

Housework and Mental Health of Adolescent Girls and Boys in India

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Keywords: adolescents; gender; housework; India; mental health; time use

Abstract

Mental health conditions are now among the most common illnesses adolescents face worldwide. Recent research considers youth's daily activities as determinants of their mental health, yet studies tend to focus on screen time (computers, video games, social networking sites), particularly in industrialized countries. There is scant research in the Global South, where youth's daily activities significantly differ from those in industrialized countries. We focus on time spent in housework—a highly gendered activity—among adolescent girls and boys in rural South India and its relationship to anxiety and depressive symptoms. We find that adolescents' anxiety and depressive symptoms are lower than in many other countries and that boys' depressive symptoms are higher than girls,' also contrary to other countries. Time diary data show that girls do five times more daily housework than boys on average. Regression results find that more time spent in housework is associated with increased anxiety and depressive symptoms among girls, and increased anxiety symptoms among boys. These results support the view that housework is undervalued for girls and stigmatized for boys, thereby worsening adolescent mental health.

Acknowledgements

The South India Community Health Study (SICHS) was funded by the *Eunice Kennedy Shriver* National Institute for Child Health and Human Development (01 HD058831-01); the Keyes Fund at the University of Cambridge; and the PSTC at Brown University. This study was supported by PSU's Population Research Institute (NICHD P2CHD041025).

Introduction

Mental health conditions, such as depression and anxiety, have risen among adolescents in recent decades (Collishaw, Maughan, Goodman & Pickles, 2008), and mental illness is now among the most common illnesses adolescents face worldwide (Lule & Rosen, 2009). In addition to causing substantial disability, poor mental health can impinge or delay successful educational attainment, sustained employment, formation of intimate relationships, and physical health, which can further impact individuals' social and economic well-being into adulthood (Patel et al. 2007).

There is mounting evidence that individuals' daily activities have profound influence on mental health. In industrialized countries, many studies focus on the digital revolution and adolescents' use of computers, video games, and smart phones and its negative impact on mental health and well-being (Mathers et al. 2009, Pantic et al. 2012). We focus on time spent in housework—a highly gendered activity globally, but particularly so in India.

There are two competing theories regarding the impact of housework on mental health. One approach is from public health and medical sciences, which views *housework as a physical activity*. Because physical activity generally elevates mood and energizes people, housework should improve mental health. A second approach is rooted in the social sciences, which views *housework as a social activity* that is undervalued, onerous, and unfulfilling in many contexts. Housework tasks, which tend to be the domain of women globally, can also be stigmatizing for men and boys to engage in. According to this view, time spent in housework should worsen mental health, particularly for boys. The research to date has focused on testing these approaches among adults and has produced mixed (Glass & Fujimoto 1994; Hamer et al. 2009).

In this study, we focus on adolescents' time spent in housework, which is likely greater and more gender stratified compared to youth in industrialized countries. We use detailed time diary data from a sample of adolescents ages 12-17 in rural South India. Ours is one of the first population-based studies of mental health and well-being of adolescents in India as well as the first to collect detailed time diary data. We relate time spent in housework for adolescent girls and boys to anxiety and depressive symptoms.

Data and Methods

We use survey data from the South India Community Health Study (SICHS), a data collection effort in 400 villages in rural Vellore District, Tamil Nadu. We chose a random sample of ever-married men aged 25-60 as primary respondents and a small proportion of female-headed households, and interviewed them, their spouses, and children. Our analytic sample includes 1553 adolescents aged 12-17, N=760 boys, N=793 girls.

Dependent variables. Adolescents' *anxiety symptoms* were measured using the Screen for Child Anxiety Related Disorders (SCARED) (Birmaher et al., 1997). The SCARED is a self-rated questionnaire that covers the frequency with which adolescents experience panic/somatic symptoms, generalized anxiety, separation anxiety, social phobia, and school phobia. This index has been found to be reliable across various cultures and countries (Hale, Crocetti, Raajimakers, & Meeus, 2011), and has been validated for use with adolescents in India (Russell et al., 2013a; Russell et al., 2013b; Nair et al., 2013). The SCARED assessment includes statements such as, "When I feel frightened, it is hard to breathe," "I worry about other people liking me," and "I am nervous," and asks adolescents whether this statement is not true or hardly ever true (0), somewhat true or sometimes true (1), or very true or often true (2). Values were summed across statements ($\alpha=0.82$). This measure was coded as a continuous variable (range 0-53).

To measure of adolescents' *depressive symptoms*, we used the Beck Depression Inventory (BDI) (Beck, Steer, & Brown, 1996), one of the most common measures of depressive symptoms worldwide (Wang & Gorenstein, 2013). BDI has also been validated for use among adolescents in India (Russell & Nair, 2013). The BDI is often used to differentiate between individuals who are depressed and those who are not (for a review, see Wang & Gorenstein, 2013); however, it can also be used to indicate a range of depressive symptoms (e.g., Bennett, Borczon, & Lewis, 2019; McMahon et al., 2017). Respondents were given a list of symptoms with four or five response categories of increasing intensity. For example, adolescents were asked to pick the most true statement from a variety of options such as, "(0) I don't feel disappointed in myself, (1a) I am disappointed in myself, (1b) I don't like myself, (2) I am disgusted with myself, (3) I hate myself," or "(0) I don't feel I am worse than anybody else, (1) I am very critical of myself for my weaknesses or mistakes, (2) I blame myself for everything that goes wrong, (3) I feel I have many bad faults." Values of 1a and 1b were rescored as 1. Scores were summed across all measures ($\alpha=0.79$). This measure was coded as a continuous variable (range 0-40).

Independent variable. The key independent variable is a measure of adolescent daily *time spent in housework activities*. The SICHS time diary used an activity-log approach to record information on adolescents' daily activities in the previous 24-hour period, similar to the American Time Use Survey. Respondents listed their activities in chronological order starting from 4:00 am on the day before the interview to 4:00 am on the day of the interview. The respondent described an activity, how long it lasted, and whom they were interacting with during the activity. Each activity was coded according to a list of 64 activities developed through focus groups and pretesting. A number of studies have established the accuracy and reliability of the activity-log time diary method (Bauman et al. 2019, Juster 1985, Robinson and Godbey 1999). In addition, an extensive review found that children are reliable reporters of their own time and that researchers should use child reports whenever possible (Ben-Arieh & Ofir, 2002).

For this study, we created variables for time spent in housework (food preparation, sweeping/cleaning, washing clothes, water/wood collection, vehicle repair, and garden/tree maintenance), caregiving for children or sick or disabled adults, agricultural and non-agricultural work, social events (such as attending a wedding or festival), socializing or chatting, at school, doing homework or studying, attending tuitions (tutoring), extracurricular activities at school, transportation, and watching TV. Additional independent variables included adolescent age in years, gender, if the adolescent had at least one brother, total number of children under age 18 in the household, father's and mother's completed education (standard 8 or higher or not), household's monthly income, Dalit (lower caste) or not, and if the adolescent was interviewed on a weekday.

Analysis Plan. In order to assess the association between time spent in housework and adolescent mental health by gender, we estimated OLS regressions for the samples of girls and boys separately.

Results

Descriptive statistics of the sample of adolescent boys and girls are found in Table 1. Adolescents in rural India have generally low levels of anxiety and depressive symptoms compared to youth in other countries globally (Bennett et al. 2005). Boys also scored higher on depressive symptoms compared to girls, in contrast to other countries (Adewyua et al. 2007; Li, DeGiuseppe, & Froh 2006).

Figure 1 reports adolescents' time spent in various daily activities by type and by gender. These results reveal substantial differences in how girls and boys spend their time. For example, boys spend 21 minutes (SD 65) doing housework on the diary day on average, compared to girls' 100 minutes (SD 128). The gender difference is much greater compared to the U.S., where a recent study found that girls ages 15-17 spent 38 minutes in daily housework chores and boys spent 24 minutes on average (Livingston 2019). In addition to housework, Figure 1 also reveals that girls spend more time studying or watching TV than boys, and boys spend more time in agricultural work, playing sports, sleeping, attending tutoring outside of school, and in transport than girls on average. Overall, these gender differences in time use reflect more limited mobility and time outside of the domestic sphere for girls compared to their male counterparts.

OLS regression results for the two mental health measures are reported in Table 2 for girls and boys separately. A positive coefficient indicates increased reported anxiety and depressive symptoms (poorer mental health). Results reveal that housework time is significantly associated with adolescent mental health. Housework minutes are associated with heightened anxiety symptoms for boys and girls, and the gender difference is marginally significant in a pooled interacted model (stronger association for boys, not shown). A one-standard deviation change in housework minutes increased the anxiety symptoms scale by 1 point for boys and 0.9 points for girls. Housework minutes were associated with heightened depressive symptoms among girls only. A one-standard deviation change in housework minutes increased the depressive symptoms scale by 0.9 points. There was no statistically significant association of housework minutes and depressive symptoms for boys.

Conclusions

Our study contributes several noteworthy findings to the study of housework and mental health. First, our results reveal that housework is a highly gendered activity among adolescents ages 12-17 in rural India. Girls do five more daily minutes of housework as boys on average. Significant time devoted to household chores could impede girls' engagement in other educational or social activities that could foster better mental health outcomes. Second, we found that time spent in housework is positively related to anxiety symptoms for both adolescent boys and girls, and the association is stronger for boys. This suggests that housework could be particularly stigmatizing for boys. Furthermore, although boys have a higher number of depressive symptoms compared to girls, time spent in housework does not explain this association. It could be that specific housework tasks, such as laundry or cleaning, are highly stigmatized for men and boys in India (Luke et al. 2014), and the measure of total housework minutes masks these specific effects. Boys' participation in individual housework tasks was very low, however, and precludes further exploration of this possibility. Finally, a major benefit of using daily time diary data for our study is that we can account for adolescents' time spent in other daily activities, such as educational activities and carework. Future research could consider how adolescents make tradeoffs between these daily activities and their relationship to well-being. Finally, we aimed to test two competing theories of housework—as physical vs. social activity—in its relationship to adolescent mental health. Our findings of a negative association between housework time and mental health symptoms supports the interpretation of housework as a social activity that is likely unfulfilling or stigmatized, thereby worsening adolescent mental health.

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Table 1

Characteristics of Indian adolescents aged 12-17

	Boys	Girls	Sig diff
Anxiety symptoms (mean)	12.7 (SD 7.5)	12.2 (SD 7.0)	
Depressive symptoms (mean)	5.5 (SD 5.6)	4.5 (SD 4.5)	**
Age (mean)	14.4	14.4	
Total children in HH (mean)	2.3	2.4	
Has a brother (%)	62.2	73.3	***
Father s8 or higher (%)	48.7	49.3	
Mother s8 or higher (%)	39.5	45.7	*
HH monthly income (INR) (mean)	10,247.0	9,375.8	
Dalit lower caste (%)	28.8	29.2	
Interviewed on a weekday (%)	78.8	79.1	

Notes: * p< 0.05; ** p< 0.01; *** p< 0.001. US\$ = 65 INR at time of study; s8 = standard 8 (end of primary school). Source: SICHs.

Figure 1

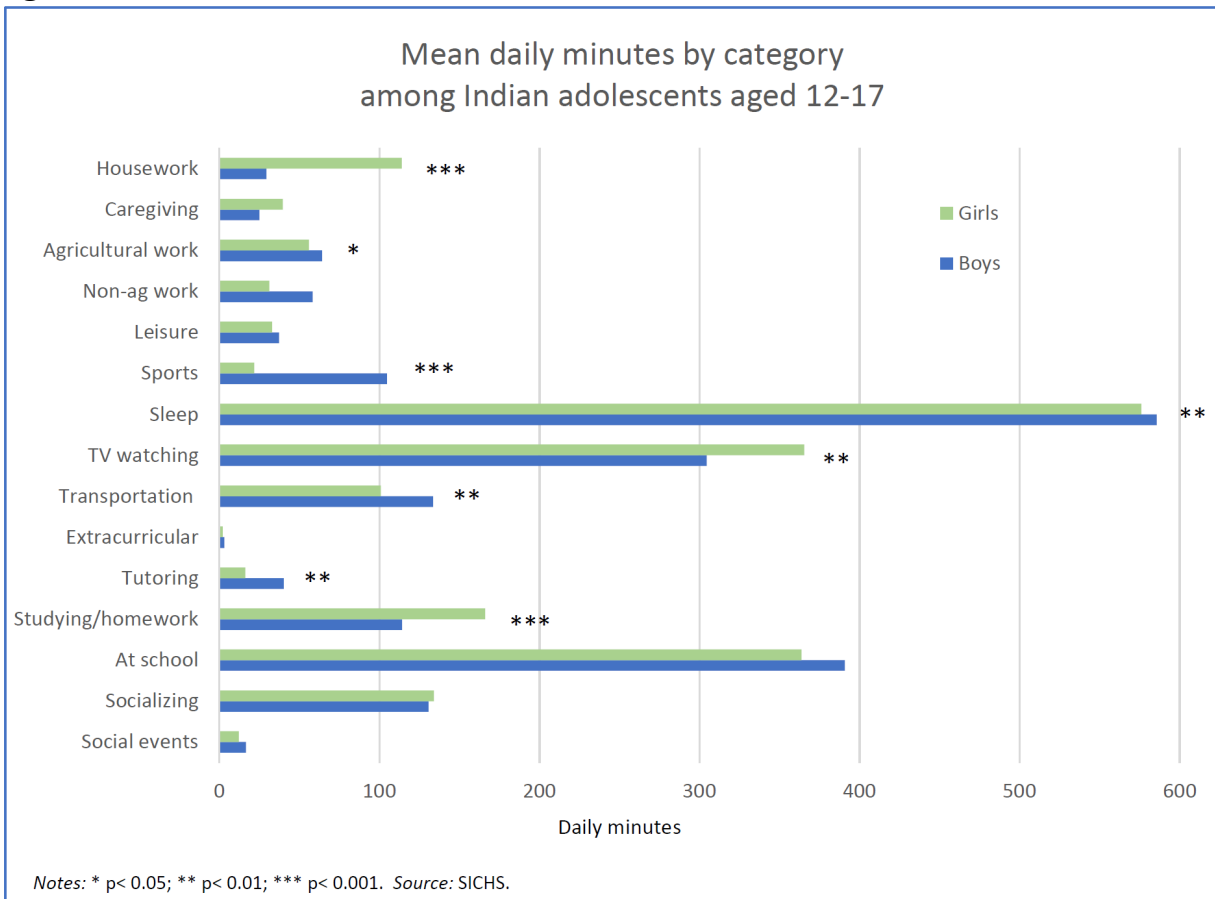


Table 2

OLS regressions predicting anxiety and depressive symptoms of Indian adolescents aged 12-17 by time spent in daily activities

	Anxiety symptoms		Depressive symptoms	
	Boys	Girls	Boys	Girls
	β	β	β	β
Housework	0.015 **	0.007 **	0.001	0.007 **
Carework	-0.007 *	0.002	-0.006 *	0.002
Agricultural work	-0.0001	-0.001	0.001	-0.001
Non-agricultural work	0.001	0.003	0.001	0.003
Social events	-0.003	-0.006 *	0.002	-0.006 *
Socializing	0.001	-0.003 ^	-0.001	-0.003 ^
At school	-0.004	0.001	-0.003 *	0.001
Homework	0.004 ^	0.0004	0.002	0.0004
Tutoring	0.004	0.010	0.013 **	0.010
Extracurricular	-0.007	-0.005	-0.008 **	-0.005
Transportation	0.009 **	0.006 *	0.004 ^	0.006 *
TV viewing	0.002	0.001	0.000	0.001
Sleep	0.001	-0.005 *	0.000	-0.005 *
Sports	-0.002	0.000	-0.001	0.00002
Leisure	0.005	0.007 **	0.002	0.007 **

Notes: ^p <=0.10*; p< 0.05; ** p< 0.01; *** p< 0.001. Controls include for age, total children in the household, if the child has a brother, fathers' education, mothers' education, household monthly income, caste (Dalit), weekday interview.

Source: SICHHS.