



Health Perceptions in Latin America



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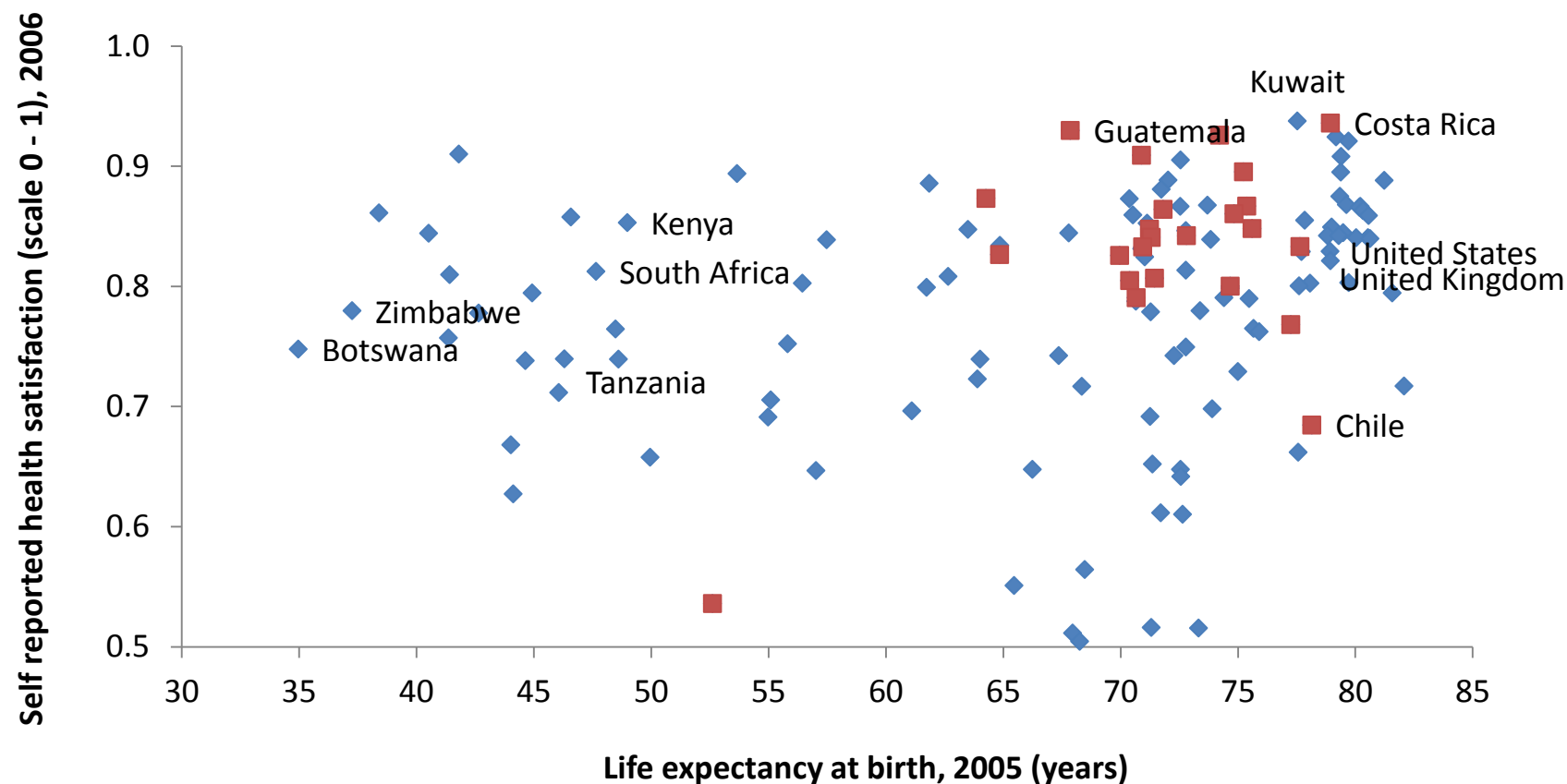
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Perceptions are not a direct reflection of “reality”

	Correlation with objective indicators		Correlation with cultural bias
Life satisfaction	Per capita GDP	0.81	0.29
Satisfaction with standard of living	Per capita GDP	0.65	0.51
Satisfaction with health	Life expectancy	0.21	0.39
Confidence in medical system	Life expectancy	0.29	0.60
Satisfaction with local educational system	Score on PISA test	0.42	0.68
Satisfaction with housing	Public services coverage ¹	0.76	0.41
Availability of affordably priced good homes	Home ownership rate ₂	0.23	0.51

Source: Authors' calculations based on Gallup (2006 and 2007), World Bank (2007) and UNDP (2008). Countries are the unit of observation. Public services are water, electricity and landline phone service. Ownership rates only available for Sub-Saharan Africa and Latin America and the Caribbean.

Self-Reported Health Satisfaction and Life Expectancy



Source: Authors' calculations using Gallup World Poll (2006, 2007) and World Development Indicators (2007).

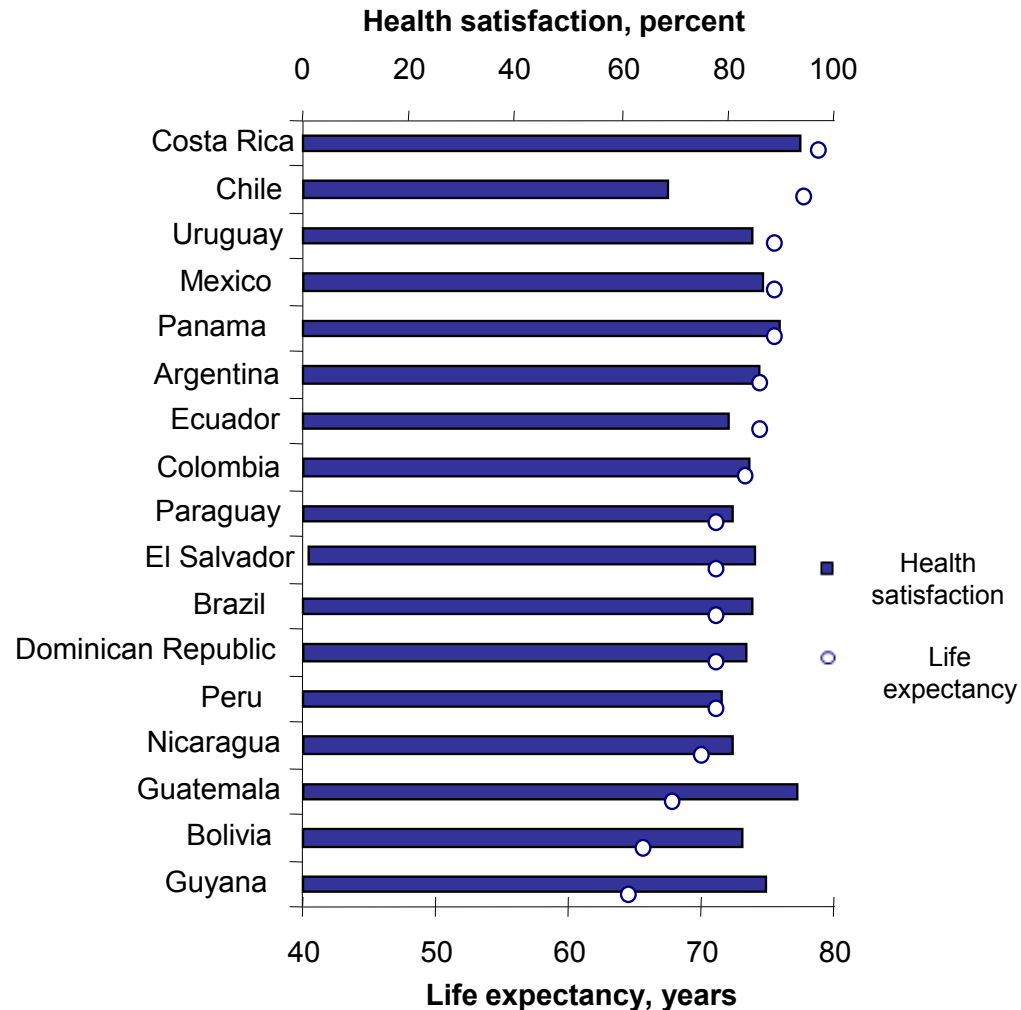
Note: Red dots represent Latin American countries.

Health satisfaction shows the normal gradient *within* countries, not *between* countries

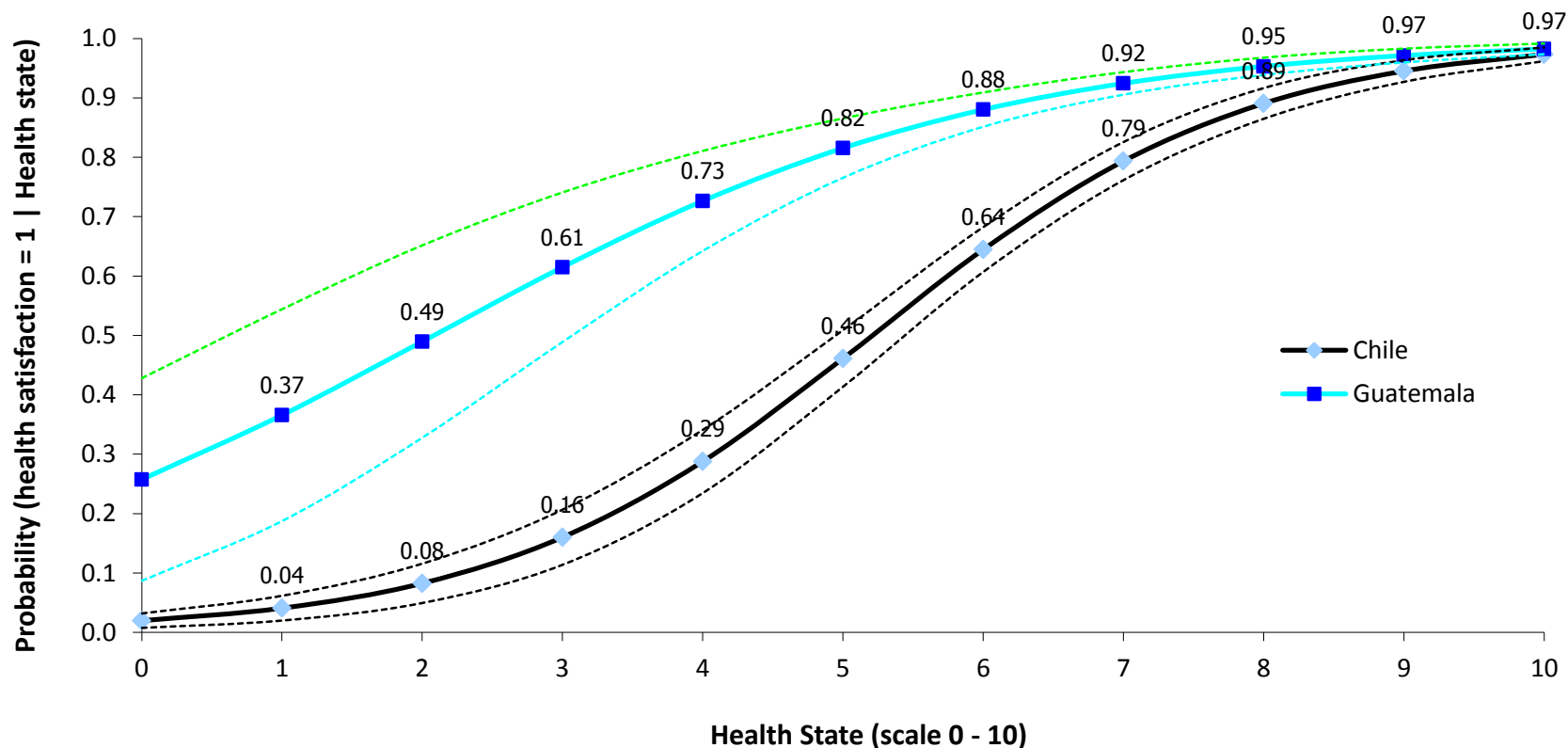
Self-Reported Health Satisfaction, by Country and Income Quintile
(Percentage)

Country	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	AVERAGE BY COUNTRY
Costa Rica	90,6	90,2	91,5	98,4	98,0	93,6
Guatemala	92,3	95,2	91,7	95,9	95,1	93,0
Venezuela	87,7	91,9	98,1	91,3	96,3	92,6
Panama	88,4	90,5	89,0	93,5	91,8	89,5
Honduras	91,7	91,0	86,3	90,8	87,4	88,3
Guyana	90,2	78,9	86,4	90,5	84,8	87,3
Mexico	86,3	82,9	85,3	86,5	89,1	86,7
Belize	94,4	95,0	95,0	72,2	92,9	86,4
Argentina	85,1	83,8	82,7	82,8	92,5	86,0
Uruguay	82,0	79,3	85,8	84,6	84,4	84,8
Brazil	81,5	86,6	89,2	81,1	84,7	84,7
Colombia	77,0	82,4	81,2	89,9	89,6	84,2
El Salvador	79,9	83,3	84,4	84,8	92,9	84,1
Dominican Republic	84,8	78,5	82,5	84,3	89,4	83,3
Bolivia	75,6	84,5	87,2	84,9	88,3	82,6
Paraguay	74,4	77,6	80,2	86,7	84,6	80,7
Nicaragua	72,8	77,5	85,1	78,3	86,4	80,5
Ecuador	72,8	82,6	77,3	84,6	82,9	80,0
Peru	71,3	72,2	79,0	83,2	84,0	79,0
Chile	57,8	58,8	65,2	71,6	79,0	68,4
AVERAGE BY QUINTILE	80,8	82,2	84,0	85,5	88,2	

Perceptions are very influenced by cultural patterns



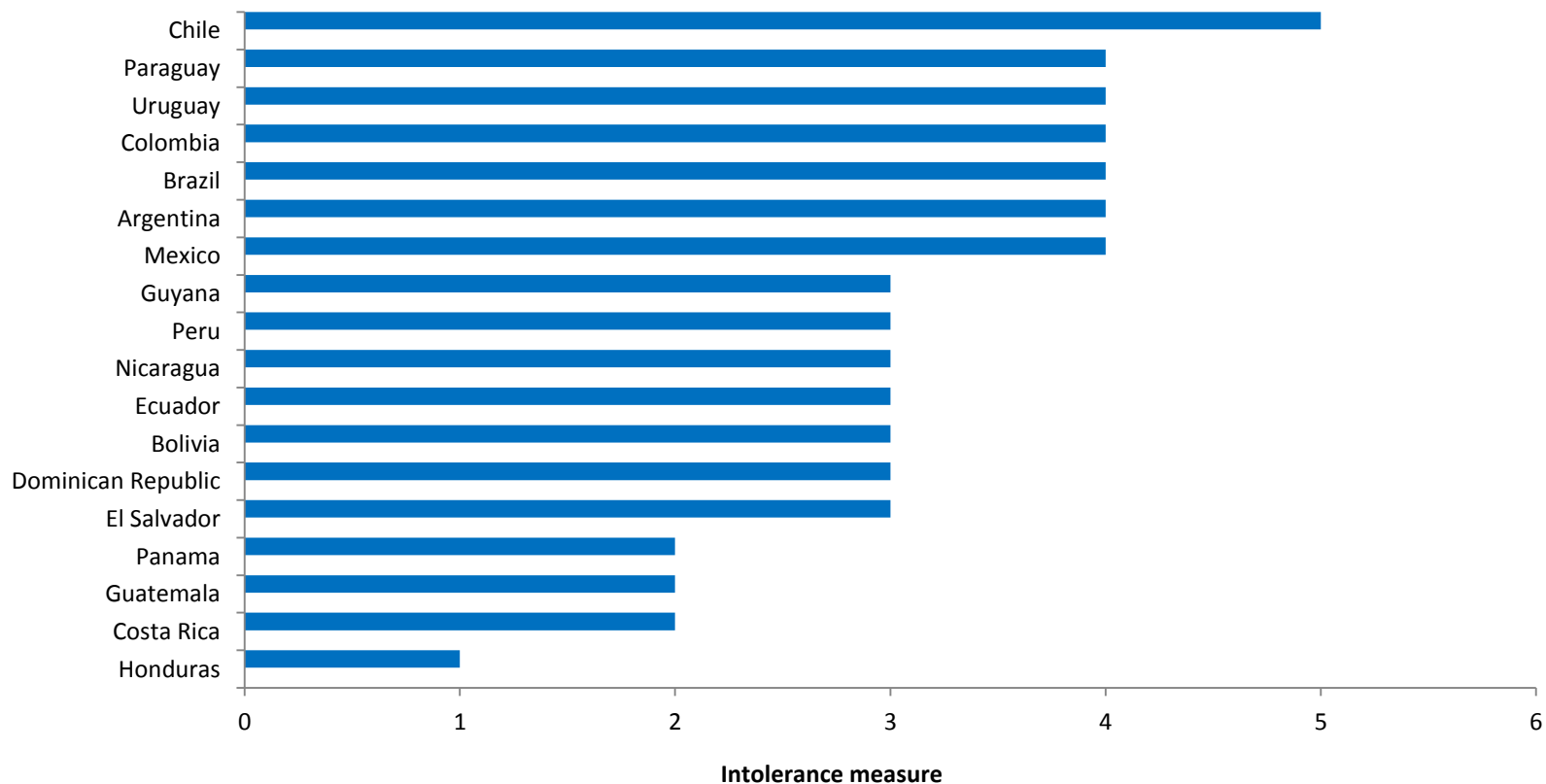
Relation between Self-Reported Health Satisfaction and Health Status, Chile and Guatemala



Source: Authors' calculations using Gallup World Poll (2007).

Note: dotted lines are 95% confidence intervals. The Y-axis predicts the effect of a person's self-reported health status on the likelihood that they will report they are satisfied with their health.

A Measure of Health Intolerance



Source: Authors' calculations using Gallup World Poll (2007).

Note: The intolerance measure is the interval in which the slope of the relation between health satisfaction and health status reaches a maximum.

The Euro quality-of-life set of health questions (EQ-5D)

Set of EQ-5D questions:

I am going to ask you a few simple questions about your health TODAY. Please indicate which statements describe your own health TODAY:

- MOBILITY (your ability to walk around; select only one): I have no problems in walking around / I have some problems in walking around / I am confined to bed.
- SELF CARE (ability to take care of yourself; select only one): I have no problems with self-care / I have some problems washing or dressing myself / I am unable to wash or dress myself.
- USUAL ACTIVITIES (work, study, housework, family, or leisure activities; select only one): I have no problems with performing my usual activities / I have some problems performing my usual activities / I am unable to perform my usual activities.
- PAIN/DISCOMFORT (select only one): I have no pain or discomfort / I have moderate pain or discomfort / I have extreme pain or discomfort.
- ANXIETY/DEPRESSION (select only one): I am not anxious or depressed / I am moderate anxious or depressed / I am extremely anxious or depressed.

Moderate and Extreme Health Conditions (EQ-5D Components) by Income Quintiles

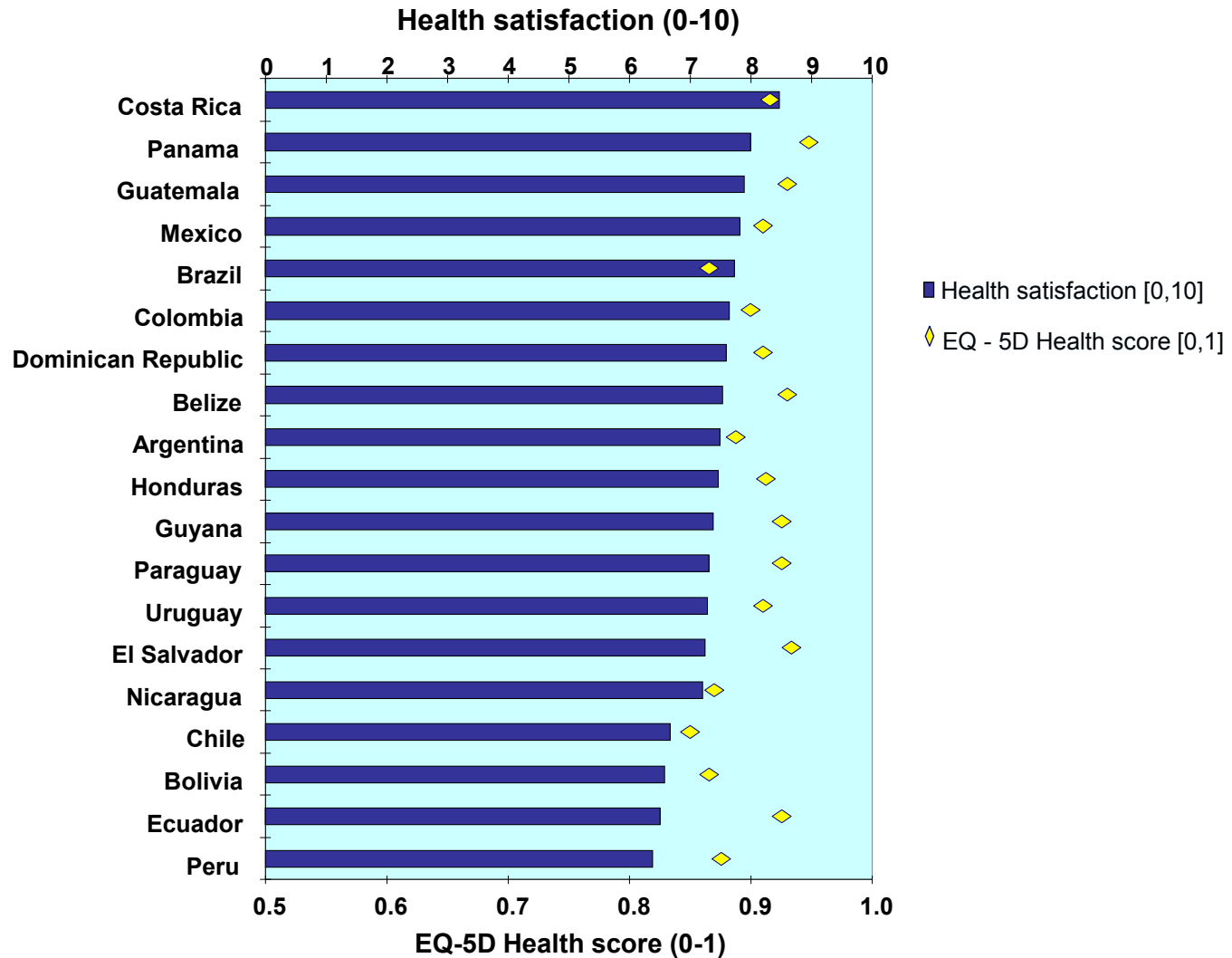
(Percentage of people)

Health Condition	Income quintile					Total
	1	2	3	4	5	
Mobility moderate	13,0	11,1	9,4	8,0	6,9	9,7
Mobility extreme	0,3	0,4	0,3	0,3	0,7	0,4
Self care moderate	4,7	3,4	3,9	2,1	2,4	3,3
Self care extreme	0,1	0,2	0,3	0,2	0,5	0,2
Usual acts moderate	12,8	10,6	8,7	7,4	5,9	9,1
Usual acts extreme	0,6	0,6	0,5	0,3	0,5	0,5
Pain moderate	26,9	25,6	23,2	21,0	18,2	23,1
Pain extreme	4,6	3,1	2,6	2,8	1,4	2,9
Anxiety moderate	18,8	18,7	16,7	15,2	14,4	16,8
Anxiety extreme	3,5	2,8	2,4	1,9	2,2	2,6

Computation and use of an EQ-5D score

- ▶ The responses to the set of EQ-5D questions can be used to produce a single index value for health status, which may be calculated by applying a formula that essentially attaches a value to each of the possible **combinations** of answers.
- ▶ This formula is based on the valuation of EQ-5D health states using the time trade-off method in general population samples. Shaw et al (2005) have developed a scoring algorithm on those values.
- ▶ With the system of weights implied in this algorithm, the EQ-5D index range from -0.11 to 1.0 on a scale where 0.0 = death and 1.0 = perfect health.
- ▶ We make use of the algorithm to calculate the EQ-5D score by individual, and with that basis we compute the average by country.
- ▶ EQ-5D indices are used in the measurement and valuation of health status (Brooks et al 2003).
- ▶ EQ-5D indices are recommended to assess the effectiveness of health interventions.

Health satisfaction and EQ-5D health scores



How health conditions impact satisfaction

Basic Results 1

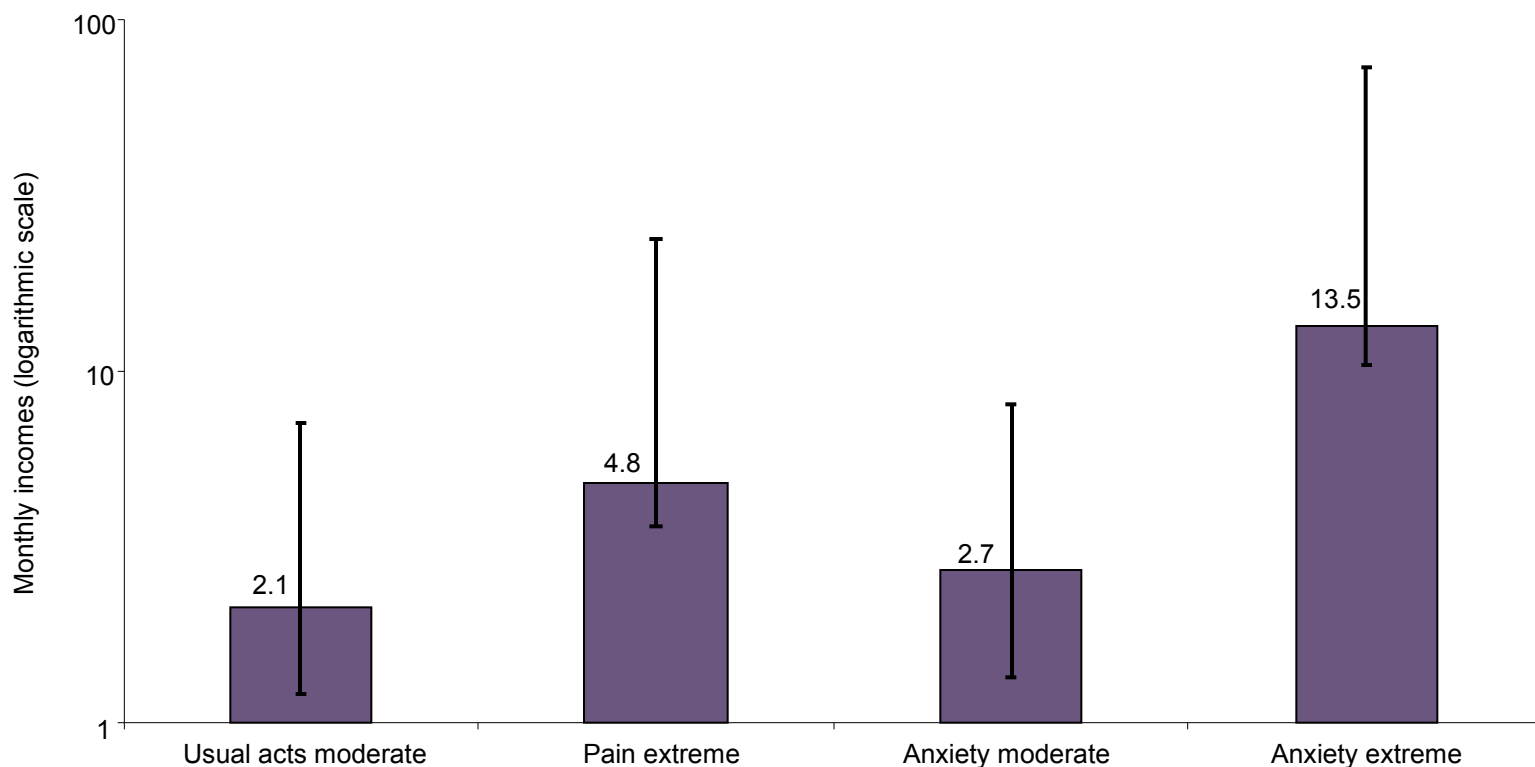
	Health Satisfaction 0-10		Life satisfaction 0-10	
	(1)	(2)	(3)	(4)
Log monthly per capita household income, US\$ PPP	0.147***	0.155***	0.326***	0.302***
Psychological traits score		0.108***		0.393***
Mobility moderate	-0.448***	-0.460***	0.058	0.086
Mobility extreme	-0.792**	-0.032	0.216	0.091
Self-care moderate	-0.198	-0.142	0.026	0.157
Self-care extreme	-0.13	-0.236	0.283	0.281
Usual activities moderate	-0.726***	-0.690***	-0.325***	-0.230*
Usual activities extreme	-0.994**	-1.136*	-0.804*	-0.498
Pain moderate	-1.027***	-1.016***	-0.125	-0.135
Pain extreme	-2.185***	-2.143***	-0.451**	-0.477**
Anxiety moderate	-0.540***	-0.480***	-0.459***	-0.303***
Anxiety extreme	-1.026***	-0.883***	-0.842***	-0.786***
Observations	12,335	8,249	12,279	8,250
Countries	19	17	19	17

*** p<0.01, ** p<0.05, * p<0.1

Equivalent Incomes Required to Compensate for Health Conditions in EQ5D

Income Equivalences of Health Conditions in EQ5D

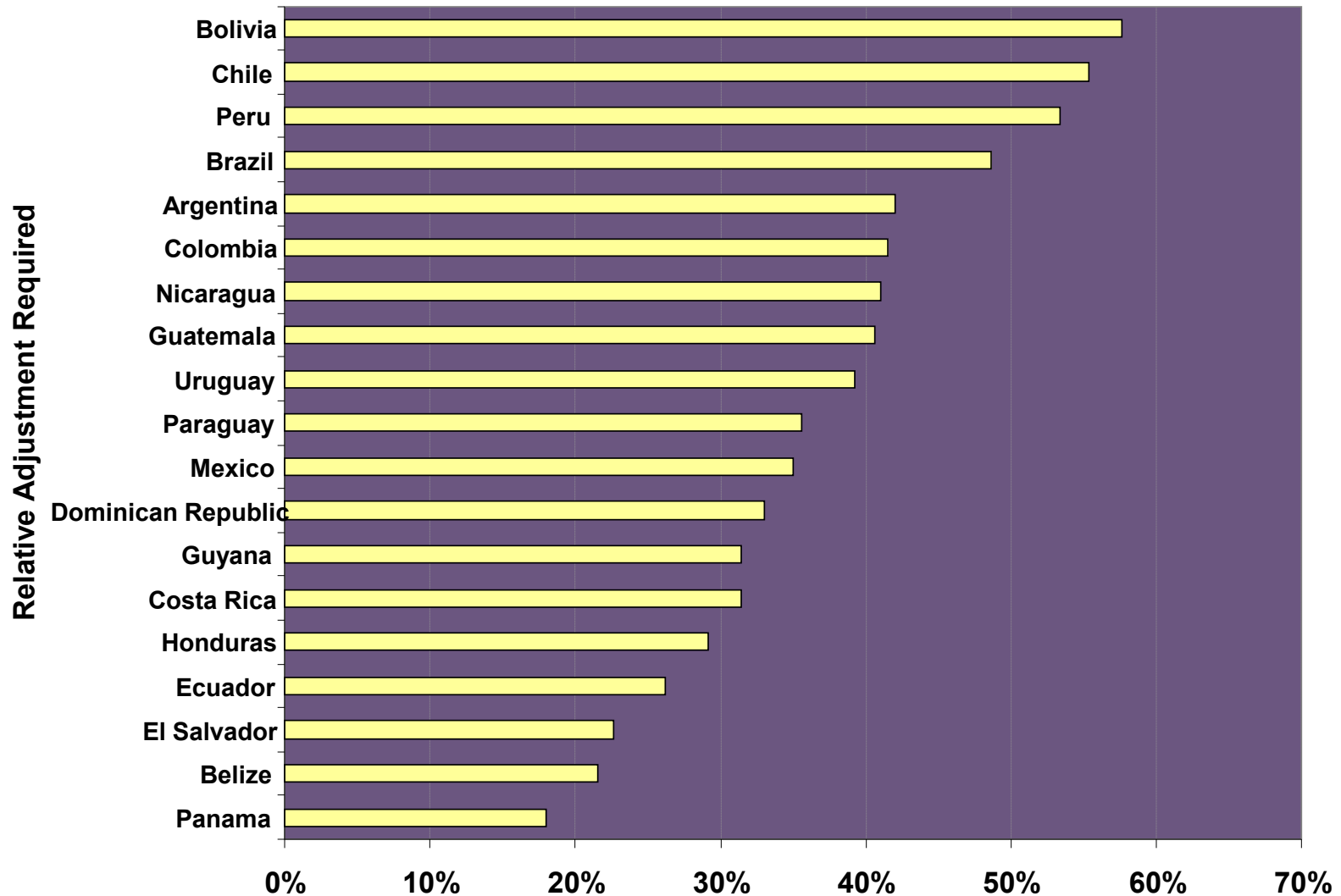
In monthly incomes. Comparison income: US\$ 93.7 PPP



Source : Authors' calculations based in Gallup 2006 and 2007.

Note : direct equivalences are based on the effect of each health component on life satisfaction. The EQ5D equivalences are based on the effect of changes in the EQ5D index, derived from changes in each health component. Vertical bars represent a 95% confidence interval.

The Life Satisfaction Cost of Health Problems (as percent of GDP)



Surveys of health conditions are a potent source of information to assess health in general populations, identify health priorities and improve health expenditure decisions.

Sources

- ▶ Lora, Eduardo. Health Perceptions in Latin America. *Health Policy and Planning* 2011;1–15
- ▶ Graham, Carol, Lucas Higuera and Eduardo Lora. Which health conditions cause the most unhappiness? *Health Economics*, 2010, Vol. 20, issue 12.
- ▶ Lora, Eduardo (coordinator). *Beyond Facts: Understanding Quality of Life*. Development in the Americas, DRCLAS Harvard and IDB. 2008.

Appendix: Regression Tables

Country-Level Correlates of Health Satisfaction

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	National average health satisfaction [0,1]							
Log of income per capita, 2005	0,0191 *	0,0157	0,0169 *	0,0151	0,0235	0,0138	0,0413 ***	0,0226
	(2,51)	(1,60)	(2,58)	(1,57)	(1,95)	(1,05)	(3,60)	(1,72)
Income per capita growth rate, 2000-2005			-0,0174 ***	-0,0067 *	-0,0180 ***	-0,0066 *	-0,0100 ***	-0,0043
			(6,58)	(2,24)	(6,89)	(2,12)	(3,75)	(1,44)
Life expectancy at birth, 2005					0,0033 *	0,0035	0,0018	0,0017
					(2,11)	(1,88)	(1,23)	(0,96)
Infant mortality rate, 2005					0,0012 *	0,0004	0,0005	-0,0002
					(2,31)	(0,82)	(1,06)	(0,36)
Absolute distance from the Equator line							-0,2282 ***	-0,1785 *
							(4,78)	(2,26)
Share of non-Christian and non-Muslim population							-0,0009 ***	-0,0010 ***
							(3,75)	(3,51)
Constant	0,6254 ***	0,6981 ***	0,6978 ***	0,7125 ***	0,3729 *	0,4452 *	0,4253	0,6125 ***
	(9,43)	(6,80)	(12,03)	(7,05)	(2,55)	(2,47)	(3,02)	(3,55)
N	121	121	121	121	117	117	116	116
R2 Adjusted	0,04	0,43	0,29	0,45	0,33	0,47	0,49	0,54
Regional dummies included	NO	YES	NO	YES	NO	YES	NO	YES

Self-Reported Health Satisfaction, Self-Reported Health Status, Income Level and Home Conditions

Variable	(1) Health satisfaction [0,1]	(2) Health satisfaction [0,1]	(3) Health state [0,10]	(4) Health state [0,10]	(5) Health satisfaction [0,1]	(6) Health satisfaction [0,1]	(7) Health state [0,10]	(8) Health state [0,10]
Sex	0,2999 *** [0.0517]	0,3121 *** [0.0519]	0,2455 *** [0.0316]	0,2554 *** [0.0318]	0,3052 *** [0.0516]	0,3184 *** [0.0517]	0,2526 *** [0.0316]	0,2631 *** [0.0318]
Age	-0,0726 *** [0.0081]	-0,0736 *** [0.0081]	-0,039 *** [0.0053]	-0,0392 *** [0.0053]	-0,0722 *** [0.0080]	-0,0733 *** [0.0081]	-0,0388 *** [0.0053]	-0,039 *** [0.0053]
Age ²	0,0003 *** [0.0001]	0,0004 *** [0.0001]	0.0000 [0.0001]	0.0000 [0.0001]	0,0003 *** [0.0001]	0,0003 *** [0.0001]	0.0000 [0.0001]	0.0000 [0.0001]
Married	0.0874 [0.0656]	0.0834 [0.0657]	0,0833 ** [0.0409]	0,0847 ** [0.0410]	0.0884 [0.0655]	0.0840 [0.0656]	0,083 ** [0.0408]	0,085 ** [0.0410]
Divorced	0.0049 [0.1052]	0.0198 [0.1057]	0.0030 [0.0729]	0.0148 [0.0731]	-0.0025 [0.1047]	0.0128 [0.1053]	-0.0039 [0.0729]	0.0095 [0.0731]
Widow	0.0334 [0.1096]	0.0403 [0.1099]	0.0145 [0.0837]	0.0095 [0.0837]	0.0234 [0.1096]	0.0311 [0.1099]	0.0044 [0.0836]	0.0013 [0.0836]
Zone	0.0198 [0.0534]	-0.0411 [0.0556]	0,1366 *** [0.0338]	0,0853 ** [0.0351]	0.0393 [0.0529]	-0.0278 [0.0552]	0,1571 *** [0.0337]	0,0998 *** [0.0349]
Water		0.1232 [0.0841]		0.0606 [0.0591]		0.1288 [0.0836]		0.0704 [0.0590]
Electricity		0.0674 [0.1298]		0,2945 *** [0.0967]		0.0818 [0.1290]		0,3171 *** [0.0967]
Telephone		0,1977 *** [0.0600]		0,1403 *** [0.0359]		0,2118 *** [0.0601]		0,154 *** [0.0359]
Log of household per capita income	0,2352 *** [0.0250]	0,2054 *** [0.0263]	0,2666 *** [0.0171]	0,2424 *** [0.0179]				
Quintile					0,1549 *** [0.0184]	0,1319 *** [0.0193]	0,1699 *** [0.0115]	0,1516 *** [0.0121]
Observations	13733	13677	13159	13101	13749	13693	13176	13118
r ² _p	0.110	0.111	0.0564	0.0571	0.109	0.110	0.0556	0.0564
Country fixed effects	YES	YES	YES	YES	YES	YES	YES	YES

Moderate and Extreme Health Conditions (EQ-5D Components): Effect of Income

	Health Condition									
	Moderate					Extreme				
	Mobility (1)	Self-care (2)	Usual acts (3)	Pain (4)	Anxiety (5)	Mobility (6)	Self-care (7)	Usual acts (8)	Pain (9)	Anxiety (10)
Log of household per capita income	-0,2596 *** [0.0326]	-0,2186 ** [0.0524]	-0,2997 *** [0.0334]	-0,185 *** [0.0227]	-0,142 *** [0.0246]	0,333 ** [0.1641]	0,6083 *** [0.1963]	-0.0757 [0.1325]	-0,365 *** [0.0503]	-0,205 *** [0.0597]
N	13177	13183	13178	13186	13066	12078	8965	13084	13186	13066
Pseudo R2	0.162	0.143	0.135	0.0909	0.0527	0.0839	0.185	0.147	0.123	0.0570
Country fixed effects	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls at individual level	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Self-Reported Health Satisfaction, Self-Reported Health Status and Moderate/Extreme Health Conditions (EQ-5D Components)

Dependent variable		(1) Health satisfaction [0,1]	(2) Health state [0,10]	(3) Health satisfaction [0,1]	(4) Health state [0,10]
Income quintile				0,0590 ** (2,97)	0,0977 *** (8,48)
Health conditions	Mobility moderate	-0,3580 *** (4,55)	-0,4536 *** (7,43)	-0,3428 *** (4,02)	-0,4354 *** (6,49)
	Mobility extreme	-0,0820 (0,24)	-0,6293 (1,88)	0,1428 (0,39)	-0,3577 (1,18)
	Self care moderate	-0,1061 (0,94)	-0,2878 ** (3,15)	-0,0895 (0,69)	-0,2073 * (2,03)
	Self care extreme	-0,4147 (1,00)	-0,1165 (0,37)	-0,5195 (1,14)	0,2206 (0,60)
	Usual activity moderate	-0,7093 *** (8,98)	-0,7114 *** (11,21)	-0,7333 *** (8,51)	-0,7318 *** (10,54)
	Usual activity extreme	-0,3782 (1,21)	-0,8306 ** (3,16)	-0,5249 (1,55)	-0,9355 *** (3,41)
	Pain moderate	-1,1825 *** (20,26)	-1,1080 *** (28,25)	-1,1498 *** (18,11)	-1,0962 *** (24,55)
	Pain extreme	-1,8608 *** (15,17)	-2,1753 *** (18,39)	-1,8702 *** (14,11)	-2,2157 *** (19,69)
	Anxiety moderate	-0,4635 *** (7,90)	-0,6045 *** (15,03)	-0,4940 *** (7,59)	-0,6374 *** (14,11)
	Anxiety extreme	-0,7002 *** (5,74)	-0,9284 *** (8,03)	-0,7937 *** (5,79)	-0,9977 *** (8,99)
N		17.009	17.132	12.898	12.997
Pseudo R2		0,188	0,0769	0,195	0,081
Country fixed effects		NO	NO	NO	NO
Controls at individual level		YES	YES	YES	YES