. While ideally this could be studied in a variety of developed and developing countries, detailed and reliable time-use data are limited. With this data constraint in mind, the analysis focuses on the United States. It analyzes data from the Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID) and reports participation rates in home duties for girls and adolescents. Child domestic work participation rates are then studied in the context of race and ethnicity, family income, parental composition, and maternal employment.

Data Description

The data underlying the empirical analysis provides a wealth of information on how girls and boys spend their time. The PSID provides time-use information on children and adolescents using a time diary. This study analyzes time-use through individual-level data collected from time diaries from the 1997 to 2007 Child Development Supplement (CDS) of the PSID. The PSID is a longitudinal survey of United States families. Beginning in 1997, the PSID added the CDS in which time-use data are collected. The CDS samples all PSID families with children aged zero to 12 years, beginning in 1997. The CDS randomly selects two children per household when more than two children live in the household. By using weights, the sample is representative of the United States population of children. The CDS follows previously sampled children into adolescence by re-sampling in 2002 and 2007. Time diary interviews occur between March and December, excluding summer months of June, July, and August, and the diary describes a weekday. The diary information originates from a mailed paper diary that is mailed before a scheduled interview, with instructions to complete prior to the interview.1 The child and primary caregiver record time spent in activities during a 24-hour period from midnight to midnight. Respondents provide information about their primary activities, and the responses code into activity categories.

An important advantage of using PSID data is the ability to observe young children's time-use in a detailed manner. The PSID advantageously follows individuals through time. Any changes over time represent changes by individuals. While the PSID importantly provides panel information on individuals over time, the sample size is small. Limiting the analysis to children aged seven and eight in 1997 yields a sample size of 97. It is also worth noting that the PSID underreports time spent in activities. The reported minutes in a day often do not total a full day's worth of time, and the magnitudes in the PSID consistently underestimate time spent in all adolescent daily activities when compared to other American time-use data. The non-weighted sample is 45% female and 55% male. The data on home duties are generally consistent with research on children's time use; however, the results cannot necessarily be generalized given the lack of precision in the estimates. This small sample makes it difficult to conduct deep analysis of many factors that could play a role in children's time use. Table A-1 in Appendix A presents demographic and socio-economic characteristics of the children in the sample, including household circumstances and personal attributes.

This study focuses on time use and participation relating to home duties. It aggregates the time spent throughout the day performing any home duty, including activities classified either as household activities or caring for others. Household activities in-

¹ "During the in-house CDS interview or by telephone, the interviewer reviews and edits the diary with the child and primary caregiver or, in the situations where the diary is not completed in advance, the interviewer administers the diary as an interview. On average, the review/interview time was just under 17 minutes per diary, per child" (Institute for Social Research, p. 47).

clude many different activities done at home, such as cleaning, laundering clothing, and preparing food. Grocery shopping is also included in household activities. Many children and adolescents accompany parents in household shopping, which contributes to family well-being. Shopping for non-grocery items with non-household members could be a socializing activity for adolescents, and thus it is not considered a household duty here. Caring for others includes activities relating to childcare. About two-thirds of the time teenagers spend caring for children is in providing direct childcare. Caring for others also includes care given to adults, involvement in medical attention for an adult, and helping with bills.

Time-use Patterns in Home Duties among American Girls and Boys

Girls, ages seven and eight, spend an average of 16 minutes per day in home duties. While the average number of minutes is greater than boys of the same age, the difference is not statistically significant. The average amount of time girls spend in home duties remains relatively stable through adolescence, as does the gender difference between boys and girls, with adolescent girls performing home duties for seven minutes more than their male peers by ages 17 and 18. Table 1 reports the findings. A gender difference is statistically insignificant at the 10% level; however, the stability of the pattern over time lends support to a gender difference in home duties through childhood. While American children are involved in home duties, the data show that the time girls spend in home duties is relatively stable through high school and far lower than the amount of time American women spend in home duties.

Table 1Average Minutes per Day in Household Activities, PSID 1997-2007

Ages	Male	Female	Female - Male
7 & 8	9.8 (1.9)	16.1 (2.5)	6.2 (4.4)
12 & 13	14.3 (2.2)	22.9 (5.3)	8.7 (8.1)
17 & 18	10.4 (2.3)	17.7 (5.1)	7.3 (7.9)

Significant at the 5% level (*).

The data reveal further insights into time-use patterns when considering participation rates. Consider first the proportion of girls involved in home duties during a sample day. At ages seven and eight, girls have a high participation rate of 58%. At this young age, 50% more girls than boys help at home in some way on a given day. The daily participation of girls in home duties drops with age. By ages 17 and 18, teenage girls participate in home duties six percentage points more than teenage boys, and the difference between girls and boys is no longer significant. Table 2 reports these effects.

Now consider only children who participate in home duties. As shown in Table 3, girls and boys show similar patterns in time use in home duties, when restricting attention to only those who spent time in home duties on the sample day. Girls ages seven

Table 2Proportion Participating in Household Activities (i.e. Time-use > 0), PSID 1997-2007

Ages	Male	Female	Female - Male
7 & 8	0.37 (0.05)	0.58 (0.05)	0.21* (0.10)
12 & 13	0.41 (0.05)	0.54 (0.05)	0.13 (0.10)
17 & 18	0.31 (0.05)	0.38 (0.05)	0.06 (0.09)

Significant at the 5% level (*).

Table 3Average Minutes per Day in Household Activities, Conditional on Participation, PSID 1997-2007

Ages	Male	Female	Female - Male
7 & 8	26.6 (2.3)	27.8 (2.7)	1.1 (5.0)
12 & 13	34.9 (2.2)	42.6 (6.6)	7.7 (9.8)
17 & 18	33.2 (3.0)	47.2 (7.7)	14.0 (11.7)

Significant at the 5% level (*).

and eight involved in home duties spend on average 28 minutes, while involved boys spend nearly 27. By ages 12 and 13 a small gender gap appears. By ages 17 and 18 the gap increases but is not significant.

Two important facts emerge from the analysis on averages of girls' time use in home duties. First, these data support findings in other cross-sectional American data showing that adolescent girls work in home duties significantly less than women. American girls gradually increase time spent in home duties. Second, these data are not definitive, but suggestive of gender differences in home duties beginning very early in life. It is clear that young girls participate in domestic activities at higher rates than boys; the time-use differences observed in adulthood are part of a larger pattern of participation differences beginning in childhood. While these findings are interesting in and of themselves, the analysis prompts deeper questions relating to the links between domestic work among young children and personal preferences, family practices, and community attitudes. For example, it may be that girls help more at home than boys of the same ages because they prefer a cleaner home. Or perhaps parents rely more on girls than boys to perform household chores because girls are more compliant than boys to parents' expectations. Another possibility is that gender differences in participation rates follow from gender differences in cultural expectations about working at home. The next section explores interactions between domestic activities, socio-economic background, and family characteristics.

Associations between Children's Domestic Work and Family Characteristics

Children's and teenagers' domestic work patterns vary across different environments. In order to understand early links associated with domestic work patterns, the analysis of this section focuses on children ages seven and eight. It explores four important areas of differentiation found when studying domestic work participation rates of children—race and ethnicity, family income, number of parents in the home, and mother's employment. Cross tabulations reveal differences in participation rates, which are straightforward to understand and explained throughout this section.²

Race and Ethnicity

Studying race and ethnicity stems from a need to understand the domestic work patterns for girls in differing cultural and social settings. Children in different cultures may face different family demands and expectations about helping at home, and race and ethnicity may correlate with cultural practices for children's household responsibilities. The empirical findings show interesting patterns in participation rates. Table 4 reports that 60%

² While regression analysis could be used to analyze factors simultaneously, the small sample size limits the predictive power of such models.

of Black, non-Hispanic girls participate in domestic work on a given day. Eight percent of their male counterparts participate, and this gender difference is statistically significant. While the data show a difference of 36% between Hispanic girls and boys in participation rates, the rates are not significantly different. White, non-Hispanic girls have the lowest average participation rates of any girls. Fif-

Table 4Proportion of Children Participating in Household Activities (i.e. Time-use > 0) by Race and Ethnicity, PSID 1997

Race/Ethnicity	Male	Female	Female - Male
Black, non-Hispanic	0.08 (0.07)	0.60 (0.15)	0.52 (0.17)**
Hispanic	0.37 (0.35)	0.73 (0.23)	0.36 (0.42)
White, non-Hispanic	0.52 (0.11)	0.54 (0.10)	0.02 (0.15)
Other	0.17 (0.19)		

Significant at the 1% level (**).

ty-four percent of White, non-Hispanic girls participate in domestic work on a given day. However, the differences between participation rates for the groups of girls are not significant. White, non-Hispanic girls and boys participate in domestic work at nearly the same rates, and the difference between the groups is not significant. It is important to recognize that any connections seen between participation rates and race, ethnicity, or the associated cultural practices are not necessarily causal. The patterns seen may be due to underlying unobserved characteristics which disproportionately impact a particular race or ethnicity.

Family Income

Several studies find positive associations between income and child well-being across a variety of life activities. For example, children from families with higher income have higher cognitive outcomes, are more likely to attend college, and engage in less risky behavior as teenagers (Brooks-Gunn, 1996). While these do not directly relate to the home duties of children, they suggest that income correlates with life outcomes in many life activities. Low-income families have fewer resources when searching for childcare or outside help with domestic work. Children living in low-income homes may contribute their efforts to provide childcare and housework to help offset the family's lower income.

In order to isolate low-income families, this study categorizes households as falling below or above \$30,000.³ While some of the families indexed as low-income do not

Table 5

Proportion of Children Participating in Household Activities (i.e. Time-use > 0) by Income, PSID 1997

Household income	Male	Female	Female - Male
Less than \$30,000 \$30,000 or more	0.31 (0.10) 0.41 (0.10)	0.79 (0.11) 0.45 (0.09)	0.49 (0.15)** 0.04 (0.13)
Significant at the 1	% level (**).		

formally qualify as living within federal poverty limits, these families nonetheless have limited financial means. Table 5 reports the differences in the participation rates in domestic work when considering household income level.

The participation rate in domestic work for boys in low-income homes is slightly lower than the rate for boys in higher-income homes; however, the difference is not

³ Incomes are reported in 1997 dollars. The federal poverty threshold for a family of four in 1997 is \$16,050.

statistically significant. It is interesting that low-income boys do not participate in home duties at higher rates than high-income boys, given the families' limited resources. On the other hand, low-income girls participate in domestic work at surprisingly high rates. Seventy-nine percent of low-income girls do some domestic work on a given day. This high rate is statistically different from high-income girls, and it is also statistically different from low-income boys. While low-income boys look similar to high-income boys, stark differences exist between low-income and high-income girls. The difference in home expectations for girls in disadvantaged backgrounds implies that a large portion of low-income girls have less time, along with fewer family resources, to devote to academics, extra-curricular pursuits, or other developmentally appropriate activities. If, in fact, home duties crowd out beneficial activities for low-income girls, home duties could be a channel through which disadvantage perpetuates inter-generationally for women.

Number of Parents in the Home

For every family, parental structure impacts the daily schedules and routines of children. Children in single-parent homes may have multiple living environments depending on child custody sharing between parents and childcare arrangements. When single parents teach children daily living and domestic work skills, they often teach unaccompanied by other adults. The ability of a single parent to monitor and instruct children in performing chores and childcare may be more difficult with no partner present. This may result in low participation rates in domestic duties among children in single-parent homes. On the other hand, in families with only one parent, children may

be required to contribute more to domestic duties as a means to offset the burden of home duties placed on the single parent. Parental structure certainly impacts the configurations and patterns of domestic work done by children at home. Table 6 reports differences in daily participation rates in domestic duties seen in single versus two-parent homes.

Table 6 reports that 16% of boys living in single-parent homes participate in domestic duties on a given day, compared to 43% of boys living in two-parent homes. Sixty-eight percent of girls in single-parent homes participate in domestic duties, a rate that is more than four times as high as

Table 6

Proportion of Children Participating in Household Activities (i.e. Time-use > 0) by the Number of Parents in the Home, PSID 1997

Parents in the home	Male	Female	Female - Male
One	0.16 (0.10)	0.68 (0.15)	0.52 (0.18)*
Two	0.43 (0.09)	0.55 (0.09)	0.12 (0.12)
Significant at the 59	% level (*).		

their male counterparts. The percentage of girls in two-parent homes who participate in domestic duties exceeds the percentage of boys in two-parent homes who perform home duties by eight percentage points, a difference that is not statistically significant. It is interesting to see stark differences in the performance of home duties between boys and girls in single-parent homes while considering virtually no difference in the performance of home duties between boys and girls in two-parent homes. At this young age, activities such as market work are not crowding out chores for these boys. All but two single-parent homes have mothers as

the heads of household, implying that this particular sample overwhelmingly compares single mothers to two-parent homes. This could mean that fathers play an important role in modeling, teaching, and motivating boys in domestic duties.

Mother's Employment

The relationship between mother's employment and domestic work among children suggests many areas of association. Prior work on housework finds that maternal employment does not impact the amount of time children ages 10 and 11 spend in domestic work (Cheal, 2003). However, the research does not consider the impact of maternal employment on girls separately from boys. It could be expected that working mothers face obstacles in monitoring and supervising their children in domestic work. Parents who are less available to their children may find it difficult to teach and monitor children in domestic work. On the other hand, working mothers may have high-quality childcare, which emphasizes positive life habits and skills. Labor force attachment among mothers may mark underlying characteristics about families. Women with high labor force attachment often have strong abilities to attain a healthy work and personal life balance. These women are often able to structure domestic work duties for their children in spite of the time demands they face. It may also be the case that well-behaved children may allow their mothers to successfully participate in the labor market at higher levels. Unseen good behavior may correlate with both high participation rates in home duties and high maternal employment hours. Children with unobserved behavioral, emotional, or physical challenges may require more maternal care, and mothers of these children may be less likely to participate in

full-time employment. These same children may have less ability to perform domestic work; challenged children may correlate with both low participation rates in home duties and low maternal employment hours.

Women working full-time show more labor market attachment than women who work part-time or don't work in the labor force. In order to separate highly attached mothers from less attached mothers, families are categorized according to whether the mother works at least 1,300 hours annually. In the United States, working roughly 2,000 annual hours constitutes full-time work. Two households are dropped from this section due to having no mother figure present in the home. It is important to bear in mind that the relationships seen between maternal employment and child domestic work are not necessarily causal and may be due to underlying factors correlated with both maternal employment and child domestic work. Table 7 presents the empirical findings on the proportions of children participating in home duties split by mother's employment level.

Considering boys, 33% with mothers not working full-time participate in domestic work on a given day. Forty-two percent of boys with full-time working mothers participate in domestic work on a given day. The difference between boys is not statistically different. A gap of 27 percentage points ex-

Table 7

Proportion of Children Participating in Household Activities (i.e. Time-use > 0) by Mother's Employment Hours, PSID 1997

	*		
Mother's annual			
employment hours	Male	Female	Female - Male
Less than 1,300	0.33 (0.09)	0.68 (0.11)	0.35 (0.14)*
1,300 or more	0.42 (0.10)	0.41 (0.10)	0.00 (0.15)

Significant at the 5% level (*).

ists in participation rates between girls with full-time working moms and those without, and the difference is significant. In families with mothers less often at work, girls participate in home duties more than twice as much as boys and the difference is significant. This suggests a role for parental modeling in forming children's domestic work patterns. For instance, a two-parent family with a working father and non-working mother may model gendered behaviors in the family division of labor. To the extent that children form habits based on parental modeling, girls in families with strong division of labor between home and market work may follow the example of their mothers by taking on home duties more often than boys in similar families. Parents in a two-parent family with both parents working may model shared family responsibility in work in and out of the home, and their children may follow the example of their parents by sharing home duties more equally between boys and girls.

Conclusion

Girls, and boys to a lesser degree, in developed and developing countries participate in household chores as part of a lifetime pattern of involvement in family and home life. This study describes time-use patterns for girls compared to boys. In the United States, girls show participation rates of nearly 60% by age eight. Girls participate in home duties significantly more often than boys. Further, among girls involved in home duties, the time spent in home duties gradually increases through adolescence. When considering family characteristics, links between family characteristics and domestic work patterns are evident. Girls participate more often in home duties than their male counterparts when coming from low-income homes, single-parent homes or from homes without mothers working full time.

While American girls begin working in housework at an early age, the time they spend performing domestic work is small compared to the amount of time adult women spend in domestic work and compared to their peers in developing countries. Consider, given the relatively small amount of time American adolescent girls spend in home duties, that other research shows adolescent girls in developing countries carrying sizable responsibilities at home. These facts taken together suggest large time-use differences in home duties between adolescent girls in developed and developing countries. While drawing further conclusions is beyond the scope of this research, these facts raise questions about how girls' activities and opportunities change as their countries develop. More research is needed in understanding the impact of infrastructure, education, and other opportunities afforded to girls as their countries develop.

This analysis centered on family characteristics and their links to domestic work. Little information exists about personal characteristics of children. Future research is needed to understand the connections between physical and emotional health of children and patterns in their domestic duties. The cross tabulations presented on the links between family characteristics and domestic work pose puzzles that invite more research. Of interest is the discussion regarding single mothers and two-parent homes. The data does not allow study of children living with single fathers, and future research could study the domestic work patterns for girls and boys living with single dads. Another area for future research is to quantify the impact of family characteristics on girls' and boys' housework. There may be many important determinants contributing to children's housework. This study focuses on links and correlated characteristics, rather than pursuing determining factors; it is difficult to address causality with such a small dataset. However, isolating the roles of race, ethnicity, parental composition, family income, maternal employment, family size, parental education, and other possible influences on girls and boys in their domestic work deserves attention in future work. Understanding these factors with precision and in a simultaneous analysis would further the dialogue about the costs and benefits of girls and boys performing domestic work. More research is needed in order to gain deeper insight into the influence of personal and family characteristics.

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Appendix A: Description of PSID Data

The PSID contains detailed daily information on the time use of children and adolescents. The final sample size reduces to 97 individuals who are observed beginning in 1997 and followed until 2007. Sample weights are applied to reflect a representative sample. The PSID interviews occur on weekdays between March and December, excluding summer months of June, July and August. Characteristics of the respondents in the sample, including household circumstances and personal attributes, are given in Table A-1.

Table A-1Description of PSID Data, Demographic and Socioeconomic Factors

	1997	2002	2007
Sample size	97		
Proportion Female Male White Black Hispanic Other race, ethnicity	0.45 (0.05) 0.55 (0.05) 0.61 (0.05) 0.19 (0.04) 0.12 (0.03) 0.09 (0.03)		
Age	7.10 (0.03)		
Proportion participating in household duties	0.46 (0.05)	0.47 (0.05)	0.34 (0.05)
Average minutes per day in household duties	12.61 (2.18)	18.16 (3.89)	13.68 (3.79)
Number of siblings	1.58 (0.11)	1.59 (0.11)	
Proportion living with Both biological parents Biological mother only Biological father only	0.76 (0.04) 0.21 (0.04) 0.01 (0.01)	0.74 (0.04) 0.23 (0.04) 0.01 (0.01)	0.00 (0.00) 0.00 (0.00) 0.00 (0.00)
Proportion living in Midwest Northeast South West	0.22 (0.04) 0.22 (0.04) 0.24 (0.04) 0.33 (0.05)	0.22 (0.04) 0.20 (0.04) 0.24 (0.04) 0.34 (0.05)	0.22(0.04) 0.20 (0.04) 0.25 (0.04) 0.33 (0.05)

	1997	2002	2007
Total family income*	52,385 (4,722)	79,603 (10,586)	85,608 (10,122)
Proportion who are employed Fathers/step-fathers Mothers/step-mothers	0.81 (0.02) 0.62 (0.05)	0.82 (0.02) 0.79 (0.04)	0.78 (0.02) 0.79 (0.04)
Annual hours worked Fathers/step-fathers Mothers/step-mothers	1,794 (60) 1,001 (94)	1,799 (84) 1,357 (100)	1,764 (71) 1,275 (88)
Weekly hours of household duties Fathers/step-fathers Mothers/step-mothers	7.25 (0.89) 23.58 (1.60)	8.12 (0.91) 23.20 (1.39)	5.11 (0.59) 22.03 (1.57)
Years of education Fathers/step-fathers Mothers/step-mothers	10.39 (0.39) 12.81 (0.36)	10.86 (0.37) 12.88 (0.34)	10.05 (0.39) 12.73 (0.35)
Number of family dinners together weekly	4.80 (0.21)	4.74 (0.20)	3.12 (0.19)

^{*1997} dollars.