The Effect of Social Programs and Exposure to Professionals on the Educational Aspirations of the Poor

Carlos Chiapa* **José Luis Garrido†** **Silvia Prina‡**

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Abstract

Investment in human capital is an important tool for reducing poverty. However, the poor may lack the capacity to aspire, which often results in underinvestment in their children's education. This paper studies the effect of a social program on the educational aspirations of the poor, and explores the role of exposure to educated professionals as a possible channel for increasing aspirations. First, using differences-in-differences, we show that beneficiary parents of the Mexican antipoverty program PROGRESA have higher educational aspirations for their daughters of a third of a school year than do non-beneficiary parents; however there is no significant effect for sons. This effect corresponds to a 20% increase in the proportion of parents who aspire for their daughters to finish college. Then, we exploit the design of the program whose requirements cause its target population to have different levels of mandated exposure to doctors and nurses. Our triple difference estimate shows that, educational aspirations for daughters from high-exposure households (relative to low-exposure households) in treatment villages (relative to control villages) were half a school year higher six months after the start of the program (relative to before its introduction). These results suggest that the change in aspirations is driven by exposure to highly educated professionals. Finally, a year after the start of the program, the aspirations of parents in low-exposure households catch up with the aspirations of parents in high-exposure households, which suggests that aspirations might be affected by a minimum amount of exposure and not by the frequency of exposure.

*Centro de Estudios Económicos, El Colegio de México. Email: cchiapa@colmex.mx
†Centro de Estudios Económicos, El Colegio de México. Email: jgarrido@colmex.mx
‡Department of Economics, Case Western Reserve University. Email: silvia.prina@case.edu

1 Introduction

Many have argued that education specifically and investment in human capital more generally could be the most effective way to reduce poverty (e.g., Becker, 1995). However, poverty may not only create constraints that limit the ability to invest in human capital, but it may also affect people's attitudes and interest in education. If the poor perceive a narrower range of life options or possibilities, they may lack the capacity to aspire, which leads to underinvestment in their children's education (Ray, 2006; Appadurai, 2004).

Research shows that parents' educational aspirations for their children are positively correlated with their children's educational outcomes (Goodman and Gregg, 2010; Gregg and Washbrook, 2009; and Gutman and Akerman, 2008a and 2008b), and that higher aspirations of the poor can lead to an increase in investment in human capital (Macours and Vakis, 2009). Hence, helping the poor to enhance their aspirations may have a positive effect on reducing poverty. In particular, understanding whether aspirations can be changed and identifying the channels through which this change can occur are essential. Unfortunately, little research is available on the evolution of aspirations.

This paper studies the effect of an antipoverty program on poor parents' educational aspirations for their children and explores the role of mandated exposure to educated professionals as a possible way to increase aspirations. In particular, it analyzes whether poor parents' aspirations for the educational attainment of their children can be improved as a result of exposure to doctors and nurses—a group of individuals with much higher educational level and economic status than theirs.

First, using differences-in-differences, we compare the outcomes of households that had been randomly selected to receive the benefits of the Mexican antipoverty program PROGRESA against the outcomes of households that had not been selected to participate in the program. Results suggest that beneficiary parents have higher educational aspirations for their daughters of a third of a school year than do non-beneficiary parents; there is no significant effect for sons. The magnitude of this effect is comparable to that associated with parents having two extra years of schooling. This is quite relevant, given that the average education of adults in our sample is about three years. Furthermore, we consider as an alternative aspiration variable the proportion of parents who declared that they wanted

their daughters to at least finish college in order to see the impact of the program on the proportion of households that aspired for their daughters to complete college. We find a 20% and a 25% increase in the proportion of parents who aspire for their daughters to complete college six months and one year after the start of the program, respectively. These findings add to the extensive literature on the direct and indirect effects of PROGRESA on a large number of outcomes.[1]

Next, we explore one possible channel through which PROGRESA might affect aspirations: exposure to educated professionals. We exploit the design of the program whose requirements cause its target population to have different levels of mandated exposure to doctors and nurses. We divide the sample into two groups: households with children less than five years of age—which have a high level of exposure to health personnel because they must visit the clinic at least four times per year—and households with no children less than five years of age—which have a low level of exposure to health personnel because they must visit the clinic only once or twice per year. To identify the effect of the differential exposure to educated professionals on parents' aspirations, we use a triple differences estimator. That is, we estimate the change in average aspirations before and after the introduction of PROGRESA for households with high exposure to highly educated professionals relative to households with low exposure in treatment villages relative to control villages. Average aspirations for daughters from high-exposure households (relative to low-exposure households) in treatment villages (relative to control villages) are half a school year higher six months after the start of the program (relative to before its introduction). This difference is statistically significant and suggests that the channel through which parental aspirations are changing is the households' exposure to highly educated professionals. Also, being exposed to doctors and nurses leads to the same increase in aspirations for daughters as the one associated with average parental education (three years). Moreover, exposure seems to trigger a 40% increase in the proportion of high exposure parents who aspire for their daughters to finish college.

Interestingly, a year after the start of the program, the aspirations of parents from low-exposure households catch up with those of parents from high-exposure households.

[1] For an excellent review of a number of studies that analyze the impact of PROGRESA, see Parker, Rubalcava, and Teruel (2008).

Recall that the low-exposure households are also required to visit the clinics, but with lesser frequency. Therefore, a good fraction might not have had exposure at the six-month time point. This suggests that aspirations might be affected by a minimum amount of exposure (i.e., a minimum number of meetings) and not by the frequency of exposure.

Some might worry that the interpretation of these results might come solely from an exposure effect. However, we are able to rule out a number of alternative effects. These changes in aspirations are not due to an income effect from the cash transfers received by the households because transfers are higher for low-exposure households than for high-exposure households. This is so because low-exposure households have a greater number of school-age children who are eligible to receive the educational cash transfers of PROGRESA, which constitute the largest component of the program's transfers. Furthermore, parental aspirations about their children's education do not seem to be driven by an age effect. Because parents' educational aspirations for their children are less malleable with the child's increasing age, we might be picking up a greater mutability of aspirations for younger children as opposed to older children. We explore this potential phenomenon by looking at the effect of variability in the child's age on aspirations, and we do not find such an effect. Moreover, the aspirations of non-eligible parents change neither at six months nor at one year after the start of PROGRESA, which indicates that our findings are not caused by any event occurring in the treatment villages that would have affected high-exposure households differently than low-exposure households.

The finding that exposure to health professionals can contribute to changes in aspirations is important for at least three reasons. First, identifying a possible channel through which aspirations of the poor can be modified adds a new tool to the existing options that try to promote increased investments in human capital and productive assets as a means to escape poverty. Second, by design, a number of anti-poverty programs expose their target populations to doctors, nurses, teachers, and many other highly educated professionals. Policy-makers could harness the potential benefit of increased aspirations that are associated with exposure to highly educated professionals by encouraging or requiring that the beneficiaries of anti-poverty programs meet with such professionals a sufficient number of times. Third, the finding suggests that, in highly segregated environments or in contexts in

which there is low social interaction or lack of leadership, promoting exposure to external educated professionals may have important consequences with respect to the aspirations of the population.

While the focus of this paper is on understanding the effect of exposure to professionals on aspirations, this effect might operate through a number of different mechanisms. Exposure to highly educated professionals may cause information flows that allow parents to learn about (previously unknown or previously considered unattainable) opportunities for their children and the investment it takes to reach these opportunities; it may change the consideration sets for people who have limited knowledge or bounded rationality; and/or it may change the socioeconomic environment of the poor.

This study is linked to the theoretical work on why exposure to individuals with a higher educational level and economic status may matter for increasing aspirations and decreasing poverty. In this sense, our paper brings support to the ideas developed in Ray (2006) and previously by anthropologists such as Appadurai (2004), which assign a central role in the formation and evolution of individual aspirations to the socioeconomic environment.[2] This paper also relates to the active discussion on the fact that people's choices are affected by a limited considerations set. This basic idea has been discussed under a range of forms e.g., the literature on bounded rationality, narrowing bracketing, and limited attention (Rabin and Weizsäcker, forthcoming; DellaVigna, 2009; Barberis, Huang, and Thaler, 2006; Gabaix et al., 2006; Kahneman, 2003; Rubinstein, 1998; Frank, 1985 and 1997; and Conlisk, 1996). Likewise, our research is connected to studies on how people's choices are conditioned by their sense of identity (Munshi and Rosenzweig, 2005; and Hoff and Pandey, 2004), as well as to the empirical literature on social interactions and peer effects, which shows that residents of poor neighborhoods achieve lower socioeconomic outcomes and attain lower educational levels than do the residents of more affluent neighborhoods (Gould, Lavy, and Paserman, 2009; Kling, Liebman, and Katz, 2007; Sánchez-Peña, 2007; and Case and Katz, 1991). In fact, our paper suggests that social exposure could be a way to attain better behavioral outcomes in poor areas.

The following section describes PROGRESA and explains how the program promotes

[2] Additional papers are Mookherjee, Napel and Ray (forthcoming), and Genicot and Ray (2009).

the exposure of the beneficiaries to individuals with higher educational levels and economic status as well as how we identify the subgroups subject to a higher level of exposure. Section 3 describes the data. Section 4 outlines the empirical strategy and shows the results. Section 5 performs some robustness checks. Section 6 shows the relationship between educational aspirations and behavioral outcomes. Finally, Section 7 summarizes the results and concludes.

2 PROGRESA and beneficiaries' exposure to health personnel[3]

In 1997, the Mexican government started the *Programa de Educación, Salud y Alimentación* (PROGRESA) in rural Mexico in an effort to break the intergenerational transmission of poverty. The primary objective of the program is to improve the educational, health, and nutritional status of poor families, particularly of children and mothers (Skoufias, 2005). PROGRESA's two main components are health and education. In this paper, we exploit the key features of the former.

The health component of the program requires every female household head to attend her locality's health clinic to get educational talks about vaccinations, nutrition, contraception, and hygiene once a month. Furthermore, every family member must visit his or her locality's health centers for preventive and/or monitoring check-ups for the household to qualify for the nutritional component. The frequency of the visits for each member depends on his or her age. Additionally, in the case of women, the frequency of the visits increases if the women are pregnant or have recently given birth. In particular, pregnant women must have five prenatal care visits starting in the first trimester; lactating women must have two visits a year during which their nutrition is monitored and they receive family-planning information and undergo physical check-ups; children less than two years old must visit the clinic every two months for growth monitoring, immunizations, and well-baby care; children 2-5 years old must visit the clinic every three months for growth monitoring, well-child care, and immunizations; children 5-16 must visit the clinic once every six months; and other ado-

[3] This section draws extensively on Gertler (2000) and Skoufias (2005) who provide a much more detailed description of the program and evaluation data set.

lescents and adults must visit the clinic for annual physical check-ups (Gertler, 2000; and PROGRESA, 1999). Qualified households secure a small monetary (health-conditional) transfer of a fixed amount regardless of household size, and nutritional supplements for children less than two years old and pregnant and lactating women.[4]

Hence, by fulfilling the requirements of the health component, PROGRESA's beneficiaries are exposed to nurses and doctors: i.e., individuals who have attained higher educational levels and higher economic status. In Mexico, in order to become a nurse it is necessary to earn a degree in nursing, which takes 2-5 years, after completing high school; to become a doctor, it is necessary to complete at least six years of a college degree in medicine. Thus, nurses have at least 14 years of education and doctors at least 18. These education levels are much higher than those of the adult population under consideration, which has, on average, three years of education (see Table 1).

The mandated exposure to doctors and nurses is more frequent for households with children less than five years old in particular compared to the frequency for households with older or no children at all. Households with children less than five years old must go to the health clinics at least four times per year. In contrast, households with older children must visit the health clinics twice per year, and households without children only once.

The other main component of the program is the educational component. Beneficiary households with children ages 6-17 who are enrolled in school and attending at least 85% of the school days each month as well as during the academic year receive an education-conditional grant. The grant increases with grade and, for secondary education, is slightly higher for girls than for boys. In addition, households with school-age children receive a grant for school supplies. In general, all transfers are received by the female household head.[5]

On average, beneficiary households receive about 197 pesos monthly (expressed in November 1998 pesos);[6] this represents 19.5% of the mean value of consumption of eligible households in control localities (Skoufias, 2005). The program has survived two changes

[4] Nutritional supplements are also provided for children ages 2-5 if they present stunting symptoms.

[5] Children 13-17 years old in upper-secondary school can receive the transfers directly.

[6] The calculation of this average includes households that did not receive any benefits due to nonadherence to the conditions of the program or delays in the verification of the requirements of the program or in the delivery of the monetary benefits (Skoufias, 2005). The exchange rate at the time was about MX$10.00 = US$1.00.

of administration in Mexico. However, at its inception, beneficiaries were granted the program's benefits for only a three-year period. This was a credible threat because, prior to PROGRESA, social programs in Mexico used to dissolve as soon as there was a change in the political administration.

3 The data

An experimental design was adopted for PROGRESA's evaluation, exploiting its sequential expansion. A subset of 506 eligible localities in Guerrero, Hidalgo, Michoacán, Puebla, Querétaro, San Luis Potosí, and Veracruz was randomly chosen to participate in the evaluation sample: 320 localities were randomly chosen as treatment and started receiving benefits in May 1998; 186 were used as controls and started receiving benefits in December 1999. In the control localities, no household was informed that PROGRESA would have provided benefits at a later date.

In every locality where the program is implemented, households are selected as eligible to receive PROGRESA's benefits based on their poverty level. Data from the baseline survey shows that about 52% of the households in an eligible locality were classified as poor and were offered the opportunity to participate in the program. Only about 10% of these households chose not to enroll in PROGRESA. The data collected comprises repeated observations over eight survey rounds for 24,000 households.

The data used in this paper come from the first four survey rounds. The first two rounds were baseline surveys. That is, they were carried out before the program started giving benefits to the eligible treatment households. The last two rounds were carried out once PROGRESA had started giving benefits to the eligible treatment households but before control households were incorporated into the program. From these data-sets, we use only the observations of those households that were classified as poor at baseline unless otherwise noted.[7]

[7]By July 1999, the program's administration had added new households to the list of beneficiaries because it felt that the original selection method was biased against the elderly poor who no longer lived with their children (Skoufias, 2005). These households started receiving the benefits of PROGRESA about eight months after the original beneficiaries did (Skoufias, Davis, and de la Vega, 2001). For our analysis, we classify these households as non-elegible given their late admission.

The second, third, and fourth survey rounds contain data on aspirations.[8] Specifically, the second baseline survey asks the following two questions to the person who responds to the questionnaire: "Up to what level would you like your daughters to study?" and "Up to what level would you like your sons to study?"[9] In the third and fourth rounds, the structure of the questions changed slightly. In these rounds, the respondent was asked to declare the highest level of education that she would like each of her daughters (sons) to complete.

Responses are coded by education level: elementary school (6 years of schooling), secondary school (9), high school (12), technical degree (12), college (16), and other (up to 21 if Ph.D.). For estimation purposes, we translated each of these levels into years of education as specified in the parentheses next to each level.

Because the second survey does not contain information about aspirations for each daughter (son) but for all daughters (sons) within a household, we conduct the analysis at the household level.[10] Thus, for the third and fourth survey rounds, we compute the maximum years of education that the respondent declared that she would like her daughters (sons) to study if the household has more than one daughter (son) in order to match this information with the responses from the second survey round.[11]

Behrman and Todd (1999) compare the characteristics of treatment and control group households as measured at a point in time prior to having received any program services to determine whether the control and treatment groups truly appear to have been randomly assigned. An examination of the characteristics of the groups in terms of age, education, access to health care, and income at the household level show more rejections of the null than would be expected by chance given standard significance levels. Behrman and Todd believe that these many rejections are due to the fact that the samples are large and tend

[8] The first survey round does not include any question regarding aspirations, but contains important household and individual characteristics at baseline.

[9] The exact questions in Spanish are: *¿Hasta qué nivel le gustaría que estudiaran sus hijas?* and *¿Hasta qué nivel le gustaría que estudiaran sus hijos?*

[10] We also follow this strategy since the data-sets were designed to be matched from one round to the next at either the locality or household levels but not at the individual level. While from round to round the demographic composition of the households does not present important changes, on average, trying to match individuals results in many incongruencies. Parker, Rubalcava, and Teruel (2008) acknowledge that some problems with matching identifiers at the individual level have been reported and refer the reader to Teruel and Rubalcava (2007) for further discussion.

[11] The results reported in this paper do not change if we use the average number of years of education that the respondent declared that she would like her daughters and sons to study.

to reject even for minor differences.

Table 1 shows descriptive statistics by treatment status of some relevant characteristics of the head of the household and the spouse of the head, such as their ages, educational levels, and whether they were literate or spoke an indigenous language at baseline. Table 1 also presents information on household characteristics and demographic structure. Treatment and control households do not seem to differ significantly except for the fact that treatment households appear to have a somewhat younger head and a slightly higher proportion of male children. In the empirical analysis, we control for such differences.

4 Empirical strategy and results

This section is divided into two parts. First, we study the effect of PROGRESA on the educational aspirations of the poor. Then, we investigate exposure to educated professionals as a possible channel through which aspirations might change.

4.1 PROGRESA's effect on aspirations

Having information on the parents' aspirations for their children's education from three periods (one before and two after the implementation of the program) allows us to estimate the impact after the first six months and after one year from the start of PROGRESA. Table 2 summarizes the levels and changes in parental aspirations for daughters and sons dividing the sample into treatment and control groups. We present data for daughters in columns (i)-(iii) and for sons in columns (iv)-(vi). The first two columns for either daughters or sons show the data by treatment category. The third column shows the differences in average parental aspirations between treatment and control households. Rows 1-3 of the table present the average parental aspirations in levels at baseline, six months, and one year after the start of PROGRESA, respectively. Rows 4 and 5 show the changes in average parental aspirations between baseline and six months and between baseline and one year, respectively.

Table 2 shows that, before PROGRESA started, the parental aspirations for both daughters and sons were slightly lower in the treatment group than in the control group; however,

these differences are not statistically significant. After the start of the program, the aspirations of parents in the treatment group increased relatively more than did the aspirations of parents in the control group. The relative increase (the "difference-in-differences" of the changes in parental aspirations) for daughters is 0.38 and 0.36 years of schooling after six months and one year of the start of the program, respectively, and 0.27 and 0.21 years of schooling for sons. Nevertheless, these numbers are statistically significant only for the case of daughters. Hence, PROGRESA seems to increase the educational aspirations parents have for their daughters of about a third of a school year.

As shown in Table 1, both treatment and control groups are quite similar but differ with respect to the age of the head of the household and the proportion of male children. Thus, we incorporate these potential sources of variation in the parental educational aspirations in the estimates of the following reduced form regression:

$$ASP_{ivt} = \alpha + \beta_1 X_{ivt} + \beta_2 \tau_t + \beta_3 T_v + \beta_4 \left(T_v \times \tau_t\right) + \varepsilon_{ivt} \tag{1}$$

where ASP_{ivt} denotes the educational aspirations of the parents of household i in village v at time t; X_{ivt} represents the set of observable characteristics that turned out to be statistically different between control and treatment households;[12] τ_t is a time dummy; T_v is a village dummy that equals one for households in treatment villages; and ε_{ivt} is an idiosyncratic error term. The coefficient of interest is β_4, which estimates the impact of PROGRESA on the educational aspirations of the beneficiaries towards their children.

The estimates of regression (1) are reported in Table 3. We analyze the impact of PROGRESA on the educational aspirations of parents towards their daughters and their sons separately after six months and after one year of being implemented. We estimate this effect with and without controlling for unbalanced household characteristics, clustering the standard errors at the village level.

Columns (1) and (7) in Table 3 present the regression results without controls for daughters six months and one year after the start of the program, respectively. Columns (4) and (10) do the same for sons. These estimates are directly comparable to the simple

[12] The variables that are statistically different are the age of the head of the household and the proportion of male children in the household.

difference-in-differences results shown in Table 2. Columns (3) and (6), and (9) and (12) show the results of the estimation when controls are included six months and one year after the start of PROGRESA, respectively. These results are very similar to those shown earlier in Table 2. PROGRESA is associated with an increase in educational aspirations of a third of a school year. Including the control variables alters neither the magnitude nor the precision of the coefficient of interest in any of the regressions.

Finally, columns (2) and (5), and (8) and (11) include the parents' highest educational level in years. The magnitude of the coefficients indicates that, *ceteris paribus*, PROGRESA's effect on aspirations is comparable to that associated with parents having two extra years of schooling (considering column (2): $\frac{0.382}{0.167} = 2.3$). This is quite relevant, given that the average education of adults in our sample is about three years (as shown in Table 1).

Hence, the evidence tends to show that PROGRESA's beneficiaries have increased their aspirations for their daughters' education whereas there seems to be no strongly significant effect for sons. Although this is an interesting result, it does not enable us to pinpoint the driving force behind the change. In the following subsection, we explore the role of exposure to doctors and nurses as a possible channel for increasing the educational aspirations of the poor.

4.2 The effect of differential exposure to educated professionals on aspirations

Exploiting the design of PROGRESA, we divide the sample into two groups with different levels of mandated exposure to nurses and doctors. We consider high-exposure households to be those with children less than five years of age and that must go to the health clinics at least four times per year. Furthermore, we consider low-exposure households to be those with no children less than five years of age and that are required to attend health clinics only once or twice per year.[13]

To identify the effect of differential exposure to educated professionals on parents' aspi-

[13] We consider only these two categories because we did not find any differential effect of exposure between households with children less than two years of age and households with children 2-5. Results are available upon request.

rations for their children's education, we need to control for any systematic variation to the aspirations of households with high exposure in the treatment villages that are correlated with, but not due to, the introduction of PROGRESA. We do this using a "difference-in-differences-in-differences" (or triple difference) estimator as in Grueber (1994). First, we include a fixed time effect to capture any trend in the aspirations of the households. Second, we control for differences in aspirations in treatment villages with respect to control villages including a treatment village dummy. Third, we control for changes over time in treatment villages interacting a time dummy with a treatment village dummy. Thus, we estimate the change in average aspirations before and after the introduction of PROGRESA of households with different mandated exposure to highly educated professionals in treatment villages relative to control villages. The triple difference estimator captures all variation in aspirations specific to high-exposure households (relative to low-exposure households) in the treatment villages (relative to the control villages) six months and one year after the start of PROGRESA (relative to before the introduction of PROGRESA). As Grueber (1994) points out, the identifying assumption of this triple difference estimator is only that there are no contemporaneous shocks that affect the aspirations of the high-exposure households relative to the low-exposure households in the same village-time at the start of PROGRESA.

By focusing on these two subgroups of households, we are aware that we are compromising the virtues of PROGRESA's experimental design. Thus, it is important to check if the subgroups differ in some basic observable characteristics and, if so, to control for any such difference in order to avoid bias in our estimates.

In Table 4, we show descriptive statistics of households in both treatment and control groups by level of mandated exposure at baseline. As expected, high-exposure households differ from low-exposure households with respect to most of the characteristics considered. This occurs because high-exposure households (i.e., with children less than five) are, on average, "younger" households than low-exposure households (i.e., without children less than five). In fact, in high-exposure households, the household heads and their spouses are, on average, about seven years older than household heads and their spouses in low-exposure households. Also, high-exposure households have fewer adults and more children

than low-exposure households. In addition, the last two columns of Table 4 show the differences-in-differences estimates for each characteristic along with their t-statistics. High- and low-exposure households are similar across treatment and control villages.

Treatment households with high exposure receive, on average, lower cash transfers than do treatment households with low exposure, and this difference is statistically significant.[14] The difference in the amount of cash received is explained by the fact that households with children less than five have younger children. This implies that these households have fewer children of school age who would be eligible to receive the educational cash transfers, which constitute the largest component of PROGRESA's transfers. Despite these differences, the monthly income of high- and low-exposure households is not very different, and the null that the monthly income of high- and low-exposure households is the same cannot be rejected.

Column (iii) of Table 5 reports in rows 4 and 10 the double difference estimators for daughters after six months following the start of the program for high- and low-exposure households, respectively. PROGRESA seems to have had an impact on parental aspirations for high-exposure households but not for low-exposure ones. In fact, panel C, column (iii), row 13, of Table 5 reports, highlighted in yellow, the triple difference estimator six months after the implementation of PROGRESA. Average aspirations of high-exposure households relative to low-exposure households in treatment villages relative to control villages are half a school year higher six months after the start of the program. This difference is statistically significant and suggests that aspirations are not driven by a "PROGRESA effect" but by exposure to highly educated professionals given that low-exposure households receive, on average, more cash from PROGRESA's transfers than do high-exposure households.

One year after the start of the program, however, the double difference estimators for daughters reported in column (iii), rows 5 and 11, for high- and low-exposure households, respectively, show that PROGRESA increased the parental aspirations for both types of households. Indeed, as shown by the triple difference estimator highlighted in yellow in panel C, column (iii), row 14 of Table 5, there is not a statistically significant difference in the average aspirations of high-exposure households relative to low-exposure households in

[14] The cash transfers (educational and health components) presented in Table 4 are calculated considering the household's demographic structure and assuming that each household complies with all of PROGRESA's requirements. Considering this measure, high-exposure households receive, on average, 32 pesos less per month than do low-exposure households.

treatment villages relative to control villages a year after the start of the program.

The data seem to suggest the aspirations of parents from low-exposure households have caught up with those of parents from high-exposure households. As shown in Table 5, column (iii), row 6, the difference in the average change in aspirations of high-exposure households six months and one year after the start of PROGRESA is not statistically different from zero. On the other hand, as can be seen in Table 5, column (iii), row 12, the difference in the average change in aspirations of low-exposure households six months and one year after the start of PROGRESA is negative and statistically different from zero. This suggests that it is the amount of exposure (i.e., the number of meetings) that affects aspirations and not the frequency of these meetings.

Panel C, column (vi) of Table 5 reports, highlighted in yellow, the triple difference estimator for sons after six months and one year of the implementation of PROGRESA. These estimators show the same pattern as do those for daughters. However, they are not statistically significant.

Overall, results seem to suggest that mandated exposure to nurses and doctors has a positive effect on parental aspirations. Furthermore, it seems that it is the amount and not the frequency of exposure that drives the change in parental aspirations. If it were the case that, because they were beneficiaries, parents felt compelled to respond in a certain way, both types of beneficiaries would change their answers after the start of the program. Also, if the force behind the change in aspirations was an income effect due to the transfers, then the households that received higher transfer amounts (those with older children) should be the ones reporting higher aspirations.

Nevertheless, our results could be biased since, as shown in Table 4, high- and low-exposure households differ on a number of important characteristics. In order to control for the differences in observable household characteristics between high- and low-exposure households and thereby reduce possible biases in our estimates, we run the following re-

gression:

$$\begin{aligned} ASP_{ivt} &= \gamma + \delta_1 X_{ivt} + \delta_2 \tau_t + \delta_3 T_v + \delta_4 EX_i + \\ &\quad \delta_5(\tau_t \times T_v) + \delta_6(\tau_t \times EX_i) + \delta_7(T_v \times EX_i) + \\ &\quad \delta_8(\tau_t \times T_v \times EX_i) + \xi_{ivt} \end{aligned} \tag{2}$$

where, ASP_{ivt} denotes the educational aspirations of the parents of household i in village v at time t; X_{ivt} is a vector of observable household characteristics that are significantly different between households with high and low exposure;[15] τ_t is a time dummy; and T_v is a village dummy that equals one for households in treatment villages; EX_i, is a dummy that equals one for households with high exposure to health professionals; and ξ_{ivt} is an idiosyncratic error term.

The similarities between this regression and the results presented in Table 5 are straightforward. The fixed effects control for the time-series changes in aspirations (δ_2), the time-invariant characteristics of the treatment villages (δ_3), and the time-invariant characteristics of the high-exposure households (δ_4). The second-level interactions control for changes over time in the treatment villages (δ_5), changes over time for the high-exposure households (δ_6), and time-invariant characteristics of the high-exposure households in the treatment villages (δ_7).

The third-level interaction, δ_8, is the coefficient of interest. It captures all variation in aspirations specific to the high-exposure households (relative to the low-exposure households) in the treatment villages (relative to the control villages) six months or one year after the introduction of PROGRESA (relative to before the introduction of PROGRESA).

Table 6A shows the regression estimates of regression (2) six months after the start of PROGRESA. The first row of Table 6A presents the estimates of the third-level interaction, δ_8 (i.e., the effect of exposure six months after the start of PROGRESA), whereas the second row presents the estimates of the PROGRESA effect for low-exposure households, δ_5. The coefficients in columns (1) and (6) correspond exactly to the coefficients in Table 5, row

[15] The control variables included are the head's age, his educational level, whether he is literate, whether he is indigenous, the spouse's age, her educational level, whether she is literate, whether she is indigenous, the number of male and female adults, the number of male and female children, the birth spacing between the first and second child, and the household's monthly income.

13 (for the exposure effect) and row 10 (for the PROGRESA effect on low-exposure households), columns (iii) and (vi). Introducing additional household characteristics (columns (3-5) and (8-10), for the case of daughters and sons, respectively) does not have a sizeable impact on either the exposure effect coefficient or the coefficient denoting the PROGRESA effect on low-exposure households. Independent of the specification, differential exposure seems to increase aspirations for daughters by half of a school year in the period six months after the start of the program.

In column 2, we control for the parents' highest educational level in years. The magnitude of the coefficients indicates that, *ceteris paribus*, being exposed to educated professionals leads to the same increase in aspirations for daughters as would be associated with parents who had three extra years of schooling ($\frac{0.523}{0.179} = 2.9$). Thus, exposure to educated professionals seems to have the same effect on aspirations as average parental education (three years). Overall, differential exposure seems to be what matters since there is no statistically significant effect of PROGRESA per se. For the case of sons, differential exposure seems to increase aspirations by a quarter of a school year in the period six months after the start of the program; however, this effect is not statistically significant.

Table 6B shows similar estimates one year after the start of PROGRESA. The coefficients in columns (1) and (5) correspond exactly to the coefficients in Table 5, row 14 (for the exposure effect) and row 11 (for the PROGRESA effect on low-exposure households), columns (iii) and (vi). Introducing additional household characteristics does not have a sizeable impact on the exposure effect. For both daughters and sons, the coefficient measuring the exposure effect is close to zero and not statistically significant. For the case of daughters, the PROGRESA effect on low-exposure households is significant in many specifications, and the magnitude of the coefficients remains stable in all specifications. The fact that we do not see any differential effect due to exposure after one year of the implementation of the program but we do observe an effect of PROGRESA on low-exposure households for the case of daughters might be explained by the possibility that parental aspirations in low-exposure households have caught up with those of the high-exposure households. For the case of sons the PROGRESA effect on low-exposure households is never significant.

Overall, our findings seem to be robust to the inclusion of controls in the regression

specification. Thus, mandated exposure to nurses and doctors appears to have a positive effect on parental aspirations, and the data suggests that it is the amount and not the frequency of exposure that drives the change in parental aspirations.

4.3 Alternative aspiration outcomes

An increase of 0.3 or 0.5 years of schooling may be difficult to interpret. Because the households' responses regarding the parental aspirations for the education of their daughters and sons are coded by education level, instead of converting the data on aspirations into years of schooling, we also created the following variables: "at least secondary education," a dummy that equals one if the respondent reported that she wanted her son or daughter to get at least nine years of schooling; "at least high school," a dummy that equals one if the respondent reported aspiring to at least 12 years of schooling for her children; and "at least college," a dummy that equals one if the respondent aspire to at least 16 years of schooling for her children.[16] Working with these variables allows us to see what proportion of households changed their responses as a result of differential mandated exposure to nurses and doctors. These results, in turn, may be easier to interpret than the changes in aspirations in years of schooling, and may help us understand what is driving the increases of 0.3 or 0.5 years of schooling.

At baseline, more than 91% of the respondents declared that they wanted their children to at least finish their secondary education. Given that the proportion was already high, the introduction of PROGRESA did not have any sizeable effect on modifying it. However, PROGRESA did have an effect on increasing the proportion of households that declared that they wanted their children to at least finish high school and to at least finish college. As shown in Figure 1, at baseline, the proportion of households aspiring for their children to finish at least high school is the same for the treatment and control groups. At six months and one year after the start of the program, this proportion is greater for households in the treatment group. Figure 2 shows a similar pattern for the proportion of households aspiring for their children to complete at least college.

[16] We do not consider the variable "at least primary education" because all but one respondent aspired that their children complete at least six years of schooling. Also, we do not report the results for the variable "at least technical school" because the proportion of households that aspired for their children complete at least a technical degree was low (less than 13%) and was not affected by PROGRESA.

We first consider the effect of PROGRESA on raising the proportion of parents who would like their children to complete at least high school or at least college. Table 7A, row 1, shows that, at baseline, more than 40% of the households want their children to at least complete high school. At six months after its start, the program seems to cause a statistically significant increase of 14% ($14\% = \frac{0.056}{0.411}100$) of the proportion of parents who aspire for their daughters to finish college. There is no statistically significant impact for daughters a year after the start of the program, nor for sons.

Table 7B, row 1, shows that about a quarter of the households wanted their children to at least complete college. The program seems to increase by 20% ($20\% = \frac{0.046}{0.228}100$) and 25% ($25\% = \frac{0.057}{0.228}100$) the proportion of parents who aspire for their daughters to finish college six months and a year after the start of the program, respectively. Although these increments are statistically significant for daughters, there is no significant impact for sons.

We now consider the effect of exposure on raising the proportion of parents who would like their children to complete at least high school or at least college. Table 8A shows the results for the "at least high school" variable. Rows 1 and 7 show the proportion of households that declared that they wanted their children to at least complete high school at baseline. About 39% of high-exposure households and 45% of low-exposure households declared so for the case of daughters (43% and 47% for the case of sons, respectively). The double difference estimators six months after the start of the program shown in rows 4 and 10 for the case high- and low-exposure households, respectively, indicate that, after the start of PROGRESA, an additional 9% of high-exposure households wanted their daughters to finish high school whereas there was no change for low-exposure households. Thus, the triple difference estimator reported in column (iii), row 13, of Table 8A, shows a statistically significant increase of 9%. This effect corresponds to a 24% increase in the proportion of parents who aspire for their daughters to finish high school ($24\% = \frac{0.092}{0.384}100$). For the case of sons, results are similar, and the triple difference estimator shows a statistically significant increase of 6%. This effect corresponds to a 15% increase in the proportion of parents who aspire for their sons to finish high school ($15\% = \frac{0.064}{0.424}100$). After one year of the start of the program, there is, again, a slight catch up from the low-exposure households and a smaller increase of high-exposure households, which cause the triple difference estimator

to be close to zero and not statistically significant, which is consistent with the results previously shown.

Table 8B shows the results for the "at least college" variable. In this case, about 22% of high-exposure households and 26% of low-exposure households declared that they wanted their daughters to finish at least college (25% and 29% for the case of sons, respectively). Six months after the start of the program, we see, again, a differential impact on parental aspirations. As summarized by the triple difference estimator in row 13, 8% more of high-exposure households that received PROGRESA declared that they wanted their daughters to at least finish college. This 8% increase corresponds to a 40% ($40\% = \frac{0.084}{0.209}100$) increase in the proportion of parents who aspire for their daughters to finish college. One year after the start of the program, we see, again, the catch up effect, and, hence, the triple difference estimator decreases in magnitude and becomes not statistically significant.

Thus, it seems to be the case that the increase in parental aspirations of 0.5 schooling years, due to exposure to educated professionals, is the result of a 24% and a 40% increase in the proportion of households that aspire to see their daughters finishing at least high school or college, respectively. The results of the "at least" variables are robust to the inclusion of controls in the regression.[17]

5 Robustness checks

5.1 Age effect

Tables 9A and 9B report regressions similar to those in Tables 6A and 6B. The difference is that, in Tables 9A and 9B, we added a triple interaction that is intended to capture a possible age effect. This allows us to check whether parental aspirations about their children's education depend on their children's age. Hence, in order to control for a possible age component, we interact τ_t, a time dummy, with T_v, the dummy variable that equals one for households in treatment localities, with the age of the youngest child.

We use the age of the youngest child for two reasons. First, we need a measure at the household level because our aspirations measure is built at the household level. Second,

[17] Results are available upon request.

we need to be consistent about the way in which we construct the exposure dummy, which divides households into low- and high-exposure based on the age of the youngest child. Tables 9A and 9B show that the results do not change once we control for a possible age component and that such a component is very close to zero and is not statistically significant. Thus, there does not seem to be an age effect.[18]

5.2 Alternative subsamples

We consider alternative subsamples in order to analyze households with more comparable family structures. In particular, we focus on the following subsamples: households with exactly two children less than 11 years of age, households with exactly three children less than 11 years of age, households with one child of age five and other siblings, households with one child of age six and other siblings. For all these subsamples, we obtained similar results to those reported above for the whole sample. Nevertheless, when reducing the sample size, the variability increases causing the estimates to not always be statistically significant.[19]

5.3 Falsification test

In order to check whether our results are spurious, we perform the same analysis that we have conducted thus far on the non-eligible households.[20] That is, we check whether the parental aspirations of those households that are not eligible to receive the benefits of PROGRESA, and, hence, are not required to send their children to school or regularly present at the health clinics for check-ups, are also changing.

Table 10 summarizes our results. As shown in columns (iii) and (iv), rows 4 and 5, for high-exposure households, and rows 10 and 11, for low-exposure households, after the start of PROGRESA, non-eligible parents did not change the aspirations that they had for their children. Consequently, the triple difference estimators reported in columns (iii) and

[18] We also run a regression with time and households fixed effects considering only the control group (which is not affected by PROGRESA) with aspirations as a dependent variable and age of the youngest child as explanatory variable. The coefficient associated with the age of the youngest is not statistically significant. The results are available upon request.

[19] Regression results for the subsamples are available upon request.

[20] Within every locality where the program is implemented, households are non-eligible to receive PROGRESA's benefits if they are above the poverty level as determined by discriminant analysis on census data.

(iv), rows 13 and 14, are not statistically different from zero, which indicates that neither after six months nor after one year from the start of PROGRESA did non-eligible parents change their aspirations for their children's education. All of these results are robust to the inclusion of controls in a regression framework. Hence, we can be confident that our findings are the result of the introduction of PROGRESA and not of some other circumstance that occurred in the treatment villages that may have been affecting households with children less than five years of age differently relative to households with older children.

6 Educational aspirations and behavioral outcomes

The fourth survey round contains information about the time each household member allocated to 18 different activities during the previous day. Because beneficiary households are influenced not only by their exposure to professionals, but also by PROGRESA's conditionality requirements (i.e., attending school and visiting the health clinic), it is not possible to isolate the impact that aspirations might have on behavioral outcomes such as the time spent by children studying and working.[21] However, we are still able to check whether, for households living in control villages, there is any relationship between parental aspirations toward their children's education and the time their children spend doing school homework and working. We consider households from control villages because their behavior was not influenced by PROGRESA's conditionality requirements, since they were not receiving the benefits of the program.

Tables 11 and 12 show the results of running OLS regressions of the time used by daughters and sons doing homework and working, respectively, on parental aspirations. In particular, Table 11 shows that there is a positive and significant relationship between parents' educational aspirations and the number of minutes children spend doing their homework. In contrast, Table 12 outlines a negative link between parents' educational aspirations and the number of minutes their children spend working at home or outside. These regressions however, do not have a causal interpretation. For example, children that do not work and spend their afternoons doing homeworks may do well in school, and this

[21] For example, an increase in school attendance could be caused by exposure to doctors and nurses as well as by the educational cash transfers received for attending school.

good performance may increase the educational aspirations their parents have for them. Still, the positive (for homework) and negative (for work) signs of the coefficients suggest that an increase in parental educational aspirations might result in a decrease in child labor and an increase in the time children spend studying.

7 Conclusions

Poverty almost certainly affects the way people think and make decisions (Duflo, 2006), which causes the poor to have limited aspirations, and, as a result, to underinvest in the education of their children thereby generating a self-sustaining poverty trap (Ray, 2006; Appadurai, 2004). Understanding if the aspirations of the poor can be increased and, if so, through which channel(s) is an important tool for reducing poverty.

This paper studies the effect of PROGRESA on poor parents' aspirations for the educational attainment of their children and explores the role of mandated exposure to educated professionals as a possible channel for increasing aspirations. First, we compare the outcomes of households that had been randomly selected to receive the benefits of PROGRESA against the outcomes of statistically similar households that had not been selected to participate in the program. We show that beneficiary parents have higher educational aspirations for their daughters by about a third of a school year than do non-beneficiary parents; while we find no significant effect for sons.

Then, we take advantage of the design of PROGRESA, which generates differential exposure to highly educated professionals. In fact, we consider high-exposure households to be those with children less than five years of age and that must present at the health clinics at least four times per year. We consider low-exposure households to be those without children less than five years of age and that are required to attend health clinics only once or twice per year. We estimate the change in average aspirations before and after the introduction of PROGRESA for households with high exposure to highly educated professionals (relative to households with low exposure) in treatment villages (relative to control villages). Average aspirations for daughters of high-exposure households (relative to low-exposure households) in treatment villages (relative to control villages) are half a

school year higher six months after the start of the program (relative to before its introduction). This difference is statistically significant and suggests that the channel through which parental aspirations are changing is the households' exposure to highly educated professionals. The magnitude of the coefficients indicates that, *ceteris paribus*, being exposed to educated professionals leads to the same increase in aspirations for daughters as does an increase of three years in the parents' own education, which is equivalent to the average education of adults in our sample.

Interestingly, a year after the start of the program, the aspirations of parents from low-exposure households catch up to those of high-exposure households. Thus, aspirations seem to be affected by a minimum amount of exposure (i.e., a minimum number of meetings) and not by the frequency of exposure.

We also consider as an alternative aspiration variable the proportion of parents who declare that they want their daughters to finish at least high school or at least college. On the one hand, this variable allows us to see the impact of the program on the proportion of households that aspire for college completion for their daughters. We find a 20% and a 25% increase in the proportion of parents who aspire for their daughters to finish college six months and a year after the start of the program, respectively. On the other hand, this variable allows us to see the impact of differential mandated exposure to doctors and nurses on the proportion of households that aspire for college completion for their daughters. Six months after the start of the program, the increase in parental aspirations of half of a school year is driven by a 24% and a 40% increase in the proportion of households that aspire to see their daughters finishing at least high school or college, respectively.

Our findings are robust to a number of robustness checks. In particular, our results do not seem to be due to an income effect from the cash transfers received by the households, nor by an age effect, nor because of some other circumstance occurring in the treatment villages that may have affected households with high exposure to doctors and nurses differently than households with low exposure.

Identifying a possible channel through which aspirations of the poor can be modified adds a new tool to the existing options that try to promote increased investments in human capital and productive assets as a means by which to escape poverty. Furthermore, policy

makers could take advantage of their target population's exposure to educated professionals, which is generated by the design of the social program, to increase the aspirations of their beneficiaries by encouraging or requiring them to meet with the highly educated professionals a sufficient number of times. Finally, our findings suggest that, in highly segregated environments or in contexts in which there is low social interaction or lack of leaders, promoting exposure to external educated professionals may have important consequences with respect to the aspirations of the population.

Although we can provide evidence as to whether differential exposure affects aspirations, the data do not allow us to analyze whether higher aspirations affect parents' decisions about the education or labor of their children. Nevertheless, parents' educational aspirations seem to be positively related to the number of minutes children spend doing their school homeworks and negatively related to the time children spend working. This suggests that an increase in parents' educational aspirations might result in an increase in human capital investment and a decrease in child labor.

Future research will aim at getting a deeper understanding of the precise mechanism(s) through which aspirations change. The possible mechanisms suggested in the literature for why exposure to highly educated professionals could influence aspirations are many. First, according to Ray (2006), exposure stimulates social interactions, which, in turn, increase individuals' aspiration windows. Second, exposure causes information flows that allow individuals to learn about opportunities that they might engage in or the investment it takes to achieve the associated goals. Third, exposure increases the set of alternatives that people consider because they have bounded rationality.

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Figure 1: Proportion of Households that Aspire for their Children to Complete at Least High School

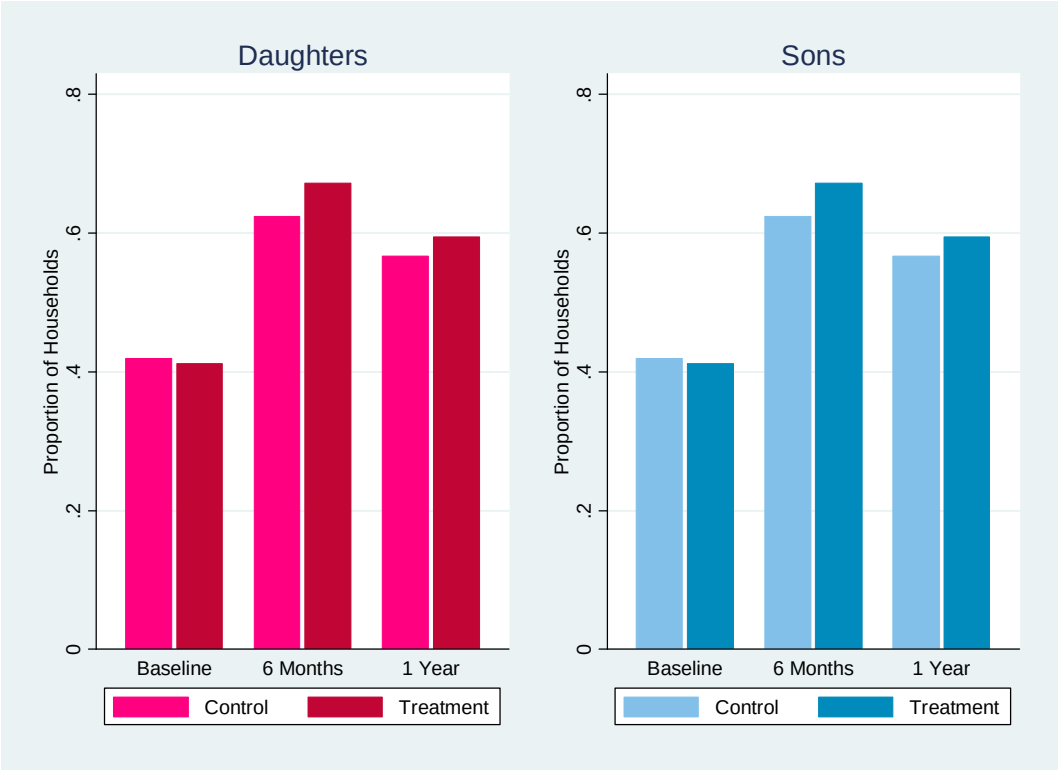

Figure 2: Proportion of Households that Aspire for their Children to Complete at Least College

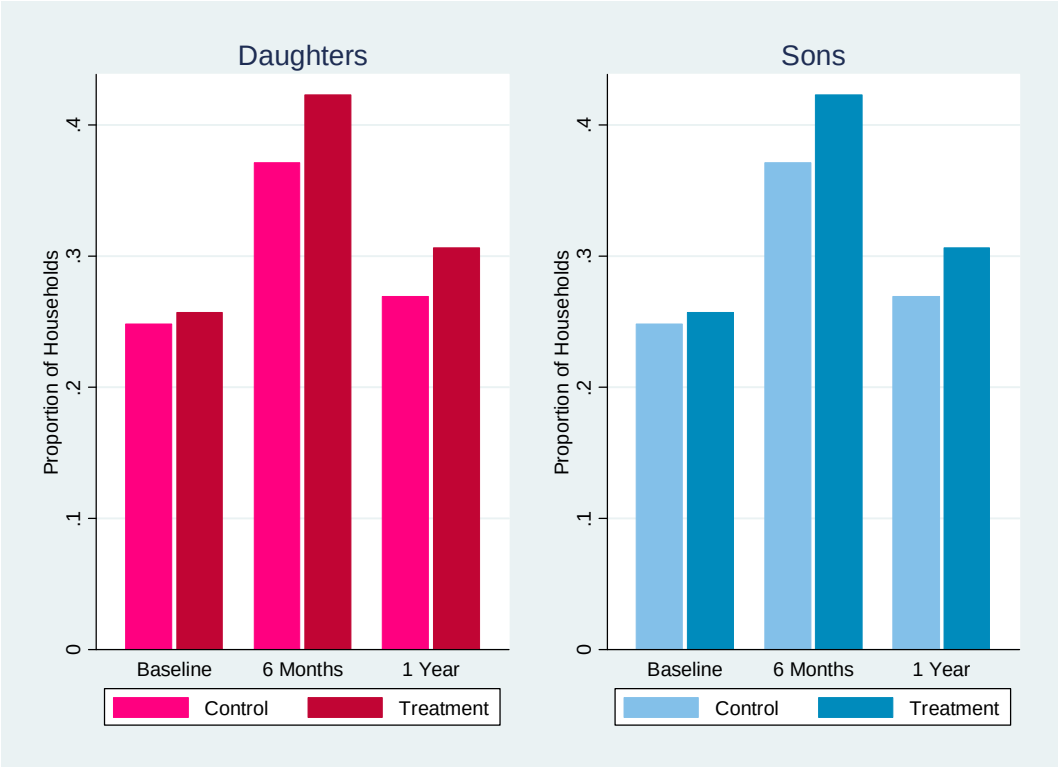

Table 1: Descriptive Statistics by Treatment Status, Fixing Household Structure as of Baseline (1997)

	Obs.	Mean		T-stat
		Treatment	Control	
a) Characteristics of the head of the household				
Age	8,089	41.66	42.39	-2.09**
Educational level in years	8,078	2.88	2.78	0.85
Literate	8,100	0.72	0.71	0.26
Indigenous	8,096	0.41	0.42	-0.07
b) Characteristics of the spouse of the head of the household				
Age	7,361	36.70	36.86	-0.59
Educational level in years	7,348	2.65	2.63	0.16
Literate	7,359	0.63	0.62	0.56
Indigenous	7,353	0.41	0.41	0.00
c) Characteristics of the household				
Mean age of adults	8,104	36.16	36.55	-1.46
Mean educational level of adults	8,103	3.24	3.16	0.66
Proportion of literate adults	8,103	0.71	0.70	0.48
Proportion of indigenous adults	8,095	0.40	0.41	-0.06
Income	8,106	922.90	946.03	-0.56
d) Household structure				
Size	8,106	6.75	6.75	-0.02
Number of adults	8,106	2.68	2.68	0.15
Number of female adults	8,106	1.37	1.38	-0.44
Number of male adults	8,106	1.31	1.29	0.83
Proportion of male adults	8,102	0.48	0.48	0.61
Number of children	8,106	4.06	4.06	-0.10
Number of female children	8,106	1.96	2.01	-1.13
Number of male children	8,106	2.09	2.05	1.25
Proportion of male children	8,069	0.52	0.51	2.20**
Proportion of households with children less than 5 years old	8,106	0.65	0.63	1.18
Proportion of households with children between 2 and 5 years old	8,106	0.34	0.33	0.91
Proportion of households with children less than 2 years old	8,106	0.32	0.31	0.54
Birth spacing between children				
- between 1st and 2nd child	7,326	3.23	3.35	-1.24
- between 2nd and 3rd child	6,423	2.90	2.88	0.32
- between 3rd and 4th child	4,884	2.80	2.81	-0.19
- between 4th and 5th child	3,240	2.64	2.72	-1.29
- between 5th and 6th child	1,953	2.54	2.63	-1.25
- between 6th and 7th child	1,014	2.38	2.43	-0.61
- between 7th and 8th child	467	2.34	2.31	0.30
- between 8th and 9th child	184	2.12	2.19	-0.37
- between 9th and 10th child	94	1.95	1.76	0.89

Note: T-statistics of difference in means computed clustering at the village level. Differences significant at the *10%, **5%, or ***1% level.

Table 2: Average Aspirations per Household Before and After the Start of PROGRESA

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
1. Parental aspirations before the start of PROGRESA	11.324	11.484	-0.160	11.552	11.674	-0.123
	(0.098)	(0.114)	(0.151)	(0.100)	(0.117)	(0.154)
2. Parental aspirations after 6 months of the start of PROGRESA	12.944	12.721	0.223	13.056	12.912	0.145
	(0.083)	(0.105)	(0.133)	(0.080)	(0.099)	(0.128)
3. Parental aspirations after 1 year of the start of PROGRESA	12.509	12.310	0.199	12.497	12.408	0.089
	(0.082)	(0.093)	(0.124)	(0.079)	(0.087)	(0.118)
4. Change in mean aspirations baseline vs. 6 months	1.620	1.237	0.383	1.505	1.237	0.267
	(0.101)	(0.130)	(0.164)	(0.099)	(0.135)	(0.167)
5. Change in mean aspirations baseline vs. 1 year	1.185	0.826	0.360	0.946	0.733	0.212
	(0.100)	(0.125)	(0.160)	(0.095)	(0.123)	(0.156)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 3: Effect of PROGRESA on Aspirations at the Household Level

	Impact after 6 months						Impact after 1 year					
	Daughters			Sons			Daughters			Sons		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PROGRESA effect	0.383**	0.382**	0.386**	0.267	0.275*	0.267	0.360**	0.361**	0.360**	0.212	0.211	0.212
	(0.164)	(0.164)	(0.164)	(0.167)	(0.167)	(0.167)	(0.160)	(0.161)	(0.160)	(0.156)	(0.156)	(0.156)
Parents' highest educational level in years		0.167***			0.162***			0.155***			0.155***	
		(0.014)			(0.014)			(0.015)			(0.014)	
Controls for unbalanced household characteristics[1]	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Probability value for controls[2]	---	---	0.066	---	---	0.023	---	---	0.283	---	---	0.025
Obs.	13,415	13,411	13,349	13,801	13,797	13,738	13,324	13,319	13,268	13,641	13,637	13,583
R^2 (overall)	0.055	0.070	0.055	0.050	0.070	0.050	0.029	0.050	0.030	0.020	0.040	0.021

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Age of the head of the household and proportion of male children are included.

[2]Probability value of joint F test for exclusion of all control variables.

Table 4: Descriptive Statistics by Treatment Status and Household Composition, Fixing Household Structure as of Baseline (1997)

	Treatment				Control					
		Mean				Mean				
	Obs.	LOW exposure HHs	HIGH exposure HHs	T-stat	Obs.	LOW exposure HHs	HIGH exposure HHs	T-stat	DD	T-stat
a) Characteristics of the head of the household										
Age	5,053	46.51	39.07	19.52***	3,036	46.53	40.01	15.03***	0.93	1.61
Educational level in years	5,044	2.36	3.16	-10.29***	3,034	2.36	3.02	-7.09***	-0.13	-1.11
Literate	5,062	0.67	0.74	-5.27***	3,038	0.67	0.73	-3.69***	-0.01	-0.47
Indigenous	5,060	0.39	0.43	-1.72*	3,036	0.41	0.42	-0.46	-0.02	-0.80
b) Characteristics of the spouse of the household head										
Age	4,615	41.70	34.20	21.9***	2,746	41.06	34.64	16.88***	1.10	2.14**
Educational level in years	4,606	2.26	2.84	-6.6***	2,742	2.20	2.85	-6.71***	0.07	0.54
Literate	4,616	0.60	0.65	-2.59***	2,743	0.59	0.63	-2.47**	0.00	0.06
Indigenous	4,611	0.38	0.42	-2.21**	2,742	0.41	0.41	0.01	-0.04	-1.48
c) Characteristics of the household										
Mean age of adults	5,064	39.50	34.37	19.21***	3,040	39.53	34.85	14.3***	0.45	1.06
Mean educational level of adults	5,063	3.02	3.36	-5.3***	3,040	2.92	3.30	-5.07***	0.04	0.36
Proportion of literate adults	5,063	0.68	0.72	-3.47***	3,040	0.67	0.71	-3.14***	0.00	0.07
Proportion of indigenous adults	5,060	0.38	0.42	-2.21**	3,035	0.40	0.41	-0.21	-0.04	-1.31
Monthly income	5,065	932.44	917.81	0.43	3,041	945.76	946.18	-0.01	15.05	0.29
Monthly transfers received in round 2	4,918	340.78	308.70	6.19***	2,917	0.00	0.00	.	32.08	6.19***
Monthly transfers received in round 3	4,667	362.40	330.82	5.5***	2,769	0.00	0.00	.	31.57	5.5***
d) Household structure										
Size	5,065	5.79	7.26	-20.04***	3,041	5.83	7.28	-16.9***	-0.01	-0.12
Number of adults	5,065	2.76	2.64	3.26***	3,041	2.74	2.64	2.12**	0.02	0.32
Number of female adults	5,065	1.40	1.36	1.96*	3,041	1.39	1.38	0.46	0.03	0.92
Number of male adults	5,065	1.35	1.28	2.85***	3,041	1.35	1.26	2.79***	-0.02	-0.45
Proportion of male adults	5,063	0.48	0.48	-0.65	3,039	0.48	0.47	1.33	-0.01	-1.44
Number of children	5,065	3.03	4.61	-27.73***	3,041	3.08	4.63	-26.01***	-0.03	-0.36
Number of female children	5,065	1.41	2.26	-21.33***	3,041	1.51	2.30	-15.62***	-0.05	-0.81
Number of male children	5,065	1.61	2.35	-18.55***	3,041	1.57	2.32	-15.19***	0.01	0.24
Proportion of male children	5,040	0.55	0.51	4.09***	3,029	0.51	0.50	0.77	0.02	1.60
Proportion of HHs with children < 5 yrs old	5,065	0.00	1.00	.	3,041	0.00	1.00	.	0.00	.
Proportion of HHs with children 2-5 yrs old	5,065	0.00	0.52	-54.12***	3,041	0.00	0.51	-44.87***	0.00	-0.14
Proportion of HHs with children < 2 yrs old	5,065	0.00	0.48	-50.81***	3,041	0.00	0.49	-42.47***	0.00	0.14
Birth spacing between children										
- between 1st and 2nd child	4,585	3.37	3.17	2.04**	2,741	3.63	3.20	3.26***	-0.22	-1.33
- between 2nd and 3rd child	4,049	2.89	2.91	-0.31	2,374	2.79	2.93	-1.54	0.12	1.08
- between 3rd and 4th child	3,068	2.63	2.86	-3.62***	1,816	2.63	2.87	-3.27***	0.02	0.18
- between 4th and 5th child	2,014	2.50	2.68	-2.39**	1,226	2.45	2.80	-3.9***	0.16	1.37
- between 5th and 6th child	1,227	2.27	2.61	-3.65***	726	2.37	2.69	-2.96***	-0.01	-0.09
- between 6th and 7th child	638	2.24	2.40	-1.51	376	2.43	2.43	0.04	-0.17	-0.89
- between 7th and 8th child	304	1.97	2.39	-2.28**	163	2.30	2.31	-0.05	-0.41	-1.7*
- between 9th and 10th child	125	2.00	2.13	-0.27	59	2.22	2.18	0.09	-0.17	-0.25

Note: T-statistics of difference in means computed clustering at the village level. Differences significant at the *10%, **5%, or ***1% level.

Table 5: Average Aspirations per Household Before and After the Start of PROGRESA by Type of Household

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
Panel A: HIGH-exposure households						
1. Parental aspirations before the start of PROGRESA	11.143	11.378	-0.235	11.368	11.554	-0.186
	(0.102)	(0.125)	(0.161)	(0.104)	(0.129)	(0.166)
2. Parental aspirations after 6 months	12.923	12.597	0.326	13.010	12.832	0.178
	(0.093)	(0.116)	(0.149)	(0.088)	(0.113)	(0.143)
3. Parental aspirations after 1 year	12.441	12.333	0.108	12.414	12.400	0.014
	(0.086)	(0.106)	(0.136)	(0.083)	(0.101)	(0.130)
4. Change in mean aspirations baseline vs. 6 months	1.780	1.219	0.561	1.643	1.278	0.365
	(0.110)	(0.147)	(0.184)	(0.110)	(0.149)	(0.185)
5. Change in mean aspirations baseline vs. 1 year	1.298	0.955	0.344	1.046	0.845	0.200
	(0.107)	(0.134)	(0.172)	(0.100)	(0.135)	(0.167)
6. Line 4 - Line 5	0.481	0.264	0.217	0.597	0.433	0.164
	(0.101)	(0.138)	(0.170)	(0.097)	(0.134)	(0.165)
Panel B: LOW-exposure households						
7. Parental aspirations before the start of PROGRESA	11.663	11.670	-0.007	11.896	11.886	0.011
	(0.115)	(0.127)	(0.171)	(0.118)	(0.129)	(0.175)
8. Parental aspirations after 6 months	12.988	12.959	0.029	13.144	13.051	0.092
	(0.104)	(0.127)	(0.164)	(0.102)	(0.116)	(0.155)
9. Parental aspirations after 1 year	12.653	12.264	0.389	12.662	12.423	0.240
	(0.105)	(0.130)	(0.167)	(0.104)	(0.119)	(0.158)
10. Change in mean aspirations baseline vs. 6 months	1.325	1.290	0.036	1.247	1.166	0.082
	(0.133)	(0.165)	(0.212)	(0.128)	(0.167)	(0.211)
11. Change in mean aspirations baseline vs. 1 year	0.990	0.594	0.396	0.766	0.537	0.229
	(0.133)	(0.170)	(0.215)	(0.134)	(0.166)	(0.213)
12. Line 10 - Line 11	0.336	0.696	-0.360	0.481	0.629	-0.147
	(0.115)	(0.160)	(0.196)	(0.124)	(0.151)	(0.195)
Panel C: Triple difference estimates						
13. Difference between HIGH- and LOW-exposure HHs, baseline vs. 6 months	0.454	-0.071	0.525	0.395	0.112	0.283
	(0.135)	(0.173)	(0.219)	(0.132)	(0.165)	(0.211)
14. Difference between HIGH- and LOW-exposure HHs, children less than 5, baseline vs. 1 year	0.309	0.361	-0.052	0.280	0.308	-0.029
	(0.128)	(0.165)	(0.209)	(0.128)	(0.167)	(0.210)
15. Line 13 - Line 14	0.146	-0.432	0.577	0.116	-0.196	0.312
	(0.131)	(0.185)	(0.226)	(0.134)	(0.173)	(0.218)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 6A: Effect of Social Interactions on Average Aspirations at the Household Level After the Start of PROGRESA

	Impact after 6 months									
	Daughters					Sons				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exposure effect	0.525**	0.523**	0.542**	0.496**	0.555**	0.283	0.270	0.256	0.329	0.295
(Time x Treatment x Exposure)	(0.219)	(0.219)	(0.233)	(0.23)	(0.240)	(0.211)	(0.211)	(0.229)	(0.221)	(0.234)
PROGRESA effect	0.036	0.035	0.032	0.029	0.010	0.082	0.099	0.113	-0.008	0.064
	(0.211)	(0.212)	(0.227)	(0.221)	(0.233)	(0.211)	(0.210)	(0.222)	(0.215)	(0.227)
Parents' highest educational level in years		0.179***					0.175***			
		(0.014)					(0.014)			
Head's age			0.013***		0.015***			0.013***		0.014***
			(0.005)		(0.005)			(0.005)		(0.005)
Head's educational level in years			0.102***		0.106***			0.106***		0.108***
			(0.017)		(0.017)			(0.017)		(0.017)
Head is literate			0.195**		0.177*			0.196**		0.187**
			(0.088)		(0.092)			(0.089)		(0.095)
Head is indigenous			-0.151		-0.164			-0.141		-0.142
			(0.148)		(0.156)			(0.150)		(0.156)
Spouse's age			0.011**		0.014**			0.010*		0.009
			(0.005)		(0.006)			(0.006)		(0.006)
Spouse's educational level in years			0.103***		0.099***			0.079***		0.073***
			(0.018)		(0.018)			(0.018)		(0.019)
Spouse is literate			0.263***		0.290***			0.342***		0.377***
			(0.089)		(0.091)			(0.092)		(0.096)
Spouse is indigenous			-0.224		-0.228			-0.258*		-0.275*
			(0.150)		(0.158)			(0.157)		(0.160)
Number of male adults				-0.097**	-0.067				-0.087**	-0.035
				(0.046)	(0.051)				(0.042)	(0.047)
Number of female adults				0.079*	0.058				0.096**	0.103**
				(0.043)	(0.048)				(0.040)	(0.043)
Number of male children				-0.020	0.000				-0.005	0.007
				(0.025)	(0.026)				(0.026)	(0.026)
Number of female children				-0.054**	-0.042*				-0.051**	-0.045*
				(0.025)	(0.025)				(0.026)	(0.026)
Birth spacing between 1st and 2nd child				-0.026**	-0.007				-0.023**	-0.006
				(0.011)	(0.012)				(0.009)	(0.011)
Monthly income				0.000	0.000				0.000	0.000***
				(0.000)	(0.000)				(0.000)	(0.000)
Probability value for controls[1]	---	---	0.000	0.016	0.000	---	---	0.000	0.006	0.000
Obs.	13,415	13,411	12,110	12,277	11,348	13,801	13,797	12,451	12,625	11,667
R^2 (overall)	0.060	0.080	0.090	0.060	0.100	0.050	0.070	0.090	0.060	0.090

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.

Table 6B: Effect of Social Interactions on Average Aspirations at the Household Level After the Start of PROGRESA

	Impact after 1 year									
	Daughters					Sons				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exposure effect	-0.052	-0.068	0.012	-0.022	0.047	-0.029	-0.039	0.031	-0.048	0.009
(Time x Treatment x Exposure)	(0.209)	(0.210)	(0.218)	(0.216)	(0.225)	(0.210)	(0.210)	(0.217)	(0.217)	(0.227)
PROGRESA effect	0.396*	0.407*	0.333	0.372*	0.324	0.229	0.235	0.159	0.173	0.138
	(0.215)	(0.217)	(0.224)	(0.225)	(0.233)	(0.213)	(0.213)	(0.219)	(0.216)	(0.225)
Parents' highest educational level in years		0.167***					0.168***			
		(0.015)					(0.015)			
Head's age			0.008**		0.010**			0.006		0.010**
			(0.004)		(0.005)			(0.004)		(0.005)
Head's educational level in years			0.087***		0.087***			0.091***		0.092***
			(0.016)		(0.017)			(0.017)		(0.018)
Head is literate			0.181**		0.187*			0.192**		0.158*
			(0.092)		(0.096)			(0.092)		(0.097)
Head is indigenous			-0.300**		-0.349**			-0.343**		-0.358**
			(0.13)		(0.138)			(0.137)		(0.145)
Spouse's age			0.011**		0.011*			0.011**		0.010
			(0.005)		(0.006)			(0.005)		(0.006)
Spouse's educational level in years			0.094***		0.085***			0.079***		0.077***
			(0.018)		(0.019)			(0.018)		(0.019)
Spouse is literate			0.275***		0.314***			0.258***		0.289***
			(0.089)		(0.094)			(0.086)		(0.091)
Spouse is indigenous			-0.186		-0.147			-0.187		-0.170
			(0.131)		(0.138)			(0.139)		(0.146)
Number of male adults				-0.147***	-0.127***				-0.131***	-0.127***
				(0.042)	(0.047)				(0.042)	(0.048)
Number of female adults				0.046	0.063				0.032	0.067
				(0.041)	(0.048)				(0.042)	(0.046)
Number of male children				-0.025	-0.004				-0.010	0.008
				(0.023)	(0.024)				(0.023)	(0.023)
Number of female children				-0.041*	-0.034				-0.044*	-0.032
				(0.023)	(0.024)				(0.024)	(0.024)
Birth spacing between 1st and 2nd child				-0.017*	0.006				-0.026***	-0.006
				(0.010)	(0.011)				(0.010)	(0.011)
Monthly income				0.000	0.000				0.000*	0.000
				(0.000)	(0.000)				(0.000)	(0.000)
Probability value for controls[1]	---	---	0.000	0.004	0.000	---	---	0.000	0.001	0.000
Obs.	13,324	13,319	12,072	12,160	11,275	13,641	13,637	12,337	12,423	11,512
R^2 (overall)	0.030	0.050	0.070	0.040	0.070	0.020	0.040	0.060	0.030	0.060

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.

Table 7A: Average Aspirations per Household Before and After the Start of PROGRESA (at least HIGH SCHOOL)

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
1. Parental aspirations before the start of PROGRESA	0.411 (0.012)	0.419 (0.015)	-0.008 (0.020)	0.446 (0.013)	0.447 (0.016)	-0.001 (0.020)
2. Parental aspirations after 6 months of the start of PROGRESA	0.672 (0.012)	0.624 (0.015)	0.048 (0.019)	0.691 (0.012)	0.651 (0.013)	0.040 (0.018)
3. Parental aspirations after 1 year of the start of PROGRESA	0.594 (0.011)	0.566 (0.013)	0.028 (0.017)	0.594 (0.011)	0.596 (0.014)	-0.002 (0.018)
4. Change in mean aspirations baseline vs. 6 months	0.261 (0.015)	0.205 (0.020)	0.056 (0.025)	0.245 (0.015)	0.205 (0.019)	0.041 (0.024)
5. Change in mean aspirations baseline vs. 1 year	0.183 (0.015)	0.147 (0.018)	0.035 (0.023)	0.148 (0.014)	0.150 (0.020)	-0.002 (0.025)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 7B: Average Aspirations per Household Before and After the Start of PROGRESA (at least COLLEGE)

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
1. Parental aspirations before the start of PROGRESA	0.228 (0.011)	0.248 (0.015)	-0.020 (0.018)	0.257 (0.012)	0.273 (0.015)	-0.016 (0.019)
2. Parental aspirations after 6 months of the start of PROGRESA	0.397 (0.013)	0.371 (0.016)	0.026 (0.021)	0.423 (0.012)	0.406 (0.016)	0.017 (0.020)
3. Parental aspirations after 1 year of the start of PROGRESA	0.306 (0.013)	0.269 (0.016)	0.037 (0.020)	0.306 (0.012)	0.284 (0.016)	0.022 (0.020)
4. Change in mean aspirations baseline vs. 6 months	0.169 (0.015)	0.123 (0.019)	0.046 (0.024)	0.166 (0.014)	0.133 (0.02)	0.033 (0.024)
5. Change in mean aspirations baseline vs. 1 year	0.078 (0.016)	0.021 (0.019)	0.057 (0.024)	0.049 (0.015)	0.011 (0.020)	0.038 (0.025)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 8A: Average Aspirations per Household Before and After the Start of PROGRESA by Type of Household (at least HIGH SCHOOL)

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
Panel A: HIGH-exposure households						
1. Parental aspirations before the start of PROGRESA	0.384	0.408	-0.024	0.424	0.433	-0.009
	(0.013)	(0.017)	(0.021)	(0.014)	(0.017)	(0.022)
2. Parental aspirations after 6 months	0.673	0.610	0.063	0.689	0.636	0.054
	(0.013)	(0.017)	(0.022)	(0.013)	(0.015)	(0.020)
3. Parental aspirations after 1 year	0.589	0.568	0.020	0.589	0.598	-0.009
	(0.012)	(0.015)	(0.019)	(0.012)	(0.016)	(0.020)
4. Change in mean aspirations baseline vs. 6 months	0.288	0.202	0.087	0.265	0.203	0.063
	(0.016)	(0.023)	(0.028)	(0.017)	(0.021)	(0.027)
5. Change in mean aspirations baseline vs. 1 year	0.204	0.160	0.044	0.165	0.165	0.000
	(0.016)	(0.02)	(0.025)	(0.015)	(0.022)	(0.027)
6. Line 4 - Line 5	0.084	0.041	0.043	0.100	0.038	0.063
	(0.016)	(0.021)	(0.026)	(0.017)	(0.019)	(0.026)
Panel B: LOW-exposure households						
7. Parental aspirations before the start of PROGRESA	0.463	0.438	0.025	0.487	0.470	0.017
	(0.015)	(0.018)	(0.024)	(0.016)	(0.019)	(0.025)
8. Parental aspirations after 6 months	0.671	0.652	0.019	0.695	0.679	0.016
	(0.016)	(0.018)	(0.024)	(0.016)	(0.018)	(0.024)
9. Parental aspirations after 1 year	0.605	0.562	0.043	0.603	0.593	0.011
	(0.017)	(0.021)	(0.027)	(0.016)	(0.021)	(0.026)
10. Change in mean aspirations baseline vs. 6 months	0.208	0.214	-0.005	0.208	0.209	-0.001
	(0.022)	(0.025)	(0.033)	(0.021)	(0.026)	(0.033)
11. Change in mean aspirations baseline vs. 1 year	0.143	0.124	0.019	0.116	0.122	-0.006
	(0.023)	(0.027)	(0.035)	(0.021)	(0.029)	(0.036)
12. Line 10 - Line 11	0.065	0.090	-0.024	0.092	0.086	0.005
	(0.023)	(0.026)	(0.035)	(0.022)	(0.026)	(0.033)
Panel C: Triple difference estimates						
13. Difference between HIGH- and LOW-exposure HHs, baseline vs. 6 months	0.080	-0.012	0.092	0.058	-0.006	0.064
	(0.022)	(0.027)	(0.035)	(0.023)	(0.027)	(0.035)
14. Difference between HIGH- and LOW-exposure HHs, baseline vs. 1 year	0.061	0.036	0.025	0.049	0.043	0.006
	(0.023)	(0.028)	(0.037)	(0.022)	(0.029)	(0.037)
15. Line 13 - Line 14	0.019	-0.048	0.067	0.009	-0.049	0.058
	(0.025)	(0.031)	(0.040)	(0.023)	(0.029)	(0.037)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 8B: Average Aspirations per Household Before and After the Start of PROGRESA by Type of Household (at least COLLEGE)

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
Panel A: HIGH-exposure households						
1. Parental aspirations before the start of PROGRESA	0.209	0.242	-0.033	0.237	0.266	-0.030
	(0.012)	(0.016)	(0.020)	(0.012)	(0.017)	(0.021)
2. Parental aspirations after 6 months	0.394	0.352	0.042	0.415	0.392	0.023
	(0.014)	(0.018)	(0.023)	(0.013)	(0.019)	(0.023)
3. Parental aspirations after 1 year	0.301	0.272	0.029	0.295	0.283	0.013
	(0.014)	(0.018)	(0.023)	(0.012)	(0.018)	(0.022)
4. Change in mean aspirations baseline vs. 6 months	0.184	0.110	0.075	0.179	0.126	0.053
	(0.017)	(0.021)	(0.027)	(0.016)	(0.022)	(0.027)
5. Change in mean aspirations baseline vs. 1 year	0.091	0.030	0.061	0.058	0.016	0.042
	(0.017)	(0.021)	(0.027)	(0.016)	(0.023)	(0.028)
6. Line 4 - Line 5	0.093	0.080	0.014	0.120	0.110	0.011
	(0.017)	(0.024)	(0.029)	(0.016)	(0.026)	(0.030)
Panel B: LOW-exposure households						
7. Parental aspirations before the start of PROGRESA	0.263	0.259	0.004	0.295	0.285	0.010
	(0.015)	(0.018)	(0.023)	(0.016)	(0.018)	(0.024)
8. Parental aspirations after 6 months	0.402	0.408	-0.006	0.437	0.430	0.007
	(0.016)	(0.021)	(0.027)	(0.016)	(0.018)	(0.024)
9. Parental aspirations after 1 year	0.318	0.264	0.055	0.328	0.287	0.040
	(0.018)	(0.02)	(0.027)	(0.018)	(0.020)	(0.026)
10. Change in mean aspirations baseline vs. 6 months	0.139	0.149	-0.009	0.142	0.145	-0.003
	(0.02)	(0.027)	(0.033)	(0.020)	(0.026)	(0.033)
11. Change in mean aspirations baseline vs. 1 year	0.056	0.005	0.051	0.033	0.002	0.031
	(0.021)	(0.026)	(0.033)	(0.022)	(0.025)	(0.033)
12. Line 10 - Line 11	0.084	0.144	-0.060	0.109	0.143	-0.034
	(0.022)	(0.025)	(0.033)	(0.022)	(0.025)	(0.033)
Panel C: Triple difference estimates						
13. Difference between HIGH- and LOW-exposure HHs, baseline vs. 6 months	0.045	-0.039	0.084	0.037	-0.019	0.056
	(0.021)	(0.029)	(0.035)	(0.021)	(0.028)	(0.035)
14. Difference between HIGH- and LOW-exposure HHs, baseline vs. 1 year	0.036	0.025	0.010	0.025	0.014	0.011
	(0.021)	(0.028)	(0.035)	(0.021)	(0.026)	(0.033)
15. Line 13 - Line 14	0.009	-0.064	0.074	0.011	-0.033	0.045
	(0.024)	(0.03)	(0.038)	(0.022)	(0.030)	(0.037)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 9A: Effect of Social Interactions on Average Aspirations at the Household Level After the Start of PROGRESA

	Impact after 6 months									
	Daughters					Sons				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exposure effect	0.525**	0.504**	0.562**	0.477*	0.582**	0.283	0.261	0.272	0.245	0.253
(Time x Treatment x Exposure)	(0.219)	(0.233)	(0.247)	(0.248)	(0.256)	(0.211)	(0.232)	(0.250)	(0.246)	(0.256)
Age effect		-0.005	0.005	-0.004	0.005		-0.005	0.004	-0.017	-0.008
(Time x Treatment x Age youngest child)		(0.021)	(0.022)	(0.022)	(0.023)		(0.019)	(0.020)	(0.020)	(0.021)
PROGRESA effect	0.036	0.067	0.002	0.055	-0.027	0.082	0.113	0.091	0.109	0.121
	(0.211)	(0.243)	(0.260)	(0.260)	(0.272)	(0.211)	(0.254)	(0.267)	(0.262)	(0.274)
Head's age			0.013***		0.015***			0.013***		0.014***
			(0.005)		(0.005)			(0.005)		(0.005)
Head's educational level in years			0.102***		0.106***			0.106***		0.108***
			(0.017)		(0.017)			(0.017)		(0.017)
Head is literate			0.200**		0.177*			0.201**		0.187**
			(0.088)		(0.092)			(0.089)		(0.095)
Head is indigenous			-0.151		-0.165			-0.141		-0.142
			(0.147)		(0.156)			(0.15)		(0.156)
Spouse's age			0.011**		0.014**			0.010*		0.009
			(0.005)		(0.006)			(0.006)		(0.006)
Spouse's educational level in years			0.102***		0.099***			0.079***		0.073***
			(0.018)		(0.018)			(0.018)		(0.019)
Spouse is literate			0.262***		0.289***			0.341***		0.377***
			(0.089)		(0.091)			(0.092)		(0.096)
Spouse is indigenous			-0.224		-0.227			-0.258*		-0.275*
			(0.150)		(0.158)			(0.157)		(0.161)
Number of male adults				-0.097**	-0.067				-0.085**	-0.035
				(0.046)	(0.051)				(0.043)	(0.048)
Number of female adults				0.079*	0.059				0.097**	0.103**
				(0.043)	(0.048)				(0.040)	(0.043)
Number of male children				-0.021	0.001				-0.008	0.006
				(0.025)	(0.026)				(0.026)	(0.027)
Number of female children				-0.055**	-0.041				-0.054**	-0.046*
				(0.026)	(0.026)				(0.026)	(0.026)
Birth spacing between 1st and 2nd child				-0.026**	-0.006				-0.023**	-0.006
				(0.011)	(0.012)				(0.009)	(0.011)
Monthly income				0.000	0.000				0.000	0.000***
				(0.000)	(0.000)				(0.000)	(0.000)
Probability value for controls[1]	---	---	0.000	0.028	0.000	---	---	0.000	0.010	0.000
Obs.	13,415	13,382	12,090	12,275	11,348	13,801	13,768	12,430	12,623	11,667
R^2 (overall)	0.060	0.060	0.090	0.060	0.100	0.050	0.050	0.090	0.060	0.090

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.

Table 9B: Effect of Social Interactions on Average Aspirations at te Household Level After the Start of PROGRESA

	Impact after 1 year									
	Daughters					Sons				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Exposure effect	-0.052	-0.067	-0.012	-0.082	0.005	-0.029	-0.041	-0.006	-0.127	-0.044
(Time x Treatment x Exposure)	(0.209)	(0.217)	(0.224)	(0.228)	(0.235)	(0.210)	(0.221)	(0.228)	(0.230)	(0.239)
Age effect		-0.005	-0.004	-0.015	-0.010		-0.004	-0.007	-0.019	-0.013
(Time x Treatment x Age youngest child)		(0.016)	(0.017)	(0.018)	(0.019)		(0.015)	(0.015)	(0.017)	(0.017)
PROGRESA effect	0.396*	0.421*	0.365	0.461*	0.386	0.229	0.249	0.209	0.289	0.215
	(0.215)	(0.234)	(0.244)	(0.250)	(0.260)	(0.213)	(0.238)	(0.243)	(0.244)	(0.253)
Head's age			0.008**		0.010**			0.006		0.010**
			(0.004)		(0.005)			(0.004)		(0.005)
Head's educational level in years			0.087***		0.087***			0.091***		0.092***
			(0.016)		(0.017)			(0.018)		(0.018)
Head is literate			0.186**		0.188**			0.198**		0.159*
			(0.092)		(0.096)			(0.092)		(0.096)
Head is indigenous			-0.300**		-0.348**			-0.343**		-0.357**
			(0.130)		(0.138)			(0.137)		(0.145)
Spouse's age			0.011**		0.011*			0.011**		0.010
			(0.005)		(0.006)			(0.005)		(0.006)
Spouse's educational level in years			0.094***		0.085***			0.079***		0.077***
			(0.018)		(0.019)			(0.018)		(0.019)
Spouse is literate			0.275***		0.314***			0.258***		0.290***
			(0.089)		(0.094)			(0.086)		(0.091)
Spouse is indigenous			-0.187		-0.147			-0.187		-0.170
			(0.131)		(0.138)			(0.138)		(0.146)
Number of male adults				-0.145***	-0.126***				-0.128***	-0.126***
				(0.043)	(0.047)				(0.042)	(0.048)
Number of female adults				0.047	0.063				0.033	0.067
				(0.041)	(0.048)				(0.042)	(0.046)
Number of male children				-0.029	-0.007				-0.016	0.004
				(0.024)	(0.025)				(0.024)	(0.024)
Number of female children				-0.046*	-0.037				-0.050**	-0.035
				(0.024)	(0.025)				(0.025)	(0.025)
Birth spacing between 1st and 2nd child				-0.017*	0.005				-0.027***	-0.007
				(0.010)	(0.011)				(0.010)	(0.011)
Monthly income				0.000	0.000				0.000*	0.000
				(0.000)	(0.000)				(0.000)	(0.000)
Probability value for controls[1]	---	---	0.000	0.007	0.000	---	---	0.000	0.001	0.000
Obs.	13,324	13,291	12,052	12,158	11,275	13,641	13,608	12,316	12,421	11,512
R^2 (overall)	0.030	0.030	0.070	0.040	0.070	0.020	0.020	0.060	0.030	0.060

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.

Table 10: Average Aspirations per Non-Eligible Household Before and After the Start of PROGRESA by Type of Household

	Daughters			Sons		
	Treatment (i)	Control (ii)	T - C (iii)	Treatment (iv)	Control (v)	T - C (vi)
Panel A: HIGH-exposure households						
1. Parental aspirations before the start of PROGRESA	12.194	12.123	0.071	12.513	12.358	0.155
	(0.129)	(0.158)	(0.204)	(0.135)	(0.162)	(0.210)
2. Parental aspirations after 6 months	13.355	13.147	0.208	13.530	13.421	0.109
	(0.133)	(0.157)	(0.206)	(0.132)	(0.153)	(0.202)
3. Parental aspirations after 1 year	13.036	12.952	0.084	13.088	13.046	0.042
	(0.120)	(0.151)	(0.193)	(0.131)	(0.160)	(0.206)
4. Change in mean aspirations baseline vs. 6 months	1.161	1.024	0.137	1.017	1.063	-0.046
	(0.172)	(0.210)	(0.271)	(0.175)	(0.235)	(0.293)
5. Change in mean aspirations baseline vs. 1 year	0.842	0.829	0.012	0.575	0.688	-0.113
	(0.157)	(0.202)	(0.255)	(0.169)	(0.216)	(0.274)
6. Line 4 - Line 5	0.319	0.195	0.124	0.442	0.375	0.067
	(0.168)	(0.190)	(0.253)	(0.178)	(0.186)	(0.257)
Panel B: LOW-exposure households						
7. Parental aspirations before the start of PROGRESA	12.389	12.373	0.015	12.550	12.497	0.053
	(0.108)	(0.129)	(0.168)	(0.113)	(0.131)	(0.173)
8. Parental aspirations after 6 months	13.672	13.425	0.247	13.633	13.461	0.172
	(0.090)	(0.130)	(0.158)	(0.088)	(0.115)	(0.145)
9. Parental aspirations after 1 year	13.098	13.286	-0.189	13.165	13.061	0.104
	(0.094)	(0.119)	(0.152)	(0.098)	(0.127)	(0.160)
10. Change in mean aspirations baseline vs. 6 months	1.284	1.052	0.232	1.083	0.964	0.119
	(0.129)	(0.173)	(0.215)	(0.122)	(0.161)	(0.202)
11. Change in mean aspirations baseline vs. 1 year	0.709	0.913	-0.204	0.615	0.564	0.051
	(0.126)	(0.168)	(0.210)	(0.130)	(0.167)	(0.211)
12. Line 10 - Line 11	0.575	0.139	0.436	0.468	0.400	0.068
	(0.124)	(0.158)	(0.200)	(0.119)	(0.150)	(0.191)
Panel C: Triple difference estimates						
13. Difference between HIGH- and LOW-exposure HHs, baseline vs. 6 months	-0.123	-0.028	-0.095	-0.066	0.099	-0.165
	(0.192)	(0.193)	(0.272)	(0.172)	(0.224)	(0.282)
14. Difference between HIGH- and LOW-exposure HHs, baseline vs. 1 year	0.133	-0.084	0.216	-0.040	0.124	-0.164
	(0.182)	(0.211)	(0.279)	(0.179)	(0.204)	(0.271)
15. Line 13 - Line 14	-0.256	0.056	-0.311	-0.026	-0.025	-0.001
	(0.210)	(0.215)	(0.300)	(0.195)	(0.207)	(0.284)

Note: Robust standard errors clustered at the village level in parenthesis.

Table 11: Effect of Parental Aspirations on Their Children's Time Spent Doing Homework

	Daughters				Sons			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parental aspirations for daughters	1.039***	0.908**	1.019***	0.884**				
	(0.378)	(0.410)	(0.380)	(0.412)				
Parental aspirations for sons					1.729***	1.383***	1.674***	1.354***
					(0.431)	(0.436)	(0.418)	(0.430)
Head's age		-0.213		-0.164		-0.258*		-0.220
		(0.136)		(0.141)		(0.141)		(0.150)
Head's educational level in years		-0.831		-0.831		-1.251*		-1.273*
		(0.637)		(0.630)		(0.749)		(0.741)
Head is literate		3.572		3.621		6.932*		6.620*
		(3.078)		(3.029)		(4.000)		(4.017)
Head is indigenous		-3.259		-3.094		16.624*		18.073*
		(5.492)		(5.365)		(9.571)		(9.236)
Spouse's age		0.382**		0.399**		0.470***		0.520***
		(0.163)		(0.170)		(0.152)		(0.168)
Spouse's educational level in years		0.402		0.241		1.228		1.116
		(0.542)		(0.555)		(0.914)		(0.927)
Spouse is literate		0.457		1.228		0.438		0.596
		(2.962)		(2.923)		(3.528)		(3.576)
Spouse is indigenous		3.205		3.839		-15.072		-15.705*
		(5.673)		(5.628)		(9.492)		(9.196)
Number of male adults			-2.626*	-4.510***			-0.826	-2.076
			(1.453)	(1.41)			(1.337)	(1.53)
Number of female adults			0.777	1.092			-2.289	-2.748*
			(1.005)	(1.068)			(1.463)	(1.537)
Number of male children			-1.121	-0.482			-1.649*	-0.771
			(0.734)	(0.708)			(1.001)	(0.796)
Number of female children			-0.894	-0.608			-2.507***	-1.945***
			(0.595)	(0.592)			(0.773)	(0.738)
Monthly income			0.003**	0.003**			0.003**	0.003**
			(0.001)	(0.001)			(0.002)	(0.002)
Probability value for controls[1]	---	0.294	0.051	0.012	---	0.029	0.003	0.008
Obs.	1,237	1,115	1,237	1,115	1,268	1,151	1,268	1,151
R^2 (overall)	0.006	0.014	0.017	0.030	0.012	0.028	0.030	0.043

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.

Table 12 : Effect of Parental Aspirations on Their Children's Time Spent Working (at Home and Outside)

	Daughters				Sons			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Parental aspirations for daughters	-0.304	-0.164	-0.315	-0.156				
	(0.449)	(0.460)	(0.444)	(0.445)				
Parental aspirations for sons					-0.335	-0.197	-0.463	-0.297
					(0.962)	(1.000)	(0.932)	(0.990)
Head's age		-0.073		-0.065		0.430		0.520*
		(0.100)		(0.106)		(0.286)		(0.299)
Head's educational level in years		-0.182		-0.104		-0.747		-0.706
		(0.504)		(0.517)		(1.251)		(1.159)
Head is literate		-0.611		0.141		-3.660		-1.553
		(3.346)		(3.308)		(6.790)		(6.655)
Head is indigenous		-6.420**		-6.288**		1.623		4.093
		(3.062)		(2.939)		(9.039)		(9.759)
Spouse's age		0.219		0.215		0.395		0.524
		(0.135)		(0.140)		(0.337)		(0.343)
Spouse's educational level in years		0.045		0.168		0.352		0.623
		(0.698)		(0.677)		(1.301)		(1.264)
Spouse is literate		0.057		0.195		-6.944		-6.502
		(3.149)		(3.028)		(6.753)		(6.617)
Spouse is indigenous		1.764		3.562		-17.394**		-16.577*
		(2.831)		(2.684)		(8.732)		(9.689)
Number of male adults			-2.249	-0.762			-1.773	-4.588
			(1.66)	(1.820)			(3.316)	(3.324)
Number of female adults			1.750	0.795			4.477	-0.486
			(1.336)	(1.172)			(2.947)	(2.914)
Number of male children			2.032**	1.967**			8.226***	8.960***
			(1.006)	(0.936)			(2.010)	(1.892)
Number of female children			2.828***	2.657***			-0.907	-0.628
			(0.985)	(0.975)			(1.448)	(1.429)
Monthly income			0.004**	0.005**			0.012***	0.012***
			(0.002)	(0.002)			(0.003)	(0.003)
Probability value for controls[1]	---	0.298	0.027	0.160	---	0.000	0.000	0.000
Obs.	1,778	1,607	1,778	1,607	1,850	1,682	1,850	1,682
R^2 (overall)	0.000	0.004	0.018	0.024	0.000	0.019	0.030	0.051

Note: Robust standard errors clustered at the village level in parenthesis. Each individual coefficient is statistically significant at the *10%, **5%, or ***1% level.

[1]Probability value of joint F test for exclusion of all control variables.