



W9: RECENT EXPERIENCES USING THE EUROQOL EQ-5D INSTRUMENT IN LATIN AMERICA: THE 3L&5L; PUBLIC HEALTH AND ECONOMIC EVALUATIONS; NEWER TIME TRADE OFF VARIANTS AND DISCRETE CHOICE EXPERIMENTS

The Chilean Experience



DISCLAIMER: The views and opinions expressed in this presentation are those of the authors and do not necessarily represent official policy or position of the EuroQol. Source of Funding: EQ Proyect 20170470

Cuestionario EQ-5D

The EQ-5D-3L descriptive system should be scored as follows:

By placing a tick in one box in each group, please indicate which statements best describe your health today.

Mobility	
I have no problems in walking about	<input checked="" type="checkbox"/>
I have some problems in walking about	<input type="checkbox"/>
I am confined to bed	<input type="checkbox"/>
Self-Care	
I have no problems with self-care	<input checked="" type="checkbox"/>
I have some problems washing or dressing myself	<input type="checkbox"/>
I am unable to wash or dress myself	<input type="checkbox"/>
Usual Activities (e.g. work, study, housework, family or leisure activities)	
I have no problems with performing my usual activities	<input type="checkbox"/>
I have some problems with performing my usual activities	<input checked="" type="checkbox"/>
I am unable to perform my usual activities	<input type="checkbox"/>
Pain/Discomfort	
I have no pain or discomfort	<input type="checkbox"/>
I have moderate pain or discomfort	<input checked="" type="checkbox"/>
I have extreme pain or discomfort	<input type="checkbox"/>
Anxiety/Depression	
I am not anxious or depressed	<input type="checkbox"/>
I am moderately anxious or depressed	<input checked="" type="checkbox"/>
I am extremely anxious or depressed	<input type="checkbox"/>

Levels of perceived problems are coded as follows:

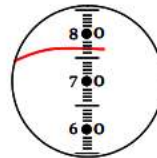
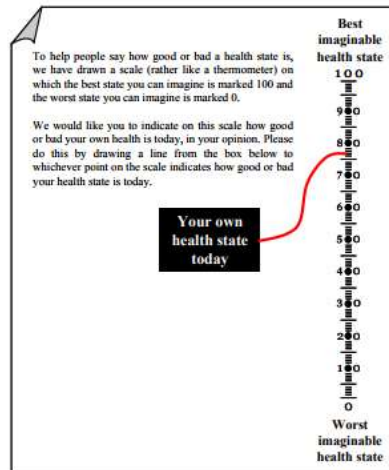
- Level 1 is coded as a '1'
- Level 2 is coded as a '2'
- Level 3 is coded as a '3'

All: There should be only one response for each dimension.

This example identifies the state 11232.

Cuestionario EQ-5D

The EQ VAS should be scored as follows:



For example this response should be coded as 77



Even though the line does not cross the VAS this response can still be scored by drawing a horizontal line from the end point of the response to the VAS. In this example the response should be coded as 77

EQ-5D – 2006/2007 IADB - Gallup World Survey

- Guatemala es uno de los países con los niveles mas altos de satisfacción con su salud, a pesar de sus deficiencia en indicadores de mortalidad, en especial en su población indígena. Chile, por otra parte, es de los que menos satisfechos están con su salud, a pesar de tener objetivamente unos de los mejores indicadores de salud de la región.
- Correlación entre satisfacción con la salud y estado de salud es de 78% y con EQ-5D index, 68% .

Table 1. Health Perceptions - Three Alternative Measures (National averages)

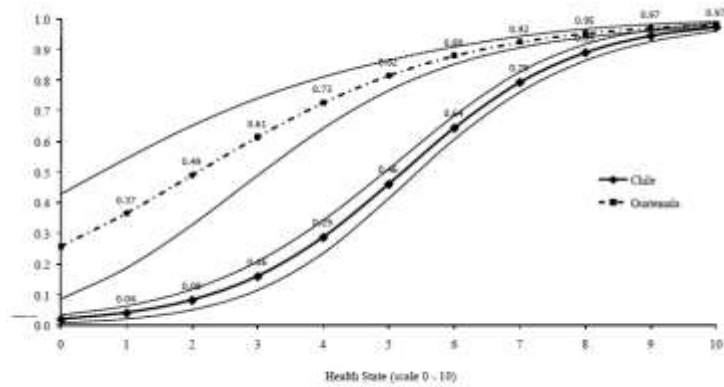
Country	Health satisfaction [0-1]	Health status [0-100]	EQ-5D Health score [0-1]
Costa Rica	0.94	84.7	0.91
Guatemala	0.95	7.89	0.94
Venezuela	0.95	n.a.	n.a.
Jamaica	0.91	n.a.	n.a.
Panama	0.90	8.01	0.96
Indonesia	0.88	7.47	0.92
Oman	0.87	7.38	0.93
Mexico	0.87	7.81	0.92
Bolivia	0.86	7.51	0.94
Argentina	0.86	7.58	0.96
Uruguay	0.85	7.29	0.92
Brazil	0.85	7.74	0.88
Colombia	0.84	7.65	0.91
El Salvador	0.84	7.24	0.94
Paraguay	0.83	n.a.	n.a.
Dominican Republic	0.83	7.68	0.93
Bolivia	0.83	8.57	0.88
Tanzania and Tobago	0.83	n.a.	n.a.
Paraguay	0.81	7.11	0.90
Nicaragua	0.80	7.29	0.89
Ecuador	0.80	8.51	0.93
Peru	0.79	8.38	0.89
Chile	0.77	n.a.	n.a.
Chile	0.68	8.08	0.86
Haiti	0.54	n.a.	n.a.

Notes: 2006 data for Jamaica, Puerto Rico, Trinidad and Tobago, Cuba and Haiti 2007 data for the other countries.
n.a. - data were available.
Source: Author's calculations using Gallup World Poll (2007)

Eduardo Lora. Health Perceptions in Latin America. IDB WORKING PAPER SERIES No. IDB-WP-290, December 2011.

EQ-5D - 2007 IADB Quality of life Survey

Figure 1. Relation between Health Satisfaction and Self-Rated 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.

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5

EQ-5D - 2007 IADB Quality of life Survey

Table 4A. Moderate and Extreme Health Conditions (EQ - 5D Components), Men and Women Percentage of people

Men and women	Aged 15 to 35	Between 36 and 55 years	Aged 55 to 75	Over age 75	Total
Mobility moderate	3.6	8.5	24.6	37.4	9.6
Mobility extreme	0.2	0.2	0.8	1.3	0.4
Self care moderate	1.5	2.9	8.7	15.1	3.5
Self care extreme	0.1	0.2	0.4	1.7	0.3
Usual acts moderate	3.5	8.7	22.0	31.6	9.0
Usual acts extreme	0.3	0.3	1.0	4.1	0.5
Pain moderate	13.6	24.6	39.7	44.2	22.2
Pain extreme	1.3	2.6	6.0	10.4	2.8
Anxiety moderate	12.8	17.2	22.6	19.9	16.0
Anxiety extreme	1.9	2.9	3.6	3.9	2.5

Source: Authors' calculations using Gallup World Poll data.

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6



EQ-5D in Chile



Background

- Use of web application of EQ-5D online - Superintendency of Health
<http://www.supersalud.gob.cl/568/w3-article-4102.html>
- Validation study of EQ-5D/SF-36 – Superintendency of Health
- 1st EQ-5D valuation study 2008 – Superintendency of Health
- 2nd EQ-5D valuation study 2013/2014 – University of Los Andes
- Individual research presented in scientific conferences, student thesis, etc.



Guía Metodológica para la Evaluación Economía de Intervenciones de Salud en Chile (2013)



“En los ACU la medida de outcome genérica recomendada son los QALY, no sólo por su mayor validación metodológica, sino además porque para Chile existen **valoraciones sociales para los estados de salud con el instrumento EQ-5D que fueron recogidas en 2008** (Superintendencia de Salud, 2009) y recientemente revisadas para efecto de su uso en evaluación económica (Zárate et al. 2011)”.

Manual Metodológico Evaluación Tecnologías en Salud – IETS 2014



“El IETS recomienda las siguientes pautas para el cálculo de los AVAC, en particular para la estimación de las ponderaciones de utilidad: para describir los estados de salud, se recomienda usar el sistema EQ-5D-3L, empleando para su **valoración las ponderaciones de utilidad calculadas para la población de latinos en EE.UU. en 2008**”.

Web application of EQ-5D online - Superintendency of Health (2008)



EQ-5D – Valoraciones Sociales Chile 2008

- Se aplicó un cuestionario de valoración que incluyó ejercicios de ranking, VAS y TTO a una muestra probabilística de individuos ≥ 20 años residentes de la R.M. ($n=2000$). El trabajo de campo se realizó entre Oct-Nov 2008.
- Protocolo utilizado correspondió al estudio de preferencias sociales de Estados Unidos (Es español, agradecimientos a Stephen Coons)
- Se estimaron ponderadores de utilidad para 42 estados de salud en forma directa a través del método TTO. Se ajustaron un número de modelos de regresión lineales y aleatorios a estas valoraciones, de los cuales se eligió al que presentaba una mejor bondad de ajuste y parsimonia



EQ-5D – Valoraciones Sociales Chile 2008

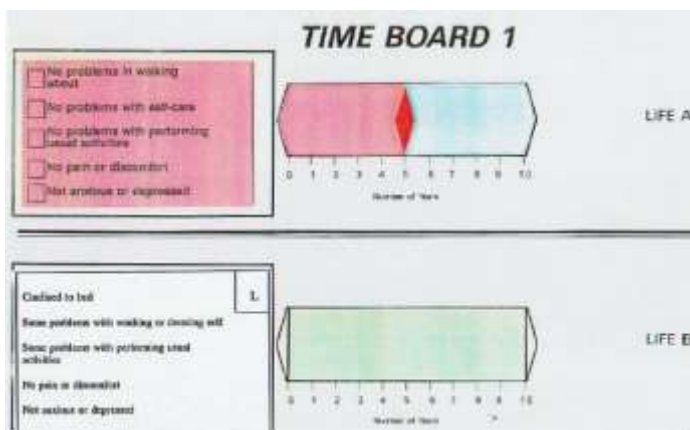
- El método de equivalencia temporal (TTO) produce valoraciones que se basan en decisiones hechas bajo condiciones de certeza (conocimiento cierto de alguna cosa y que excluye toda duda).
- El protocolo TTO consiste esencialmente en proveer en forma continua un set de dos opciones para un determinado estado de salud a valorar, hasta que el encuestado encuentra un punto en el cual es indiferente a ambas alternativas.
- Los estados de salud a valorar pueden ser evaluados por los encuestados como mejores o peores que la muerte.



13

EQ-5D – Valoraciones Sociales Chile 2008

- Tablero TTO



14

EQ-5D – Valoraciones Sociales Chile 2008

- Las variables dummy consideradas relevantes en el modelo fueron las siguientes:
 - 10 variables dummy básicas EQ-5D (ej. M2, M3, Sc2, Sc3, Ua2, Ua3, Pd2, Pd3, Ad2, and Ad3)
 - Variables de interacción
 - N2: si existe alguna dimensión en nivel 2;
 - C2: numero de dimensiones en nivel 2;
 - C2sq: cuadrado del numero de dimensiones en nivel 2;
 - N3: si existe una dimensión en nivel 3;
 - C3: numero de dimensiones en nivel 3;
 - C3sq: cuadrado del numero de dimensiones en nivel 3;
 - X2: si hay dos o mas dimensiones en niveles 2 o 3;
 - X3: si hay 3 o mas dimensiones en niveles 2 o 3;
 - X4: si hay 4 o mas dimensiones en niveles 2 o 3;
 - X5: si hay 5 dimensiones en niveles 2 o 3.
- Finalmente, a través del modelo elegido se extrapolaron los valores para la totalidad de estados de salud generados por el sistema EQ-5D (243).

15

EQ-5D – Valoraciones Sociales Chile 2008

Table 1 Socio-demographic and self-reported health characteristics of the study sample and Chile

	Metropolitan Region	Metropolitan Region _{wgt}	Chile
Gender, % (n)			
female	62.0 (1239)	52.5 (1051)	51.2 (5.8189.13) †
male	38.0 (761)	47.5 (949)	48.8 (5.555.816) †
Age, % (n)			
Mean (SE)	46.83 (0.4)	43.46 (0.4)	43.7 (16.1) †
20 - 44 years	47.6 (953)	56.2 (1125)	55.8 (6.345.981) †
45 - 64 years	35.0 (699)	31.5 (629)	31.5 (3.587.621) †
65+ years	17.4 (348)	12.3 (246)	12.7 (1.441.127) †
Educational attainment, % (n)			
< 8 years	15.8 (316)	13.1 (262)	28.5 (2.834.392) ††
8 - 12 years	52.4 (1048)	52.2 (1045)	47.1 (4.687.127) ††
13+ years	30.6 (611)	33.4 (669)	24.4 (2.424.701) ††

Notes

†Source: Population figures were estimated for June 2008, National Statistics Institute (INE)

††Source: 2002 National Census, National Statistics Institute (INE)

††† Source: 2005 EQ-5D health survey, Superintendency of Health

SE: Standard Error

16

EQ-5D – Valoraciones Sociales Chile 2008

Table 1 (Cont) Socio-demographic and self-reported health characteristics of the study sample and Chile

	Metropolitan Region	Metropolitan Region _{wgt}	Chile
Self-reported health problems, % (n)			
Mobility	20.8 (416)	17.3 (347)	15.4†††
Self-care	8.6 (173)	7.7 (153)	3.9†††
Usual activities	16.0 (321)	14.0 (281)	17.1†††
Pain/discomfort	44.2 (883)	39.6 (793)	50.8†††
Anxiety/depression	33.9 (678)	30.9 (618)	42.3†††
Self-rated VAS, % (n)			
Mean (SE)	73.82(0.46)	75.68(0.46)	75.42 (0.3) †††
81-100	37.8 (757)	41.8 (837)	42.3†††
61-80	33.4 (667)	33.3 (666)	32.2†††
41-60	21.4 (429)	18.4 (368)	18.2†††
21-40	4.7 (94)	4.1 (82)	6.3†††
0-20	2.6 (53)	2.3 (47)	1.0†††

Notes

†Source: Population figures were estimated for June 2008, National Statistics Institute (INE)

††Source: 2002 National Census, National Statistics Institute (INE)

††† Source: 2005 EQ-5D health survey, Superintendency of Health

SE: Standard Error

17

EQ-5D – Valoraciones Sociales Chile 2008

Table 2 Parameter estimates and fit statistics for alternatives random effects (RE) and ordinary least squares (OLS) regression models in the Chilean valuation study

	Basic (RE)		N3 (RE)		C3sq (RE)		C3sq + X5 (RE)		C3sq (OLS)		C3sq + X5 (OLS)	
	Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P	Coefficient	P
MO2	0.128 (0.007)		0.124 (0.007)		0.114 (0.007)		0.108 (0.008)		0.121 (0.010)		0.115 (0.010)	
MO3	0.310 (0.010)		0.300 (0.010)		0.452 (0.012)		0.448 (0.012)		0.454 (0.017)		0.449 (0.017)	
SC2	0.130 (0.007)		0.136 (0.007)		0.126 (0.007)		0.118 (0.008)		0.129 (0.010)		0.121 (0.010)	
SC3	0.312 (0.010)		0.289 (0.010)		0.425 (0.012)		0.421 (0.012)		0.431 (0.016)		0.428 (0.016)	
UA2	0.178 (0.008)		0.130 (0.008)		0.135 (0.008)		0.126 (0.008)		0.129 (0.010)		0.119 (0.011)	
UA3	0.342 (0.010)		0.250 (0.011)		0.402 (0.010)		0.411 (0.010)		0.404 (0.014)		0.413 (0.014)	
PD2	0.107 (0.008)		0.125 (0.008)		0.116 (0.008)		0.110 (0.008)		0.108 (0.009)		0.103 (0.009)	
PD3	0.301 (0.009)		0.251 (0.009)		0.403 (0.010)		0.398 (0.010)		0.403 (0.013)		0.397 (0.013)	
AD2	0.094 (0.007)		0.099 (0.007)		0.105 (0.007)		0.100 (0.007)		0.114 (0.010)		0.108 (0.010)	
AD3	0.246 (0.008)		0.196 (0.009)		0.360 (0.010)		0.353 (0.010)		0.367 (0.013)		0.359 (0.014)	
Intercept	0.107 (0.010)		0.070 (0.010)		0.080 (0.010)		0.092 (0.012)		0.083 (0.008)		0.096 (0.008)	
N3			0.184 (0.011)									
C3sq					-0.025 (0.001)		-0.027 (0.001)		-0.026 (0.002)		-0.028 (0.002)	
X5							0.049 (0.013)				0.052 (0.017)	0.003
R ² overall	0.337		0.342		0.344		0.344		0.346		0.346	
MAE	0.048		0.036		0.020		0.017		0.021		0.016	
No. (of 42)>=0.025	30		27		18		10		18		10	
No. (of 42)>=0.05	17		12		2		1		2		2	
No. (of 42)>=0.10	4		0		0		0		0		0	

Note: all coefficients significant at P<0.001 unless otherwise stated. Standard errors are given in parenthesis. R² overall represents the correlation between observed and predicted TTO values.

EQ-5D – Valoraciones Sociales Chile 2008

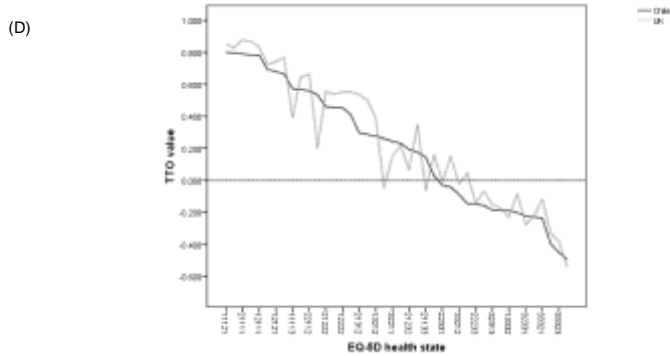


Figure 1 Comparison of observed TTO values in Chile versus Argentina (A), Spanish-speaking Hispanics US (B), Spain (C) and the UK⁵ (D). Note: Comparisons are based on 42 EQ-5D health states with the exemption of Argentina where only 22 health states were valued

19

EQ-5D – Valoraciones Sociales Chile 2008

- El estudio generó un sistema de ponderadores por preferencia para los estados de salud EQ-5D en Chile.
- El modelo de regresión elegido $C3sq+X5$ (RE) produce un set de valoraciones con buena bondad de ajuste, error absoluto promedio (MAE) de 0.017 y sólo un error de predicción mayor a 0.05 en magnitud absoluta.
- No fue posible establecer si existe una variabilidad significativa en las valoraciones de los habitantes del resto de las regiones en Chile

20

EQ-5D Social Value Set 2013/2014

- Application of a questionnaire that includes ranking, VAS and Time Trade-off (TTO) methods to a probabilistic sample of individuals who were 18 years or older living in all 15 geographical regions of Chile (n=1695). The field work took place during the August 2013-January 2014 period.
- Utility weights for a selected group of 31 health states were calculated directly by the application of the TTO methodology.
- Several random effect and ordinary least square models were fitted to these valuations. The final model was chosen applying criteria of 1) parsimony 2) goodness of fit and 3) high prediction capacity.

EQ-5D Social Value Set 2013/2014

Table 1 Socio-demographic characteristics of the study sample and Chile

	Chile Survey	Chile _{wgt} Survey	Chile
Gender, %			
female	65.9	51.8	51.0 †
male	34.1	48.2	49.0 †
Age, %			
18 - 44 years	43.1	55.6	55.3 †
45 - 64 years	35.6	30.9	31.6 †
65+ years	21.3	13.5	13.1 †
Educational attainment, %			
< 8 years	23.3	18.9	28.5 ††
8 - 12 years	45.7	46.8	47.1 ††
13+ years	31.0	34.3	24.4 ††

Notes :

†Source: Population figures were estimated for June 2013, National Statistics Institute (INE)

††Source: 2002 National Census, National Statistics Institute (INE)

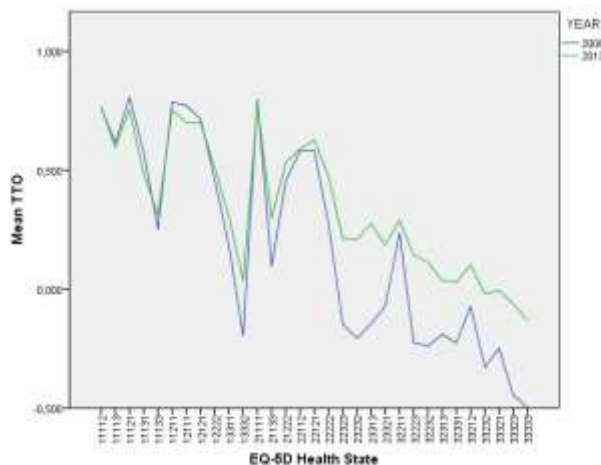
EQ-5D Social Value Set 2013/2014

Table 2 Parameter estimates and fit statistics for alternatives ordinary least squares (OLS) regression models in the Chilean valuation study

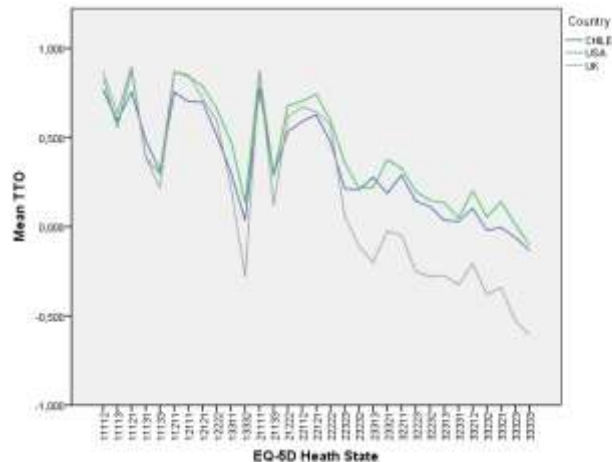
	Basic		N3		N3X2	
	Coefficient	P	Coefficient	P	Coefficient	P
MO2	0.029 (0.010)	0.005	0.028 (0.010)	0.007	0.013 (0.011)	0.232
MO3	0.235 (0.013)		0.212 (0.013)		0.213 (0.013)	
SC2	0.076 (0.012)		0.068 (0.012)		0.038 (0.014)	0.006
SC3	0.186 (0.016)		0.126 (0.017)		0.104 (0.018)	
UA2	0.086 (0.013)		0.050 (0.013)		0.040 (0.013)	0.003
UA3	0.222 (0.017)		0.173 (0.017)		0.163 (0.017)	
PD2	0.072 (0.010)		0.088 (0.010)		0.068 (0.011)	
PD3	0.223 (0.011)		0.168 (0.012)		0.153 (0.013)	
AD2	0.048 (0.012)		0.081 (0.012)		0.066 (0.013)	
AD3	0.117 (0.011)		0.076 (0.011)		0.064 (0.012)	
Constant	0.232 (0.010)		0.193 (0.010)		0.200 (0.010)	
N3			0.189 (0.015)		0.168 (0.016)	
X2					0.071 (0.018)	
R ² adjusted	0.258		0.265		0.266	
MAE	0.047		0.034		0.032	
No. (of 31)>0.05	11		8		7	
No. (of 31)>0.10	2		0		0	

Nota: Note: all coefficients significant at P<0.001 unless otherwise stated. Standard errors are given in parenthesis. R2 overall represents the correlation between observed and predicted TTO values..

EQ-5D Social Value Set 2013/2014



EQ-5D Social Value Set 2013/2014

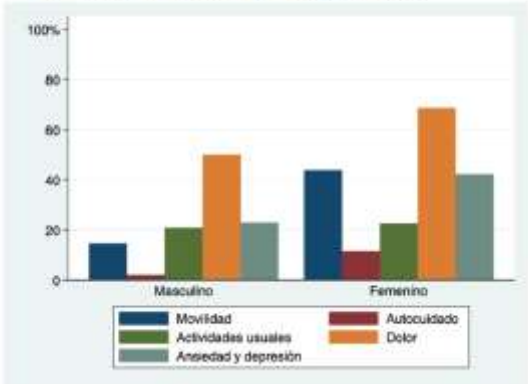


Encuesta Nacional Salud Chile 2016-2017



Encuesta Nacional Salud Chile 2016-2017

Figura 1. Proporción de problemas autoreportados en individuos con IMC >40, por sexo



EQ-5D Ecuador



Estudio de Preferencias Sociales EQ-5D para Ecuador 2006-2007. Consultoría BID, Ministerio de Salud Pública Ecuador