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Does social status predict adult smoking and obesity? Results from the 2000 Mexican National Health Survey

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Abstract

Socioeconomic status is generally associated with better health, but recent evidence suggests that this ‘social gradient’ in health is far from universal. This study examines whether social gradients in smoking and obesity in Mexico—a country in the midst of rapid socioeconomic change—conform to or diverge from results for richer countries. Using a nationally-representative sample of 39 129 Mexican adults, we calculate the odds of smoking and of being obese by educational attainment and by household wealth. We conclude that socioeconomic determinants of smoking and obesity in Mexico are complex, with some flat gradients and some strong positive or negative gradients. Higher social status (education and assets) is associated with more smoking and less obesity for urban women. Higher status rural women also smoke more, but obesity for these women has a non-linear relationship to education. For urban men, higher asset levels (but not education) are associated with obesity, whereas education is protective of smoking. Higher status rural men with more assets are more likely to smoke and be obese. As household wealth, education, and urbanisation continue to increase in Mexico, these patterns suggest potential targets for public health intervention now and in the future.

Keywords

Smoking; obesity; Mexico; social disparities; chronic disease risk factors

Introduction

Past research in industrialised countries has shown that socioeconomic status (SES) is generally associated with better health and healthier behaviours (Link and Phelan 1995, Marmot et al. 1997, Smith 1999, Goldman 2001). Recent evidence suggests, however, that this ‘social gradient’ in health is far from universal. For example, the relationship between SES and various health behaviours among Hispanic and other immigrant populations in the US appears considerably weaker than for native-born groups (Chang and Lauderdale 2005, Goldman et al. 2006, Kimbro et al. 2008). These patterns prompt questions about the shape of the SES health gradient in immigrant sending countries, particularly Mexico, the origin of the largest volume of migrants to the US.

There are several reasons why a positive association between SES and healthy behaviours may not be universal, particularly in developing countries like Mexico. First, income levels among the poor are considerably lower in developing countries than income levels among the poor in wealthy countries. Thus, low income Mexicans may not be able to afford cigarettes, processed or high fat foods, and similar goods. Second, low SES Mexicans are more likely than those with more education or income to have physically active jobs (e.g. farming, manual labour), thus reducing obesity risk. Third, health information, which may reduce risky behaviour among higher SES individuals in wealthy countries, may be less available or influential in Mexico.

Finally, the process of socioeconomic change itself may produce flat or weak gradients. For example, the relationship between SES and smoking appears to change with socioeconomic development, from a positive association between education and smoking early in the tobacco epidemic (when smoking is a status symbol) to a negative association later on (when health knowledge encourages more educated individuals to avoid smoking). For obesity, this change may occur as poor populations transition from an insufficient calorie diet to a calorie-dense but nutrient-poor processed food diet (Popkin 2006a). Gradients observed in the middle stages of these transitions may appear flat.

In this paper, we examine social gradients in smoking and obesity in Mexico by two distinct SES measures, education and household assets. Changes in Mexico's epidemiological profile make investigation of the social determinants of health behaviours, such as smoking and obesity, particularly important. Until recently, undernutrition and infection accounted for much of the country's disease burden. Now, chronic conditions, including diabetes mellitus and cardiovascular disease (CVD), make up a much higher proportion of morbidity and mortality. Obesity, a major risk factor for diabetes, CVD, and other noncommunicable conditions, is increasing rapidly, e.g. obesity among women, 18–49 years, increased by more than 150% during the 1990s, from 9% to 24% (Rivera et al. 2006). While smoking prevalence is declining among men and older women, it is rising among younger women. For example, the proportion of Mexican women, ages 18–29, who report daily smoking increased 20% from 1988 to 2002, while the proportion of women, ages 45–65, who report daily smoking declined 32% over the same time period (Franco-Marina 2007). Approximately 20% of a national sample of youths, ages 13–15, report current smoking (Valdés-Salgado et al. 2005).

Previous research on national and statewide samples has shown that higher SES Mexicans smoke more than lower SES individuals (Caballero et al. 1999, Antonio-Rincón et al. 2002, Vázquez-Segovia et al. 2002). A comprehensive study of obesity among Latin American women (Martorell et al. 1998) found that secondary education is associated with lower odds of obesity in Mexico, Brazil and the Dominican Republic, but not in less rapidly developing countries, e.g. Haiti and Guatemala. Martorell et al. did not find a relationship between assets and obesity. Several studies in Latin America have also investigated social gradients in health behaviour by different dimensions of SES. In rural, poor Mexican communities, Fernald (2007) found that more education, good housing conditions, and more assets are all associated with higher body mass index (BMI) for both men and women. For older Mexican adults, Smith and Goldman (2007) determined that education protects against obesity in urban areas but is a risk factor in rural areas. They also found evidence that higher income and wealth are associated with higher risks of smoking and obesity, but results varied between urban and rural areas.

We extend this literature on smoking and obesity epidemiology in Latin America in several ways. First, we examine SES gradients in health behaviours separately by gender and urban/rural residence to determine whether the gradients vary by demographic groups. Second, we explore two dimensions of SES (education and wealth) and their potentially different associations with health behaviours. Third, while other studies report the prevalence of

smoking and obesity in Mexico, ours is the first to examine the association of both risk factors with educational attainment and household wealth using a large, nationally-representative survey of the adult population.

Data and methods

Participants

Data are drawn from the 2000 Mexican National Health Survey (ENSA 2000, see Valespino et al. 2003). ENSA 2000 sampled 47 360 households based on a stratified multistage sample that is representative of the Mexican population at the state level. Sample weights adjust for nonresponse and design effects. One adult (age 20 or older) was randomly selected from each household to answer a detailed questionnaire on health risk factors, health conditions and health care services utilisation. Trained anthropometrists weighed and measured each respondent. The most knowledgeable respondent in the household reported household asset ownership and other sociodemographic characteristics. Detailed information on ENSA 2000 is available elsewhere (Valespino et al. 2003).

We used an analytic sample of 38 901 adults, ages 20–69, with complete data on sex, age, urban/rural residence, educational attainment, asset ownership, current smoking status, height and weight. From the total sample of 45 294 adults, we excluded 3267 adults, ages 70 and over, to minimize recall and survivor bias. Of the remaining 42 027 adults, ages 20–69, 3126 (7.4%) were excluded due to missing or outlier values on education, assets, smoking status, or BMI. This included 2.9% missing smoking status, and 5.3% missing or having an outlier value of BMI. BMI outliers were defined as more than three interquartile ranges below the first quartile, or more than three interquartile ranges above the third quartile (Larson 2006).

Measures

Current smoking was a dichotomous measure indicating whether the respondent reported currently smoking tobacco. Obesity was defined as having a BMI ≥ 30 kg/m², based on measured height and body weight.

Socioeconomic status (SES) was measured by completed years of education and by household assets. Education was grouped into five categories that reflect the attainment of specific milestones in the Mexican educational system: no education (including illiteracy), incomplete primary (1–5 years), complete primary or some secondary (6–8 years), complete secondary or some high school (9–11 years), and completed high school or more education (12 or more years).

An index of household assets, a reliable proxy of a household's long-run economic status or wealth (Filmer and Pritchett 2001), was derived from ownership of nine items: radio/stereo, TV, VCR, blender, refrigerator, washer, telephone, water heater and car/truck. Factor analysis was used to combine these variables into a single index ranging from 0 to 1 (Cronbach's alpha = .83) (Costello and Osborne 2005). A similar scale has been used to examine socioeconomic status and BMI among adults in poor rural communities in Mexico (Fernald 2007). The household asset index was subsequently categorised as low (0–0.39), medium (0.40–0.69) or high (0.70–1.0) asset ownership.

Control variables included gender, age, and community size. Age was classified into three ten-year groups (20–29, 30–39 and 40–49) and a fourth group of 50–69 year olds (exploratory analyses having shown no difference in smoking or obesity prevalence between the 50–59 and the 60–69 age groups). Following the ENSA sampling scheme and the official Mexican definition, we defined rural communities as those with fewer than 2500 residents. Semi-urban and urban communities (2500 or more residents) are referred to as urban.

Analysis

We used logistic regression to estimate the odds of current smoking and obesity. In the first set of models, we estimated odds ratios for smoking and obesity by education. In the second set, we estimated the corresponding odds ratios by household asset category. Finally, we included both education and assets in a ‘net effects’ model. Analyses are stratified by gender and by urban/rural residence and control for age.

To illustrate the magnitude of the differentials, we next calculated predicted probabilities of smoking and obesity for each subpopulation using the net effects models. We present the predicted probabilities by each of the two SES measures, assigning the middle category for the level of the other SES measure. Predicted probabilities are shown for the youngest (ages 20–29) and oldest (ages 50–69) cohorts to highlight current differences in the probability of smoking and obesity in early vs. late adulthood in Mexico. (In some cases the difference in predicted probabilities of smoking or obesity between the 20–29 and 40–49 age groups is larger than the displayed difference between the 20–29 and 50–69 age groups.)

All regression models were estimated in Stata version 10 (StataCorp 2007). Descriptive statistics and regression estimates were adjusted for the ENSA survey design. Odds ratios and associated confidence intervals for the education and asset variables are shown in Table II and Table III. Adjusted Wald tests were used to assess the joint significance of sets of categorical variables (i.e. all levels of education or all levels of assets). F-tests and p-values from these tests are reported in the tables.

Results

Weighted descriptive statistics for the analytic sample are presented in Table I. Column 1 shows the characteristics of the analytic sample, and Columns 2–5 present results separately for urban women, urban men, rural women, and rural men respectively. Twenty-three percent of respondents report current smoking, 24% are obese, while 5% are both current smokers and obese. Current smoking is most common among urban males (40%), and obesity among urban females (30%). Over 60% of the adults live in communities with 2500 people or more (defined above as ‘urban’).

Smoking

Table II presents odds ratios for current smoking for the four subpopulations. In the columns labelled ‘Gross Effect’, the models include only one SES measure; in the columns labelled ‘Net Effect’, the models include both education and assets. Results for urban respondents are shown in the top panel, and rural respondents in the bottom panel.

With a few exceptions, we found similar results for smoking in urban and rural areas. For women, both higher educational attainment and greater wealth are generally associated with a higher prevalence of smoking (column 1). The reduction of the odds ratios for education in the net effects model (column 2) suggests that some of the observed association between education and smoking can be accounted for by wealth. This attenuation of the education coefficients is particularly striking among rural women. In contrast, the wealth coefficients change little in the presence of controls for education.

Results for men are quite different. Estimates from the gross effects models demonstrate that in both urban and rural areas increased education is associated with slightly lower odds of smoking (column 3). This relationship is jointly significant (F-test) only in the case of urban men, and is due primarily to men with 12+ years of education. In contrast to women, wealth is not significantly associated with men’s smoking. The net effects for both education and wealth (column 4) differ little from the gross effects in urban areas; however, both sets of SES

coefficients are jointly significant in rural areas in the presence of controls for the other SES variable. These net effect estimates reveal that rural men with *high* levels of education and *low* levels of assets are less likely to smoke than their respective counterparts.

Figure 1–Figure 4, which present the predicted probabilities of smoking and being obese for the youngest and oldest age groups in the analysis, provide a visual comparison of the patterns by education and by wealth. Figure 1 highlights what is often referred to as a ‘reverse gradient’ (i.e. reverse from the pattern typically found in richer countries) for women: women with more years of schooling and with greater numbers of assets are more likely to smoke. Figure 1 also demonstrates the generally similar prevalence of smoking between young and older women (although prevalence is higher among the 40–49 age group [not shown] than among the oldest group in both urban and rural areas). In contrast to patterns for women, Figure 2 depicts smoking differentials among men by education that are distinct from those for wealth: the predicted probabilities of smoking decrease with additional years of schooling but increase or remain relatively constant with additional wealth. Also in contrast to women, the estimates of smoking prevalence are considerably higher among younger than older men. Not surprisingly, Mexican men are much more likely to smoke than Mexican women, although the urban disadvantage is apparent for both sexes.

Obesity

The odds ratios for obesity are presented in Table III. Among urban women, higher educational attainment is associated with significantly lower odds of obesity (column 1). In rural areas, education has a non-monotonic relationship with obesity: women with moderate levels of education are those most likely to be obese. The wealth effects are not significant for urban women, but higher asset levels are significantly associated with higher obesity prevalence for rural women. These results change little in the net effects models, with the exception that highly educated rural women have significantly lower odds of obesity than uneducated women (column 2).

For men, most of the estimates in columns 3 and 4 of Table III suggest that education matters little for obesity. In contrast, household wealth is positively and significantly associated with obesity for both urban and rural men (whether or not education is included in the model).

The striking contrast in the association between obesity and education vs. obesity and wealth is depicted in Figure 3 and Figure 4. In Figure 3, the generally negative gradient for education among women, similar to that found in richer countries (i.e., a protective effect of additional years of schooling), is fundamentally different from the reverse gradient for assets. Figure 4 reveals virtually no education differentials among men, but a set of wealth gradients similar to those for women. For all four groups, greater wealth is strongly associated with higher predicted levels of obesity. The graphs also demonstrate the much higher estimated prevalence of obesity among older as compared to younger men and women (double in some cases).

Discussion

We have examined SES-health differentials in obesity and smoking in a nationally representative sample of Mexican adults, using two distinct measures of socioeconomic status. Our results indicate that the predominant protective effects of SES on smoking and obesity are not universal. Particularly striking is the positive association between smoking and SES for women: more educated women, and those with higher household assets, are more likely to smoke in both urban and rural areas. These results suggest that the tobacco epidemic is still in an early stage in Mexico, with higher SES women adopting smoking as an innovative behaviour (Pampel 2003). In contrast, for men – who are far more likely to smoke than women in general – those living in urban areas are significantly *less* likely to smoke if they are highly educated.

The same is true for rural men when household assets are held constant. For obesity, women show the typical pattern seen in high-income countries – higher education is associated with lower obesity. However, for urban and rural men and rural women, higher assets are associated with *greater* obesity – suggesting greater caloric intake, poorer food quality, and/or a more sedentary lifestyle.

A second important finding is that education and household assets can have quite different relationships with health behaviour. For example, for rural women, more education protects against obesity, but higher assets increase the obesity risk. The same pattern emerges for smoking among urban men. These findings echo similar results from Brazil (Monteiro et al. 2001), and highlight the importance of examining the effects of components of SES rather than focusing on aggregate indices.

A limitation of our analysis is our use of cross-sectional data. We are not able to examine change over time, nor can we make causal statements about the role of education and assets in determining health. We do not consider smoking intensity, which other research indicates is relatively low in Mexico, even among groups where prevalence is high (Franco-Marina 2007). Our data do not include dietary intake or physical activity measures that would allow us to investigate the determinants of obesity in more detail. An important extension of the work could gather qualitative measures of adult knowledge, attitudes, and preferences around smoking, diet and physical activity, to enhance our understanding of health behaviours in this population.

Despite these constraints, our results provide insight into the future trajectory of smoking and obesity in Mexico. Mexico is experiencing increases in educational attainment (particularly among women and in rural areas) and income, and is undergoing rapid urbanisation (Wong and Palloni forthcoming). Although the patterns revealed in our analysis suggest a sizable increase in smoking among women as education and incomes rise, the strength and direction of these associations in the future will depend on the pace at which Mexico's tobacco epidemic progresses. For example, future smoking prevalence among high-status men will depend on how quickly the slope of the wealth-smoking relationship changes to match the protective effects of more education that Mexican men already enjoy.

These results suggest that public health interventions to reduce smoking will also have to change over time. At the moment, more educated Mexican women should be a key target for anti-smoking programmes. Programmes designed to change social norms about smoking, and to provide information about its dangers, could prevent a dramatic increase in smoking among women as educational attainment rises in successive cohorts. However, as the tobacco epidemic evolves in Mexico, the direct relationship between SES and smoking is likely to shift to an inverse association (Pampel 2003, 2006), at which time prevention and cessation efforts will need to be targeted at lower SES women.

It is also uncertain how the obesity epidemic will unfold in Mexico. Given the unprecedented rise in obesity prevalence across socioeconomic strata, lessons from other countries may not be useful here. In the short-term, obesity may rise substantially for women with increases in household wealth and urbanisation, which may outweigh any protective effects of education. For men, education is not related to obesity, but higher assets are consistently associated with obesity. We speculate that this pattern may arise in large part from sedentary occupations and lack of exercise outside of work, and that the pattern is likely to persist in younger cohorts as they age. Increasing physical activity levels, and improving diets across all groups, will be as important to reducing heart disease and diabetes in Mexico as in developed countries.

Future health behaviours are also likely to be affected by the regulatory environment in Mexico. Compared to wealthy countries, such as the US, the adoption of regulations and programmes

that promote healthy lifestyles are relatively recent in Mexico. Mexican law did not prohibit the sale of cigarettes to youth under age 18 until 1984, and progress on tobacco control under the Framework Convention for Tobacco Control has been slow in recent years. Tobacco taxes also remain low (Bianco et al. 2005). Meanwhile, federal nutritional policies still focus almost exclusively on securing food sufficiency among the poor (Barquera et al. 2001). Mexico, like many developing countries, has undergone rapid dietary shifts in recent decades, away from whole grains, fruits and vegetables and towards edible oils and caloric sweeteners (Popkin 2003, 2006a, 2006b). Agriculture and trade policies may, therefore, offer some leverage in promoting healthier diets. More generally, stronger policies and focused attention by the public health community are needed to stem increases in obesity and smoking in Mexico, and to safeguard against growing social inequalities in these important health behaviours.

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Figure 1.

Predicted probability of currently smoking by urban/rural residence, age group, and educational attainment or household asset ownership, Mexican women, 2000

Figure 2.

Predicted probability of currently smoking by urban/rural residence, age group, and educational attainment or household asset ownership, Mexican men, 2000

Figure 3.

Predicted probability of obesity by urban/rural residence, age group, and educational attainment or household asset ownership, Mexican women, 2000

Figure 4.

Predicted probability of obesity by urban/rural residence, age group, and educational attainment or household asset ownership, Mexican men, 2000

Table 1

Selected sociodemographic characteristics, Mexican adults ages 20–69

	Total sample	Urban		Rural	
		Women	Men	Women	Men
	(1)	(2)	(3)	(4)	(5)
Gender					
Female (%)	53	100	0	100	0
Male (%)	47	0	100	0	100
Residence					
Urban (%)	62	100	100	0	0
Rural (%)	38	0	0	100	100
Age					
20–29 (%)	37	37	39	38	33
30–39 (%)	27	27	26	28	29
40–49 (%)	18	18	18	17	19
50–69 (%)	18	17	17	18	19
Years of completed education					
0 (or illiterate) (%)	7	5	2	14	9
1–5 (%)	22	17	11	35	34
6–8 (%)	25	25	23	27	26
9–11 (%)	24	26	30	17	20
12+ (%)	22	27	34	8	11
Household assets					
Low (%)	24	11	9	47	48
Medium (%)	36	36	34	36	35
High (%)	40	53	56	17	17
Current smoker = Yes (%)	23	15	40	3	31
Obese (BMI > 30 kg/m ²) = Yes (%)	24	30	21	25	15
Current smoker and obese (%)	5	4	7	1	4
N (unweighted)	38 901	14 668	6 433	12 431	5 369

Source: Own calculations using Mexican National Health Survey (ENSA) 2000. Table shows weighted percentages and unweighted Ns. Household asset categories are based on a household asset scale ranging from 0–1 based on ownership of nine common household items. Asset scale scores are grouped into ‘Low’ (0–.39), ‘Medium’ (.40–.69) and ‘High’ (.70–1.00) categories.

Table II

Odds ratios (95% confidence intervals) for logistic regression models^a of the association between socioeconomic status and current smoking, adults ages 20–69, Mexican National Health Survey (ENSA) 2000

	Urban			
	Women		Men	
	Gross Effect (1)	Net Effect (2)	Gross Effect (3)	Net Effect (4)
Education (completed years)				
0	1.00	1.00	1.00	1.00
1–5	1.34 (0.89–2.01)	1.29 (0.86–1.94)	0.81 (0.51–1.29)	0.79 (0.50–1.28)
6–8	2.44 (1.62–3.67)	2.24 (1.48–3.40)	0.99 (0.63–1.54)	0.96 (0.61–1.52)
9–11	2.59 (1.69–3.97)	2.27 (1.48–3.49)	0.82 (0.53–1.26)	0.79 (0.51–1.23)
12+	3.15 (2.07–4.79)	2.58 (1.67–3.99)	0.63 (0.41–0.97)	0.61 (0.38–0.96)
<i>F-statistic^b (p value)</i>	17.85 (<.01)	11.82 (<.01)	4.42 (<.01)	4.21 (<.01)
Household asset ownership				
Low	1.00	1.00	1.00	1.00
Medium	1.13 (0.86–1.48)	1.01 (0.77–1.32)	1.09 (0.85–1.40)	1.15 (0.89–1.48)
High	1.77 (1.37–2.30)	1.41 (1.08–1.83)	1.00 (0.78–1.28)	1.15 (0.88–1.49)
<i>F-statistic^b (p value)</i>	21.90 (<.01)	10.36 (<.01)	0.56 (.57)	0.61 (.54)
N (unweighted)	14 668	14 668	6 433	6 433
	Rural			
	Women		Men	
	Gross Effect	Net Effect	Gross Effect	Net Effect
Education (completed years)				
0	1.00	1.00	1.00	1.00
1–5	1.73 (1.18–2.54)	1.39 (0.94–2.05)	0.97 (0.73–1.28)	0.93 (0.69–1.24)
6–8	2.24 (1.45–3.46)	1.56 (1.00–2.46)	0.88 (0.63–1.23)	0.82 (0.58–1.14)
9–11	2.48 (1.52–4.04)	1.47 (0.89–2.44)	0.94 (0.66–1.34)	0.83 (0.57–1.19)
12+	3.88 (2.34–6.43)	1.96 (1.18–3.26)	0.64 (0.42–0.96)	0.53 (0.34–0.81)
<i>F-statistic^b (p value)</i>	7.15 (<.01)	1.78 (.13)	1.61 (.17)	2.75 (.03)
Household asset ownership				
Low	1.00	1.00	1.00	1.00
Medium	1.91 (1.41–2.58)	1.78 (1.30–2.43)	1.19 (1.00–1.43)	1.28 (1.06–1.54)
High	3.51 (2.53–4.86)	3.06 (2.19–4.28)	1.19 (0.93–1.53)	1.37 (1.06–1.78)
<i>F-statistic^b (p value)</i>	28.68 (<.01)	21.92 (<.01)	2.04 (.13)	4.25 (.01)
N (unweighted)	12 431	12 431	5 369	5 369

Source: Own calculations using Mexican National Health Survey (ENSA) 2000 (N=39 129).

^a Gross Effect models include one SES measure (education or household assets). Net Effect models include both SES measures. All models control for age. All models are weighted and confidence intervals are adjusted to account for the ENSA sampling scheme and clustering at the community level.

^b The reported F-statistics are from adjusted Wald tests of the joint significance of the set of categorical variables immediately above. Bolded F-statistics indicate that the set of categorical variables is jointly significant at the 5% level.

Table III

Odds ratios (95% confidence intervals) for logistic regression models^a of the association between socioeconomic status and obesity, adults ages 20–69, Mexican National Health Survey (ENSA) 2000

	Urban			
	Women		Men	
	Gross Effect (1)	Net Effect (2)	Gross Effect (3)	Net Effect (4)
Education (completed years)				
0	1.00	1.00	1.00	1.00
1–5	1.02 (0.80–1.29)	1.00 (0.78–1.27)	0.90 (0.52–1.54)	0.84 (0.48–1.45)
6–8	0.91 (0.72–1.13)	0.87 (0.70–1.09)	1.06 (0.63–1.77)	0.94 (0.56–1.60)
9–11	0.68 (0.53–0.86)	0.64 (0.51–0.82)	0.92 (0.54–1.54)	0.78 (0.46–1.32)
12+	0.57 (0.45–0.73)	0.54 (0.41–0.69)	1.04 (0.61–1.75)	0.83 (0.49–1.42)
<i>F-statistic^b (p value)</i>	15.02 (<.01)	15.03 (<.01)	0.51 (.73)	0.61 (.65)
Household asset ownership				
Low	1.00	1.00	1.00	1.00
Medium	1.07 (0.90–1.27)	1.17 (0.98–1.40)	1.38 (0.98–1.94)	1.41 (1.00–1.97)
High	0.96 (0.81–1.15)	1.22 (1.00–1.47)	1.70 (1.22–2.36)	1.76 (1.27–2.45)
<i>F-statistic^b (p value)</i>	1.71 (.18)	1.97 (.14)	5.68 (<.01)	6.44 (<.01)
N (unweighted)	14 668	14 668	6 433	6 433
	Rural			
	Women		Men	
	Gross Effect	Gross Effect	Gross Effect	Net Effect
Education (completed years)				
0	1.00	1.00	1.00	1.00
1–5	1.57 (1.31–1.89)	1.38 (1.15–1.66)	1.27 (0.88–1.84)	1.12 (0.78–1.60)
6–8	1.63 (1.33–1.99)	1.30 (1.05–1.61)	1.33 (0.87–2.04)	1.03 (0.68–1.55)
9–11	1.39 (1.06–1.81)	0.99 (0.75–1.31)	1.40 (0.86–2.31)	0.96 (0.59–1.57)
12+	1.11 (0.84–1.47)	0.72 (0.53–0.96)	2.22 (1.39–3.54)	1.26 (0.79–2.02)
<i>F-statistic^b (p value)</i>	8.99 (<.01)	9.79 (<.01)	3.52 (.01)	0.62 (.65)
Household asset ownership				
Low	1.00	1.00	1.00	1.00
Medium	1.54 (1.33–1.79)	1.59 (1.36–1.84)	1.82 (1.42–2.33)	1.81 (1.41–2.31)
High	1.85 (1.57–2.19)	2.02 (1.69–2.41)	2.87 (2.13–3.86)	2.78 (2.06–3.76)
<i>F-statistic^b (p value)</i>	29.13 (<.01)	32.87 (<.01)	24.74 (<.01)	23.15 (<.01)
N (unweighted)	12 431	12 431	5 369	5 369

Source: Own calculations using Mexican National Health Survey (ENSA) 2000 (N=39 129).

^a Gross Effect models include one SES measure (education or household assets). Net Effect models include both SES measures. All models control for age. All models are weighted and confidence intervals are adjusted to account for the ENSA sampling scheme and clustering at the community level.

^b The reported F-statistics are from adjusted Wald tests of the joint significance of the set of categorical variables immediately above. Bolded F-statistics indicate that the set of categorical variables is jointly significant at the 5% level.