"Migrant health selection from five major sources of U.S. immigration."

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ABSTRACT

Immigrants to the United States generally exhibit better health outcomes than U.S.-born populations. Although this may derive from a high positive health selection among migrants relative to their peers in the sending country, little research has empirically tested for selection in groups other than Mexicans and Puerto Ricans. We match data on the foreign-born from India, China, the Philippines, the Dominican Republic, and Mexico from the National Health Interview Survey in the U.S. to nonmigrants living in the sending country interviewed in the World Health Survey. Using matching techniques, we compare the height and prevalence of smoking and obesity of immigrant men and women with those of people living in sending nations with similar ages and socioeconomic status. With some exceptions and consistent with selection, we find that immigrant men and (to a lesser extent) women are taller and have a lower prevalence of smoking and obesity than nonmigrants.

Keywords: international migration; health; selection; United States; India; China; Philippines; Dominican Republic; Mexico.

Immigrants in the United States have low mortality and favorable chronic health and risk factor profiles relative to U.S.-born populations (see Argeseanu Cunningham, Ruben and Venkat Narayan 2008). As most immigrants come from places with worse health conditions (e.g., lower life expectancy, Jasso et al. 2004: Table 7-9), it is assumed that immigrants may be positively selected in terms of health, which would in turn explain the immigrant health advantage (henceforth, IHA).

Despite this possibility, little research has empirically confirmed the existence and degree of selection among immigrants, particularly in groups other than Mexicans and Puerto Ricans (for exceptions pertaining to these groups, see Barquera et al. 2008; Crimmins et al. 2005; Landale, Gorman and Oropesa 2006; Landale, Oropesa and Gorman 2000; Riosmena, Palloni and Wong forthcoming; Rubalcava et al. 2008). In this paper, we use matching techniques on combined data from foreign-born Indian, Chinese, Filipino, Mexican, and Dominican men and women from the National Health Interview Survey (NHIS) in the United States and (nonmigrants) living in the sending country from the World Health Survey (WHS). Using matching techniques, we compare the height and prevalence of smoking and obesity of immigrant men and women with those of people living in sending nations with similar ages and socioeconomic status (SES). With few exceptions and consistent with the idea of emigration selection, we find that immigrant men and (to a lesser extent) women are taller and have a lower prevalence of smoking and obesity than nonmigrants.

The identification and assessment of the *degree* of health selection among immigrants of several (major) national origin groups would futher be useful in order to understand how health selection may be associated with the socioeconomic and legal contexts of emigration and reception. This understanding would in turn allow us to better understand differences in modes of incorporation (a.k.a. immigrant adaptation processes) across national origin groups (Portes and Böröcz 1989).

PREVIOUS RESEARCH

Potential Explanations of the Immigrant Health Advantage

The IHA is the main driver behind the so-called Hispanic Health Paradox (HHP), the remarkable result in which Latin American immigrants exhibit better-than-expected health outcomes (in many cases superior to those of U.S.-born non-Hispanic whites) despite their relatively low SES (e.g., Hummer et al. 2007; Hummer et al. 2000; Markides and Eschbach 2005, 2011).Given the unexpected nature of the IHA given high levels of social stratification in health outcomes(Adler and Ostrove 1999; Goldman 2001; Link and Phelan 1995), particularly in the United States (Banks et al. 2006), scholars have been skeptical of the IHA and looked at the role of faulty data and statistical artifacts brought by selective return migration in addition to emigration selection and the possibility of socio-cultural protection mechanisms operating in the United States.

Faulty data

Immigrant mortality is generally measured by linking individuals interviewed in (cross-sectional) household surveys to vital statistics records from the National Center for Health Statistics as vital statistics records alone do not include nativity data. As such, the mortality of the foreign-born may *appear* to be lower than that of the U.S.-born (e.g., Singh and Hiatt 2006; Singh and Miller 2004) as immigrants may be less likely to be properly matched to a death record (Patel et al. 2004). Despite the existence of these biases, faulty data alone cannot explain away the immigrant advantage in mortality (Markides and Eschbach 2005; Patel et al. 2004).

Likewise, faulty data alone cannot explain the immigrant advantage in chronic health outcomes such as hypertension (Riosmena et al. forthcoming). Indeed, immigrants may be more likely to self-report several (and fewer) health conditions as the foreign-born are also less likely to have systematic timely access to health care (e.g., Derose et al. 2009), thus being less likely to be screened for different health conditions (Jurkowski and Johnson 2005). Although this is a possibility, immigrants seem to have better-than-expected biological risk profiles (Crimmins et al. 2007), suggesting the IHA is not explained by faulty data.

In our study, we use data on height, weight, and self-reported smoking to assess selection in obesity and the prevalence of smoking, indicators of major risk factors associated with chronic disease and mortality (e.g. Krueger et al. 2004; Mehta and Chang 2009). Although individuals tend to exaggerate their height and understate their weight, these reports have been deemed valid for the estimation of Body Mass Index cutoffs (e.g., among Mexicans, Osuna-Ramírez et al. 2006), especially after controlling for or matching by gender, age, and educational attainment, as we do in our analyses below. Further, these measures, along with smoking, should not be sensitive to data problems related to access to health care.

Statistical artifacts

Data on the health of the foreign-born generally come from measurements taken (a substantial amount of) time after the immigrant's arrival into the United States. As such, the very composition of the original immigrant cohort could have changed due to (health) selective emigration (or mortality). If returning (deceased) migrants were less healthy than those remaining in the U.S. (surviving), immigrant health as measured in the aforementioned surveys would appear more favorable, which could in turn explain the IHA.

Prior studies have shown that older migrant adults returning to (Mexico) are indeed in slightly worse health status than those remaining in the United States (Crimmins et al. 2005; Palloni and Arias 2004; Riosmena et al. forthcoming). Likewise, older return migrant adults also exhibit slightly higher mortality rates relative to immigrants residing in the United States (Turra and Elo 2008). However, as in the case of data-related biases, the amount of negative return selection is not only generally small and insufficient to explain the full extent of the IHA (e.g., Turra and Elo 2008: p. 526), but has only been found among older age groups. Further, note that the IHA also holds for groups where return migration attrition is unlikely, such as in the study of infant mortality within the first few hours after a child's birth (Hummer et al. 2007) and among Cuban immigrants (e.g., Abraido-Lanza et al. 1999), for whom emigration is highly unlikely. As such, statistical artifacts are most likely not the main explanation of the IHA.

In our study, we reduce the possibility of selective mortality by looking at younger cohorts (i.e., people ages 18-49). However, we keep in mind the possibility of statistical artifacts brought by selective return migration, particularly among Mexican immigrants (who have higher return migration rates than other groups, Jasso and Rosenzweig 1982; Riosmena 2006) by performing sensitivity tests by looking at immigrants with less than five years of U.S. experience. As return rates among Mexicans are non-trivial even within the first five years after arrival (though less so in recent relative to prior times, Riosmena 2004), we will evaluate if our selection effects vary by age, as return rates differ considerably throughout adulthood (Masferrer and Roberts 2012).

Sociocultural protection

Even if the measurement of immigrant health some time after an immigrant's arrival into the country does not alter the composition of an immigrant cohort substantially, the health of foreign-born individuals (captured by the survey) could have changed during their tenure in the United States. Although, in the long run, immigrant health seems to deteriorate with increasing

U.S. experience and acculturation (e.g., Lara et al. 2005), it is possible that certain (socio-cultural) mechanisms operate to protect the health of immigrants in the short- to medium-run.

However, the evidence of such socio-cultural protection among immigrants ranges from weak to non-existent (Landale et al. 2000; Lee and Ferraro 2007; Riosmena et al. forthcoming; but see Teitler, Hutto and Reichman 2012). Despite this lack of substantial evidencie, we keep in mind the possibility of the existence of protection by examining how health selection differs between immigrants most recently arrived into the country (i.e., those with less than 5 years of U.S. experience) relative to those with medium durations of stay (i.e., 5-9 years) . Further, we look at patterns of selection in height relative to obesity and smoking as height should not be affected by protection mechanisms.[1]

As mentioned at the outset, scholars have also posited that immigrants must be positively selected in terms of health relative to their nonmigrant peers in sending countries, which should partially explain the IHA. While studies have found evidence consistent with this positive emigration selection in health among Mexicans (Barquera et al. 2008; Crimmins et al. 2005; Riosmena et al. forthcoming; Rubalcava et al. 2008) and Puerto Ricans (Landale et al. 2006; Landale et al. 2000), we know of no studies examining other national origin groups.

As also mentioned above, assessing the degree of health selection among immigrants of several (major) national origin groups should improve our understanding of how socioeconomic and legal contexts of emigration and reception could be influencing health selection from different nations.

DATA

[1] This would also serve as a test for cohort differences in selection.

We match data for immigrants from the NHIS in the United States and for nonmigrants living in sending nations from the WHS. The NHIS has been fielded by the National Center for Health Statistics, Centers for Disease Control and Prevention since the late 1950s. Each annual cross-section is a nationally representative, multistage, stratified sample of the U.S. population oversampling Hispanics since 1995 and experiencing major questionnaire changes in 1997 and some minor ones in 1998 and 1999 related to the measurement of race/ethnicity.

In addition to gathering information on all household members to create files with information at the person, family, and household levels, NCHS personnel also interviewed one child and one adult (chosen at random) in the household to obtain more detailed information on a number of items. Given our main focus on adults, we mainly use socio-demographic and health information from both person and adult sample files. While response rates for the household interview range between 85% and 90% in each survey year, adult sample interviews have a marginal response rate (that is, also considering non-response at the household level) of around 70% (NCHS 2008: Appendix I). Botman et al. (2000) further provide details on the NHIS methodology.

Data from countries of origin come from the World Health Survey (WHS), a World Health Organization initiative designed to collect comparable individual-level health data worldwide. During 2003 and 2004, 70 countries implemented the WHS questionnaire with supervision and technical assistance from the WHO while using a stratified multi-stage cluster sampling frame of households to randomly select men and women ages 18 and over. Although the strata and cluster definitions vary across countries, the WHS set clear quality standards needed to obtain multi-stage probability samples. Countrywide response rates for the five countries included in our analyses are generally above 95%, with the exception of the Dominican

Republic, where response rates were 74% (WHO 2009). Each country is among the top 10 sources of US immigration in recent times (e.g. DHS 2008: Tables 2 and 3).

We use data on adults ages 18-49 from both surveys. In addition to restricting our analyses in the NHIS to foreign-born Indians, Chinese, Filipinos, Mexicans, and Dominicans, we further restrict the sample to those with durations of stay in the United States of less than 10 years to reduce the possibility that acculturation and return migration processes are affecting migrant health.[2] These restriction lead to immigrant sample sizes of 989 Indians, 501 Chinese, 366 Filipino, 5887 Mexicans and 321 Dominicans (see Table 1 for sample characteristics by sex). In the sending country, our age restriction yielded 5706 Indians, 2913 Chinese, 7477 Filipinos, 29367 Mexicans, and 3020 Dominicans.

Table 1 depicts the substantial unadjusted differences in key health outcome variables for each country-sex grouping. Table 1also illustrates migrant – nonmigrant differences in our key matching variables, age and education. For China and Mexico, migrants are between 3 and 5 years younger than the left-behind. Differences are smaller for India, Dominican Republic, and women from the Philippines (less than two years). For men from the Philippines, migrants are actually older than non-migrants, though we note the small migrant sample size. Age differences may contribute to the migrant health advantage since each of these countries has experienced ongoing epidemiologic transitions to better health among younger cohorts.

-TABLE 1 ABOUT HERE-

Selectivity on education is more notable. For China, India, and the Philippines, migrants are at least 5 times more likely to have a college or university degree than non-migrants; most notably, 71% of migrant women from India have a degree, compared to only 6.5% of the left-

[2] As mentioned above, we also restrict the sample in some analyses to individuals with less than 5 years of U.S. experience to test for the robustness of our estimates.

behind. For the DR, migrants are only about 3 times as likely to have a university degree (18% vs. 6%), but migrants are substantially more likely to have some high school education or above (92% vs. 24% for men, 88% vs. 31% for women. Educational selectivity is far lower for Mexico, or even negative. Migrants are substantially less likely to have completed university (5% vs. 13% for men, 7% vs. 9% for women), and they are only slightly more likely to have completed high school or above (64% vs. 61% for men, 64% vs. 54% for women).

ANALYTICAL STRATEGY AND PRELIMINARY RESULTS

We employ a range of matching techniques to account for the role of gender, age and education selectivity (e.g., Feliciano 2005, 2008; Grasmuck and Pessar 1991; Hill and Wong 2005) in driving differences in migrant health. Matching was conducted using the MatchIt procedure in the R statistical package. We report on models that employ exact matching, in which “treated” cases (migrants) are matched to all controls (non-migrants) having the exact same observable characteristics, as in a case-control design. Exact matching is preferable to approximate methods such as nearest-neighbor matching when the ratio of controls to cases is high and the number of matching covariates low, thus rendering a high probability of finding controls for each case. As evident from Table 1, the ratio of controls to cases is high in our study. Further, we also use a limited number of controls: we match on sex, age, and educational attainment levels.[3]

For each country-sex-outcome combination, we report unadjusted and adjusted treatment effects of the marginal difference in outcome between migrants to non-migrants. For raw height and height z-score (calculated by sex and country of origin), we calculate linear differences. For obesity, overweight, and smoking prevalence measures, we computer the marginal percentage-

[3] We also add height z-score as a matching characteristic for robustness testing of obesity and smoking effects in alterative analyses.

point difference in prevalence (as opposed to relative risks). For the full sample of migrants and non-migrants, our unadjusted estimator is the simple difference in means between the full sample of migrants in NHIS and the full country-sex sample in the sending country. The adjusted full-sample estimator is the marginal effect of migration from a pooled regression with age and education entered as controls.

For the matched samples, we similarly produce unadjusted and adjusted estimators. The unadjusted estimator is the simple difference in means between the migrant sample and their non-migrant matches. The adjusted estimator is an average treatment on the treated (ATT) effect in which the difference in means is adjusted to account for variations in the number of matches control for each case. For instance, given the wide disparity in schooling between migrants and non-migrants, those migrants having lower levels of schooling will a significantly greater number of matched controls.

Table 2 shows results from the aforementioned ATT effects by sex and national origin group. Migrant men from Indian and Mexico have a 14% lower prevalence of smoking than their nonmigrant peers while smoking differences are even larger, at 23%, among Chinese and Filipino migrant men. These disparities are smaller (7%) and not significant for Dominican men. Although these differences are also smaller among migrant women in general, they are significant for Filipino (3%), Indian (7%), Mexican (9%), and Chinese (12%) migrant women. As in the case of men, the (2.5%) lower prevalence of smoking among Dominican women is not statistically significant at the 0.05 level.

Our results for obesity are less uniform. We find evidence consistent with selection among Chinese and Dominican men, who have a 18% and 16% lower prevalence of obesity than their nonmigrant peers. While Indian and Filipino migrant men also exhibit a lower prevalence of obesity (5% and 2.8% respectively), these differences are not statistically significant. Further, we find no conclusive evidence consistent with emigration selection as we find no statistically significant differences between migrant and nonmigrant women favoring migrants from India, China, the Phillippines, and the Dominican Republic.

-TABLE 2 ABOUT HERE-

In sharp contrast, migrant men and women from Mexico have a 5% *higher* prevalence of obesity than their nonmigrant controls. This is a puzzling result that could be explained by the fact that 1) migrants are more likely to come from places with stronger migrant networks and higher migratory traditions (e.g., Massey and Zenteno 1999) and 2) as these places exhibit a higher prevalence of child, adolescent, and adult obesity as a result of monetary and social remittances (Creighton et al. 2011; Riosmena et al. 2012).

Finally, we supplement our analyses of smoking and obesity using height as a measure of child and adolescent nutrition, health, and wellbeing. Although this indicator is a weak/questionable measure of adult health *per se* (Ben-Shlomo and Smith 1991), we use it as a somewhat imperfect indicator of past accumulated imbalances between nutritional intake and load of disease that individuals experienced during their growth phases (before age 20-25) in an attempt to separately identify more general selection effects that are free of the potential role of protection mechanisms, described above.[4]

We report results in both raw differences in height (in centimeters) and in z-scores based on sex- and country-specific standardized scores. Overall, and as in the case of smoking and (to a somewhat lesser extent) obesity, our results are consistent with the idea of selection. Indian migrant men are 9 cm (3.5 in), almost 0.9 standard deviations taller than their nonmigrant peers

[4] We also performed similar analyses restricting the sample to those over 25 years old, finding similar results to those reported here.

of the same age and educational attainment. These differences are somewhat smaller but still substantial and statistically significant for all other groups. Filipino men are 4 cm (1.6 in) taller than their nonmigrant counterparts, a difference of 0.6 standard deviations. Likewise, Mexican migrant men are 3.8 cm (1.5 in) taller than nonmigrants, a gap of 0.45 standard deviations, while Chinese migrant men are 2.6 cm taller than nonmigrants, a difference of almost 0.4 standard deviations. Finally, Dominican men are almost 2 cm (0.78 in) taller than nonmigrants living in the DR, a smaller difference also in terms of z-scores (0.2 standard deviations) but still statistically significant.

Although migrant women are less selected in terms of height in both absolute and relative terms, they are still indeed somewhat taller than nonmigrant women. These differences are largest among Indian migrant women at 4 cm and 0.4 standard deviations, though not nearly as large as they are for men both in z-scores and in the differences in selectivity with other national origin migrant groups, as described in the previous paragraph. Differences between migrant and nonmigrant women in other national origin groups are still substantial among most other national origin groups. For instance, they are sizable and fairly close to the selectivity observed in Mexican migrant men at 0.37 standard deviations (vs. 0.45 for men) and, to a lesser extent, to Chinese migrant men at 0.31 standard deviations (vs. 0.39 for men). Finally, they are more modest in the case of Filipino women at 0.16 standard deviations (though they are statistically significant at the 0.05 level) while they are very small, *negative*, but not statistically significant for Dominican women.

Robustness checks

We have begun testing the robustness of these results in a variety of ways. First, by focusing on migrants with up to 10 years residence in US, our results may reflect the effects of early acculturation or selective return migration. We repeat our analysis restricting our migrant sample to those with up to 5 years of US residence, reducing sample size but further isolating the effects of selective emigration. Preliminary results with the Mexican sample (the largest indeed, but also the most sensitive to return migration attrition) suggests our results using smoking, consistent with positive emigration, selection are robust to this restriction. Further, they also suggest that some of the immigrant disadvantage in obesity may be a product of negative acculturation (also see Akresh 2007; Antecol and Bedard 2006; Lopez-Gonzalez, Aravena and Hummer 2005).

Finally, note that some of the differences in height could be related to ecological or ethnic differences between migrant groups and the general population. To address the confounding role of ecological selection in driving our results, we will also restrict the pool of potential matches to urban areas of the sending countries. Where WHS data offer sufficient geographic specificity, we further restrict the pool of matches to regions that are known to have higher rates of out-migration rates to the US (e.g. Guangdong and Fujian Provinces in China). We will report these and other tests in the full paper.

PRELIMINARY CONCLUSIONS

In this paper, we have shown that migrants (with less than ten years of experience in the U.S.) are taller, less likely to smoke, and –to a lesser extent–have a lower prevalence of obesity than nonmigrants of the same sex, age, and schooling levels. These differences are substantial, especially in terms of height. As such, we posit migrant selection processes may be more relevant than protection processes in explaining the IHA. Future versions of this paper will attempt to look at this indirectly and within the limitations of our data. Future work should also consider the role of protection more directly in the context of migrant groups other than Mexicans and Puerto Ricans.

In this paper, we have shown that the IHA, by and large studied in the context of the Hispanic Health Paradox and thus focused on Mexicans and (to a lesser extent) other groups, seems an even more substantial phenomenon for migrants from Asia. Although the favorable health status of immigrant from India, the Philippines, and China may be less surprising than that of Latin American migrants given their higher educational selectivity (Feliciano 2005) and average socioeconomic status (Jiménez 2011), we have shown that their levels of health selection are not a result of their educational composition alone.

The difficult conditions of Mexico-US migration seem to be a far less significant mechanism of selection than the social and cultural selectivity at play in India, China, and the Philippines. A plausible interpretation of such selection is that, contrary to the cultural perception of migrants as risk-takers given their gumption to leave their places of origin for foreign lands, they represent a uniquely healthy population that does not seem to be particularly likely to engage in certain kinds of unhealthy behavior that could be construed as risk-taking.

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Table 1 Descriptive statistics for area of common support by sample, country of origin and sex

	A. Residents of country of origin (2002-2003 World Health Survey)									
	India		China		Philippines		Mexico		Dom. Republic	
Variable	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Height (cm.)	164.4	154.2	169.2	159.2	164.3	155.9	167.1	156.8	170.8	161.6
Overweight ($25 \leq BMI < 30$ kg/m^2)	0.066	0.074	0.140	0.108	0.155	0.125	0.408	0.333	0.302	0.243
Obesity ($BMI \geq 30$ kg/m^2)	0.013	0.021	0.014	0.014	0.031	0.039	0.122	0.174	0.143	0.137
Current smoking	0.462	0.107	0.616	0.025	0.586	0.099	0.364	0.143	0.167	0.119
Age	32.1	30.6	37.6	37.2	33.6	34.0	33.9	33.8	34.7	33.4
Schooling levels										
None or Less than Primary	0.172	0.411	0.075	0.168	0.019	0.042	0.053	0.069	0.482	0.493
Primary School Completed	0.164	0.190	0.208	0.238	0.341	0.324	0.356	0.414	0.279	0.240
High School or Equivalent Completed	0.444	0.285	0.577	0.478	0.516	0.493	0.476	0.437	0.184	0.208
College, University, and higher	0.220	0.114	0.141	0.116	0.124	0.141	0.115	0.080	0.056	0.060
N	2,844	2,862	1,407	1,506	3,328	4,149	12,302	17,065	1,224	1,796

	B. Immigrants in the United States (1999-2010 National Health Interview Survey)									
	India		China		Philippines		Mexico		Dom. Republic	
Variable	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Height (cm.)	174.7	160.2	173.9	161.5	170.1	157.5	171.1	159.8	173.7	162.4
Overweight ($25 \leq BMI < 30$ kg/m^2)	0.337	0.219	0.240	0.070	0.507	0.186	0.464	0.339	0.490	0.290
Obesity ($BMI \geq 30$ kg/m^2)	0.040	0.060	0.020	0.030	0.042	0.043	0.151	0.203	0.083	0.145
Current smoking	0.146	0.010	0.187	0.021	0.261	0.056	0.213	0.051	0.133	0.093
Age	30.5	30.6	31.2	33.0	35.2	33.8	29.3	29.9	32.2	33.1
Schooling levels										
None or Less than Primary	0.002	0.010	0.005	0.014	0.000	0.005	0.102	0.097	0.051	0.079
Primary Completed or Some Junior High	0.000	0.007	0.014	0.025	0.014	0.014	0.265	0.274	0.030	0.046
Some High School, Graduate, or Equivalent	0.136	0.203	0.291	0.320	0.268	0.278	0.578	0.563	0.727	0.718
Some Post Secondary and higher	0.862	0.779	0.690	0.641	0.718	0.704	0.055	0.066	0.192	0.157
N	573	408	213	281	142	216	2,965	2,916	99	216

Table 2. Average treatment effect on the treated (ATT) for immigrants (NHIS) relative to nonmigrants (WHS) from exact matching procedures by country of origin and sex

		A. Men					B. Women				
		Non-migrants		Migrants		ATT	Non-migrants		Migrants		ATT
		mean	n	mean	n		mean	n	mean	n	
India	Smoking	0.287	2022	0.146	569	-0.144 **	0.030	2119	0.010	407	-0.068 **
	Obesity	0.020	1937	0.040	555	-0.052	0.020	1995	0.060	397	-0.038
	Height (cm)	165.3	1947	174.680	517	9.116 **	156.4	2026	160.2	382	4.048 **
	Height (z-score)	0.116	1947	1.035	517	0.893 **	0.259	2026	0.636	382	0.406 **
China	Smoking	0.406	1126	0.187	209	-0.231 **	0.011	1176	0.021	280	-0.118 **
	Obesity	0.011	1124	0.020	200	-0.180 **	0.008	1206	0.030	270	-0.063
	Height (cm)	171.0	1122	173.872	183	2.628 **	159.6	1208	161.5	255	1.918 **
	Height (z-score)	0.263	1122	0.685	183	0.387 **	0.062	1208	0.369	255	0.306 **
Philippines	Smoking	0.489	2037	0.261	142	-0.233 **	0.076	2992	0.056	216	-0.029 **
	Obesity	0.040	1807	0.042	142	-0.028	0.045	2508	0.043	210	-0.024
	Height (cm)	165.8	1934	170.065	133	4.324 **	156.3	2798	157.5	196	1.167 **
	Height (z-score)	0.261	1934	0.884	133	0.631 **	0.064	2798	0.228	196	0.156 **
Mexico	Smoking	0.359	12254	0.213	2942	-0.145 **	0.141	17043	0.051	2904	-0.090 **
	Obesity	0.101	7402	0.151	2696	0.050 **	0.150	10286	0.203	2568	0.054 **
	Height (cm)	167.3	7423	171.062	2440	3.777 **	156.9	10328	159.8	2448	2.828 **
	Height (z-score)	0.033	7423	0.472	2440	0.445 **	0.021	10328	0.392	2448	0.369 **
Dominican Rep.	Smoking	0.094	819	0.137	95	-0.074	0.059	1464	0.093	215	-0.025
	Obesity	0.180	656	0.075	93	-0.160 **	0.105	988	0.145	207	0.004
	Height (cm)	171.8	620	173.713	87	1.987 **	162.7	1013	162.4	206	-0.414
	Height (z-score)	0.113	620	0.282	87	0.177 **	0.118	1013	0.082	206	-0.038

*** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$ † $p < 0.10$