

# GBD PROFILE: BRAZIL

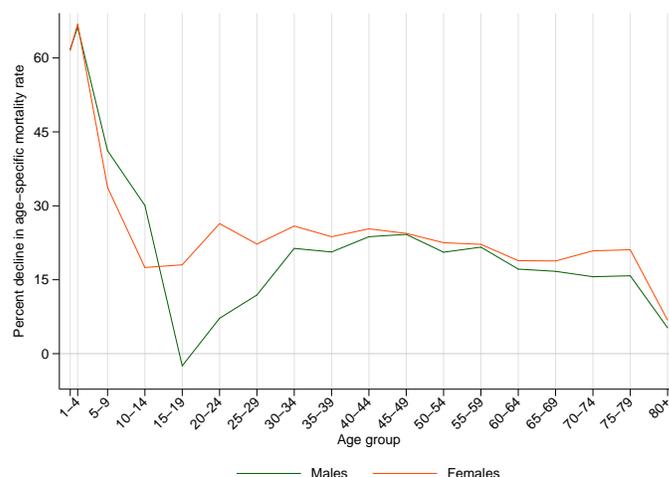
## GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

### PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Brazil, interpersonal violence, ischemic heart disease, and cerebrovascular disease were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), preterm birth complications showed the largest decrease, falling by 59% from 1990 to 2010.
- The leading risk factor in Brazil is dietary risks.

Percent decline in age-specific mortality rate by sex from 1990-2010 in Brazil



### ALL-CAUSE MORTALITY RATE

- This chart shows the change in mortality rate at every age range. The points above 0 on the chart indicate positive declines in the all-cause mortality rate, while points below 0 indicate an increase in mortality rate between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by females aged 1-4 years (67%). Males aged 15-19 years saw the largest increase in mortality rate (2%).

### CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Brazil

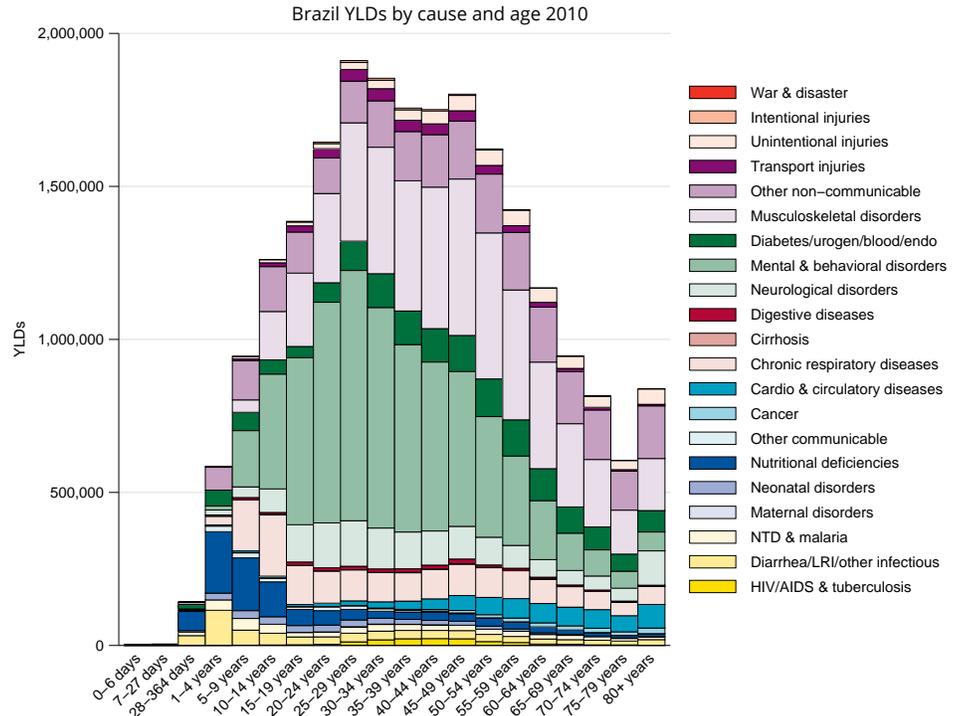
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
3,361 (9.2%)	1 Lower respiratory infections	1 Interpersonal violence	3,172 (9.9%)	41
3,337 (9.2%)	2 Preterm birth complications	2 Ischemic heart disease	2,938 (9.1%)	27
3,161 (8.7%)	3 Diarrheal diseases	3 Stroke	2,355 (7.3%)	6
2,300 (6.3%)	4 Ischemic heart disease	4 Road injury	2,023 (6.3%)	28
2,250 (6.2%)	5 Interpersonal violence	5 Lower respiratory infections	1,443 (4.5%)	-57
2,147 (5.9%)	6 Stroke	6 Preterm birth complications	1,327 (4.1%)	-60
1,603 (4.4%)	7 Road injury	7 Diabetes	964 (3.0%)	95
1,419 (3.9%)	8 Neonatal encephalopathy	8 HIV/AIDS	940 (2.9%)	22
1,314 (3.6%)	9 Congenital anomalies	9 Congenital anomalies	897 (2.8%)	-26
864 (2.4%)	10 Neonatal sepsis	10 Cirrhosis	857 (2.7%)	51
794 (2.2%)	11 HIV/AIDS	11 COPD	775 (2.4%)	24
622 (1.7%)	12 COPD	12 Neonatal encephalopathy	679 (2.1%)	-52
569 (1.6%)	13 Cirrhosis	13 Hypertensive heart disease	548 (1.7%)	53
559 (1.5%)	14 Drowning	14 Self-harm	540 (1.7%)	58
527 (1.4%)	15 Meningitis	15 Neonatal sepsis	556 (1.7%)	-36
551 (1.5%)	16 Syphilis	16 Chronic kidney disease	522 (1.6%)	81
494 (1.4%)	17 Diabetes	17 Lung cancer	516 (1.6%)	59
409 (1.1%)	18 Protein-energy malnutrition	18 Cardiomyopathy	492 (1.5%)	26
387 (1.1%)	19 Cardiomyopathy	19 Drowning	446 (1.4%)	-23
385 (1.1%)	20 Other cardio & circulatory	20 Other cardio & circulatory	417 (1.3%)	8
356 (1.0%)	21 Hypertensive heart disease	21 Colorectal cancer	378 (1.2%)	140
346 (0.9%)	22 Self-harm	22 Breast cancer	358 (1.1%)	89
325 (0.9%)	23 Lung cancer	23 Stomach cancer	338 (1.1%)	11
305 (0.8%)	24 Stomach cancer	24 Diarrheal diseases	328 (1.0%)	-90
287 (0.8%)	25 Chronic kidney disease	25 Alcohol use disorders	301 (0.9%)	104
	30 Breast cancer	36 Meningitis		
	32 Colorectal cancer	38 Protein-energy malnutrition		
	34 Alcohol use disorders	65 Syphilis		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

## YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Brazil are low back pain, major depressive disorder, anxiety disorders, neck pain, and asthma.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

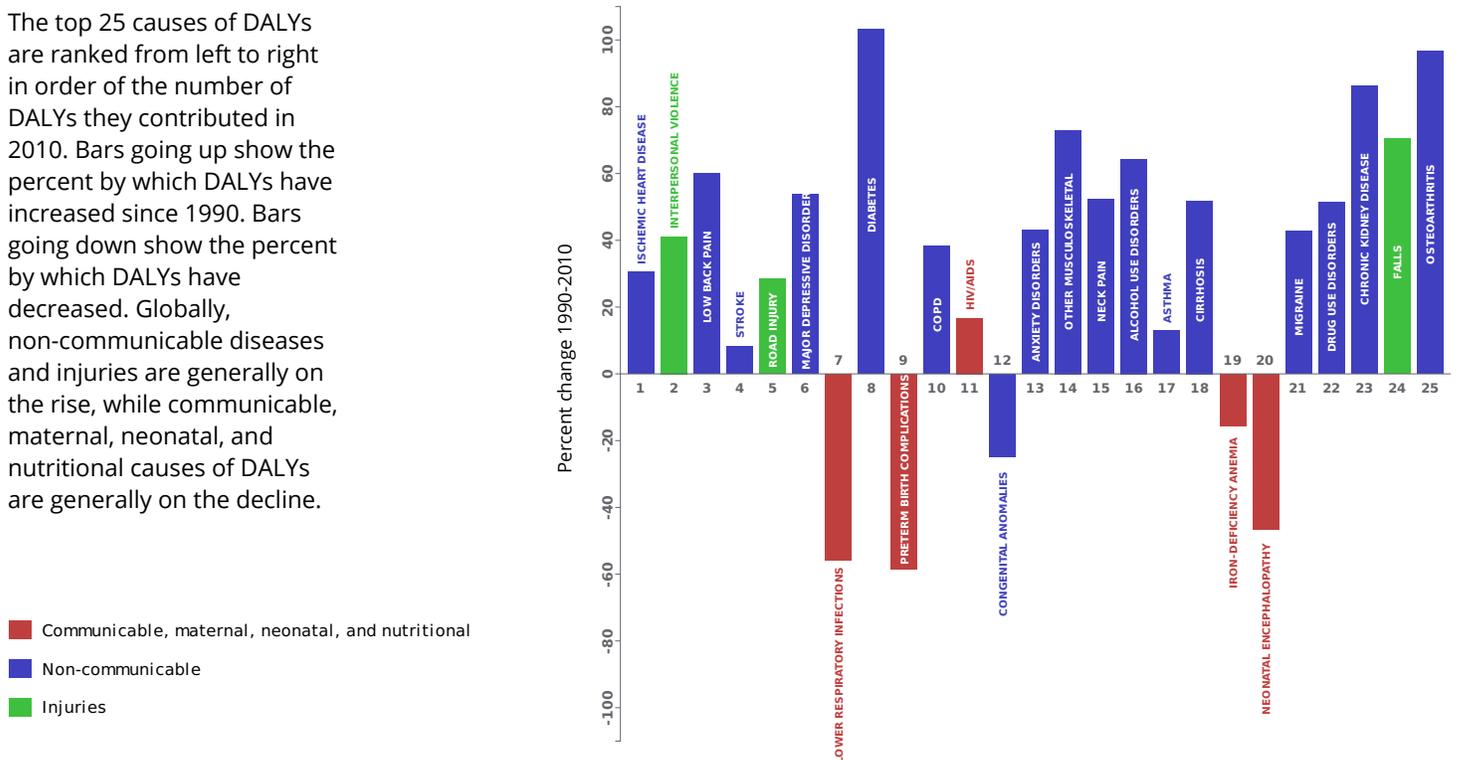


## DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Brazil, the top three causes of DALYs in 2010 were ischemic heart disease, interpersonal violence, and low back pain. Two causes that appeared in the 10 leading causes of DALYs in 2010 and not 1990 were diabetes mellitus and chronic obstructive pulmonary disease.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

Leading causes of DALYs and percent change 1990 to 2010 for Brazil

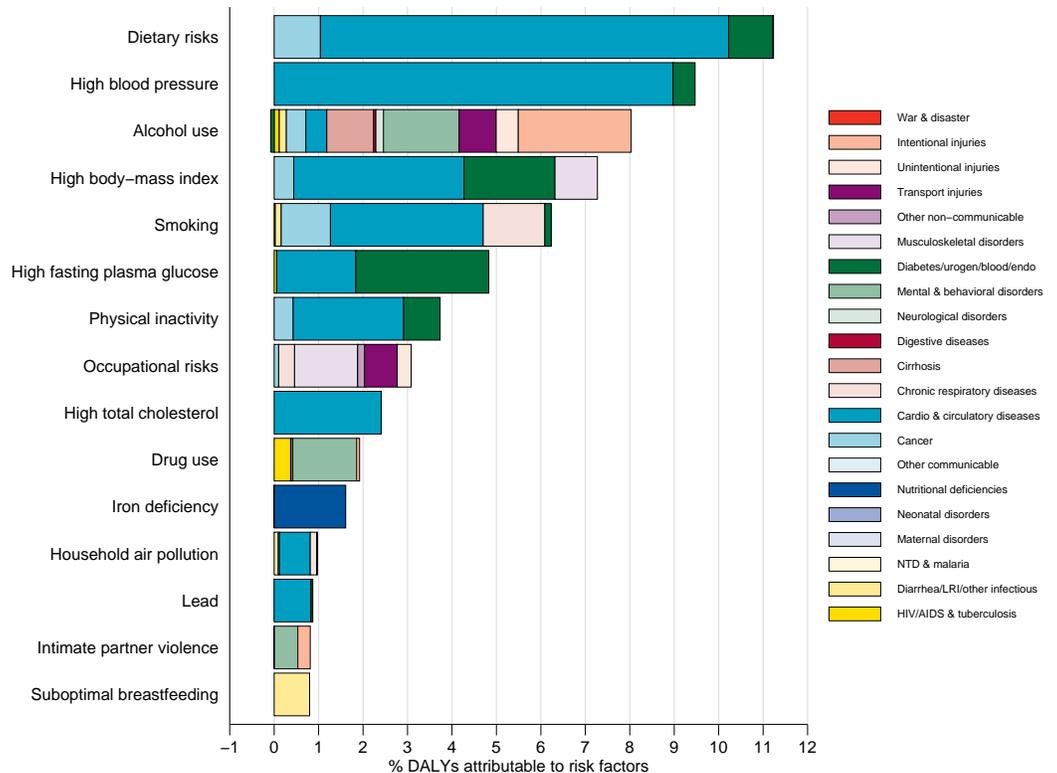


## RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Brazil are dietary risks, high blood pressure, and alcohol use. The leading risk factors for children under 5 and adults aged 15-49 years were suboptimal breastfeeding and alcohol use, respectively, in 2010.

The graph shows the top 15 risk factors for Brazil. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Brazil DALYs



## COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Brazil against other comparator countries provides key insight into public health successes and areas where Brazil might be falling behind. The table identifies Brazil's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Brazil ranked 6th for age-standardized YLD rate and 11th for age-standardized YLL rate.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined																				
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth			
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank
Venezuela	716	7	630	6	19,688	7	17,271	10	11,583	2	10,994	2	72.6	7	74.5	8	62.8	7	64.9	5
Grenada	904	11	850	13	25,983	10	21,313	13	13,149	14	13,076	14	68.9	11	71	13	58.7	11	59.6	13
Kazakhstan	1,043	14	1,043	14	31,524	14	29,881	14	11,955	6	11,587	5	66.2	14	66.7	14	57.3	13	58.2	14
Costa Rica	556	1	462	1	13,705	1	10,447	1	11,672	3	10,948	1	76.6	1	79.4	1	66	1	68.9	1
Romania	895	10	712	12	23,494	9	16,325	7	11,261	1	11,043	3	69.9	9	73.8	11	60.9	9	64.4	8
Panama	634	2	545	3	16,812	4	14,027	6	12,186	9	11,151	4	74.5	3	76.7	4	63.9	3	66.5	2
Iran	934	13	640	8	29,033	13	16,780	9	13,288	15	12,619	10	67.5	13	74.4	9	57.2	14	63.2	10
<b>Brazil</b>	<b>854</b>	<b>8</b>	<b>670</b>	<b>9</b>	<b>26,370</b>	<b>11</b>	<b>17,580</b>	<b>11</b>	<b>12,016</b>	<b>7</b>	<b>11,637</b>	<b>6</b>	<b>69.1</b>	<b>10</b>	<b>74.1</b>	<b>10</b>	<b>59.4</b>	<b>10</b>	<b>63.8</b>	<b>9</b>
Serbia	698	6	572	4	16,985	5	12,077	3	12,440	11	11,833	8	73.7	5	76.7	3	63	6	66	3
South Africa	1,133	15	1,266	15	34,540	15	48,286	15	12,905	13	13,826	15	64.6	15	59.9	15	55.5	15	51	15
Cuba	635	3	543	2	15,919	2	11,088	2	11,765	4	12,791	11	74.8	2	77.9	2	64.6	2	65.2	4
Montenegro	674	4	637	7	16,059	3	13,549	4	12,222	10	12,180	9	74.4	4	75.6	5	63.6	4	64.7	7
Suriname	922	12	693	11	27,022	12	20,892	12	12,827	12	12,945	13	68.5	12	72.6	12	58.6	12	60.7	12
Jamaica	676	5	610	5	18,618	6	16,417	8	12,075	8	12,909	12	73.6	6	75.3	6	63.2	5	62.8	11
Macedonia	873	9	682	10	21,414	8	13,939	5	11,940	5	11,694	7	70.9	8	75	7	61.2	8	64.8	6

## COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Brazil relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Brazil for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																											
Country	Preterm birth complications	Lower respiratory infections	Diarrheal diseases	Ischemic heart disease	Interpersonal violence	Stroke	Road injury	Low back pain	Neonatal encephalopathy	Major depressive disorder	Congenital anomalies	Iron-deficiency anemia	COPD	HIV/AIDS	Neonatal sepsis	Asthma	Diabetes	Anxiety disorders	Neck pain	Cirrhosis	Meningitis	Drowning	Migraine	Alcohol use disorders	Other musculoskeletal		
Venezuela	11	9	12	6	13	3	13	8	8	9	4	6	5	5	11	7	11	7	6	11	6	6	3	8	15		
Grenada	12	12	6	8	2	11	3	1	13	13	5	13	3	12	14	12	12	10	3	8	8	14	9	15	12		
Kazakhstan	10	15	11	15	12	13	14	10	15	4	14	9	14	3	8	3	3	8	13	14	10	15	11	10	13		
Costa Rica	4	3	5	2	6	1	6	7	5	7	12	4	7	7	14	2	4	5	10	4	7	4	11	14	7		
Romania	2	14	3	13	3	14	10	11	2	2	13	5	13	4	1	4	1	1	14	15	5	12	15	12	5		
Panama	5	6	8	3	10	4	9	6	7	14	9	7	9	10	9	11	5	6	2	7	7	13	5	4	10		
Iran	9	7	7	14	5	5	15	15	1	15	15	10	10	2	6	6	4	11	1	5	11	11	1	1	1		
<b>Brazil</b>	<b>14</b>	<b>11</b>	<b>13</b>	<b>5</b>	<b>14</b>	<b>8</b>	<b>12</b>	<b>9</b>	<b>11</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>13</b>	<b>15</b>	<b>8</b>	<b>7</b>	<b>3</b>	<b>9</b>	<b>13</b>	<b>14</b>	<b>10</b>	<b>10</b>	<b>14</b>	<b>6</b>		
Serbia	7	2	1	7	4	12	7	13	6	10	7	1	8	9	5	2	6	15	12	4	1	4	14	7	9		
South Africa	8	13	15	4	15	9	2	5	10	3	3	12	15	14	10	15	14	2	15	9	15	8	2	6	11		
Cuba	1	4	4	9	9	2	11	2	3	1	6	11	6	6	4	13	10	9	8	6	9	5	7	9	4		
Montenegro	3	1	2	10	7	10	5	14	9	11	1	3	1	1	3	1	9	13	11	1	2	1	13	3	7		
Suriname	15	10	14	11	8	7	8	3	14	12	11	15	4	15	13	10	13	12	4	12	13	9	8	13	2		
Jamaica	6	5	9	1	11	6	1	4	12	6	2	14	2	11	12	9	15	5	7	2	12	2	6	5	3		
Macedonia	13	8	10	12	1	15	4	12	4	8	10	2	11	8	2	5	8	14	10	3	3	3	12	2	8		
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																											
Country	Ischemic heart disease	Interpersonal violence	Low back pain	Stroke	Road injury	Major depressive disorder	Lower respiratory infections	Diabetes	Preterm birth complications	COPD	HIV/AIDS	Congenital anomalies	Anxiety disorders	Other musculoskeletal	Neck pain	Alcohol use disorders	Asthma	Cirrhosis	Iron-deficiency anemia	Neonatal encephalopathy	Migraine	Drug use disorders	Chronic kidney disease	Falls	Osteoarthritis		
Venezuela	8	15	6	2	13	8	8	11	10	7	11	9	9	12	3	6	7	11	6	8	3	4	14	4	10		
Grenada	9	7	1	9	7	11	12	15	6	3	10	6	3	15	5	14	13	12	14	10	7	14	11	9	8		
Kazakhstan	15	10	10	15	14	2	14	4	13	14	8	15	10	11	14	15	1	15	10	15	11	5	7	12	13		
Costa Rica	3	8	7	1	6	6	4	1	5	6	7	10	5	13	6	11	15	10	3	5	5	8	10	3	11		
Romania	13	2	13	13	8	3	13	2	2	12	3	8	1	5	13	10	4	14	5	1	15	2	2	15	12		
Panama	4	11	8	3	10	5	9	10	7	5	12	12	6	10	7	4	11	7	8	7	4	9	12	2	6		
Iran	14	5	15	5	15	15	6	7	11	9	4	14	13	1	1	1	6	2	9	6	1	13	1	6	15		
<b>Brazil</b>	<b>6</b>	<b>13</b>	<b>9</b>	<b>6</b>	<b>12</b>	<b>12</b>	<b>11</b>	<b>8</b>	<b>12</b>	<b>13</b>	<b>9</b>	<b>11</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>13</b>	<b>9</b>	<b>13</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>8</b>	<b>5</b>	<b>14</b>		
Serbia	10	3	12	12	5	1	1	6	3	10	6	2	15	8	10	8	3	5	1	2	13	6	3	13	9		
South Africa	2	14	5	7	3	4	15	13	14	15	15	5	2	14	15	7	8	9	12	13	2	15	13	1	1		
Cuba	7	6	2	4	4	13	7	5	1	11	5	3	7	3	8	12	14	6	11	4	6	7	6	11	3		
Montenegro	11	4	11	11	9	14	3	3	4	1	1	1	14	6	11	5	2	1	4	9	14	3	4	14	2		
Suriname	5	9	4	10	11	10	12	15	2	14	13	4	7	4	9	10	8	15	14	9	12	15	7	5			
Jamaica	1	12	3	8	1	7	5	14	8	4	13	7	12	2	2	3	12	3	13	12	8	10	9	8	7		
Macedonia	12	1	14	14	2	9	2	9	9	8	2	4	11	4	12	2	5	4	2	3	12	1	5	10	4		
Ranking Legend	1 - 3			4 - 7			8 - 11			12 - 15																	