

Global burden of migraine in the Year 2000: summary of methods and data sources.

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1. Introduction

Migraine is a new condition included in the Global Burden of Disease 2000 study (GBD2000), but not in the earlier Global Burden of Disease 1990 study (1). The burden of migraine is substantial due to its high prevalence and prominent temporary disability. The widespread disability produced by migraine is an important target for treatment and effective treatments exist but not used by the majority of sufferers.

In the Version 2 estimates for the GBD2000 study, published in the World Health Report 2002(2), migraine is the 20th leading cause of YLDs at global level, accounting for 1.4% of total global YLDs. The migraine burden is higher in women (at 2% of total global YLDs), making it the 9th leading cause of disability in women. This draft paper summarises the data and methods used to produce the Version 2 estimates of migraine burden for the year 2000. A more detailed paper is in preparation.

2. Case and sequelae definitions

The collection of consistent and comparable epidemiologic data are difficult for migraine due to the absence of objective diagnostic criteria and the need to rely on patient-reported symptoms. Health service data are not useful because many sufferers fail to consult physicians for migraine. A 1989 U.S. survey reported that only about one-half of patients seek medical attention for migraine, and only about one-half of those patients are properly diagnosed (3). About one-half of patients with a proper diagnosis of migraine receive prescription drugs (4). For these reasons, large, broad-based general population studies using standard criteria are critical for the estimation of the burden of migraine.

It has been easier to collect broad-based epidemiologic data since the International Headache Society (IHS) developed specific diagnostic criteria for migraine (5). The IHS classification recognizes two types of migraine:

Migraine without aura: an idiopathic recurring headache disorder that manifests in the form of attacks that last 4-72 hours. Typically, the headache is unilateral, have a pulsating quality, and are moderate to severe in intensity. These headaches are aggravated by routine physical activity and are associated with nausea or vomiting, photophobia, and phonophobia.

Migraine with aura: an idiopathic recurring disorder that manifests in some women as migraine without aura but is also accompanied by transient neurological symptoms. Aura symptoms usually develop gradually, over 5-20 minutes, and last less than 60 minutes. Headache, nausea, or

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photophobia usually follow neurologic aura symptoms directly or after a free interval of less than 1 hour. The headache usually lasts 4-72 hours, but rarely will be completely absent (migraine aura without headache).

The case definition and sequelae used for migraine are given in Table 2.1 below.

Table 2.1 Case and sequelae definitions for migraine

Cause category	GBD 2000 Code	ICD 9 codes	ICD 10 codes
Migraine	U084		F20

Sequela	Definition
Treated	International Headache Society (IHS) criteria for migraine.
Untreated	

3. Incidence and prevalence of migraine

Migraine is a very common disorder, affecting about 11% of adult populations in Western countries. Prevalence is highest during the peak productive years - between the ages of 25 and 55. The prevalence is higher in females than males at all post-pubertal ages, but the sex ratio varies with age. Despite differences in countries, populations, and years in which the studies were conducted, epidemiologic data regarding prevalence and other factors remain remarkably consistent.

One of us (Leonardi) has conducted a systematic review of all available published and non-published papers of meaningful population studies on migraine. Criteria for inclusion were:

- Population based studies (preferably with N>1000) that used IHS criteria (or modified criteria)
- School-based studies (in English)
- Hospital-based studies were evaluated if N>1000

Two incidence studies of migraine were found. Stewart et al (1989) found an incidence of 601 per 100,000 in females and 222/100,000 in males in the USA. Rasmussen (6) found similar incidence rates in Denmark: 580 per 100,000 in females and 160/100,000 in males. Age at onset of migraine is earlier in boys than in girls. Migraine is two to three times more common in women than in men, with peak prevalence occurring during mid-life in both sexes. Current evidence also indicates that migraine prevalence is higher in Caucasians than in Africans or Asians.

Prevalence of active cases of migraine increases steadily from infancy until approximately 40 years of age and peaks between ages 35 and 45 in both males and females and declines thereafter.

Prevalence studies were reviewed and assessed to estimate regional prevalences of migraine (7-46).

Migraine prevalence is lowest in Asia and Africa and increases as follows: Europe, Central and South America, North America. In North America and Europe, the 1-year prevalence of migraine is 6% among men and 15-18% among women.

The resulting regional estimates of age-sex specific prevalence of migraine are shown below in Table 3.1.

Table 3.1: Migraine: incidence, prevalence and duration estimates from DISMOD models, WHO epidemiological subregions, 2000.

Subregion	Males			Females		
	Incidence per 1000	Prevalence per 1000	Average duration (yrs)	Incidence per 1000	Prevalence per 1000	Average duration (yrs)
AFRO D						
0-4	0.12	0.15	52.77	0.21	0.23	52.27
5-14	0.67	3.98	49.15	1.39	8.04	48.46
15-29	0.77	7.83	41.77	1.87	22.32	35.80
30-44	0.06	12.19	27.71	0.71	54.10	31.50
45-59	0.05	20.94	22.12	0.07	55.96	16.13
60-69	0.01	20.97	11.69	0.03	52.21	9.42
70-79	0.00	19.09	7.16	0.00	27.96	5.46
80+	0.00	16.72	4.50	0.00	15.72	4.51
<i>Total</i>	<i>0.34</i>	<i>7.84</i>	<i>41.08</i>	<i>1.03</i>	<i>24.02</i>	<i>40.22</i>
AFRO E						
0-4	0.72	1.79	45.09	0.20	0.26	44.85
5-14	0.58	6.46	41.51	2.30	9.55	39.69
15-29	0.61	14.29	32.87	1.38	38.21	34.04
30-44	0.01	18.04	23.72	0.01	42.66	24.32
45-59	0.01	18.09	16.42	0.01	42.71	15.29
60-69	0.00	16.63	9.89	0.00	36.20	6.98
70-79	0.00	12.71	7.05	0.00	14.34	5.81
80+	0.00	10.38	4.60	0.00	10.26	4.81
<i>Total</i>	<i>0.46</i>	<i>10.87</i>	<i>39.17</i>	<i>1.04</i>	<i>24.52</i>	<i>37.78</i>
AMRO A						
0-4	0.65	0.67	66.60	0.64	0.65	65.92
5-14	3.99	24.25	60.95	4.12	24.36	60.11
15-29	0.70	48.84	49.45	6.26	92.45	47.85
30-44	0.63	60.77	37.42	4.33	188.13	36.08
45-59	0.01	63.45	21.77	0.00	206.01	19.51
60-69	0.00	62.77	11.61	0.00	196.08	8.62
70-79	0.00	44.69	6.64	0.00	70.68	4.02
80+	0.00	18.62	4.67	0.00	10.84	5.60
<i>Total</i>	<i>0.95</i>	<i>47.49</i>	<i>55.57</i>	<i>2.84</i>	<i>123.15</i>	<i>46.43</i>
AMRO B						
0-4	0.22	0.24	65.24	0.74	0.76	70.16
5-14	1.37	8.12	59.51	4.68	28.39	64.60
15-29	2.05	31.31	48.77	2.25	64.95	51.53
30-44	0.01	45.05	35.25	4.61	128.69	41.17
45-59	0.01	45.12	23.25	0.01	148.68	25.36

60-69	0.01	45.08	14.03	0.01	148.66	14.89
70-79	0.01	44.78	8.50	0.00	145.48	8.16
80+	0.00	33.92	4.47	0.00	75.01	3.61
<i>Total</i>	<i>0.90</i>	<i>28.59</i>	<i>52.59</i>	<i>2.60</i>	<i>81.78</i>	<i>52.83</i>

Table 8 (continued): Migraine: incidence, prevalence and duration estimates from DISMOD models, WHO epidemiological subregions, 2000.

Subregion	Males			Females		
	Incidence per 1000	Prevalence per 1000	Average duration (yrs)	Incidence per 1000	Prevalence per 1000	Average duration (yrs)
AMRO D						
0-4	0.32	0.34	61.35	1.40	1.42	63.82
5-14	2.04	12.00	56.22	8.63	52.34	58.80
15-29	1.98	36.38	45.18	0.56	96.95	47.03
30-44	1.17	61.78	34.27	2.12	121.00	36.14
45-59	0.01	67.02	19.96	0.01	130.40	21.01
60-69	0.01	66.91	11.02	0.01	130.13	11.12
70-79	0.01	63.04	5.81	0.00	118.99	5.30
80+	0.00	29.28	3.56	0.00	36.57	3.02
<i>Total</i>	<i>1.33</i>	<i>34.41</i>	<i>48.20</i>	<i>2.77</i>	<i>83.18</i>	<i>55.30</i>
EMRO B						
0-4	0.42	0.76	66.32	0.77	0.78	66.44
5-14	1.67	10.49	59.93	4.76	29.62	60.97
15-29	0.33	22.07	52.22	0.17	53.57	54.76
30-44	0.02	23.36	37.32	0.01	53.81	34.92
45-59	0.01	23.45	21.38	0.01	53.88	21.46
60-69	0.01	23.52	11.16	0.01	53.94	11.01
70-79	0.01	23.53	5.87	0.01	53.67	5.83
80+	0.00	17.01	2.64	0.00	36.80	2.81
<i>Total</i>	<i>0.57</i>	<i>17.14</i>	<i>59.00</i>	<i>1.37</i>	<i>41.11</i>	<i>61.03</i>
EMRO D						
0-4	0.34	0.41	64.18	0.42	0.43	65.13
5-14	1.92	11.87	58.95	2.69	16.20	59.90
15-29	0.07	21.73	52.53	1.69	41.67	48.83
30-44	0.01	21.88	33.52	0.70	60.44	36.89
45-59	0.01	21.97	20.97	0.01	63.58	21.33
60-69	0.01	22.04	11.45	0.01	63.64	11.42
70-79	0.01	22.09	6.44	0.01	63.49	6.42
80+	0.00	21.77	3.49	0.00	59.55	3.59
<i>Total</i>	<i>0.53</i>	<i>16.51</i>	<i>59.04</i>	<i>1.30</i>	<i>37.23</i>	<i>53.82</i>

EURO A

0-4	0.22	0.25	69.80	0.43	0.44	73.55
5-14	1.43	8.26	63.68	3.06	16.66	67.20
15-29	4.39	54.89	52.44	14.39	164.86	56.01
30-44	0.01	82.63	37.66	0.00	253.75	40.72
45-59	0.01	82.68	24.35	0.00	253.75	26.71
60-69	0.01	82.71	14.24	0.00	253.71	15.33
70-79	0.00	81.94	8.03	0.00	244.37	7.65
80+	0.00	50.53	3.73	0.00	88.80	3.13
<i>Total</i>	<i>1.09</i>	<i>62.60</i>	<i>54.36</i>	<i>3.04</i>	<i>189.23</i>	<i>57.38</i>

Table 8 (continued): Migraine: incidence, prevalence and duration estimates from DISMOD models, WHO epidemiological subregions, 2000.

Subregion	Males			Females		
	Incidence per 1000	Prevalence per 1000	Average duration (yrs)	Incidence per 1000	Prevalence per 1000	Average duration (yrs)
EURO B1						
0-4	0.43	0.44	65.46	0.64	0.65	69.97
5-14	2.66	16.45	59.96	4.03	24.71	64.54
15-29	0.57	33.85	49.52	2.71	65.71	53.43
30-44	0.05	37.32	30.18	0.65	90.54	41.50
45-59	0.17	39.26	23.79	0.01	93.39	25.67
60-69	0.01	40.25	13.18	0.01	93.43	14.72
70-79	0.01	40.16	7.90	0.00	92.47	8.11
80+	0.00	30.30	3.98	0.00	53.72	3.55
<i>Total</i>	<i>0.65</i>	<i>30.81</i>	<i>55.75</i>	<i>1.48</i>	<i>68.06</i>	<i>57.38</i>
EURO B2						
0-4	0.43	0.44	65.46	0.64	0.65	69.97
5-14	2.66	16.45	59.96	4.03	24.71	64.54
15-29	0.57	33.85	49.52	2.71	65.71	53.43
30-44	0.05	37.32	30.18	0.65	90.54	41.50
45-59	0.17	39.26	23.79	0.01	93.39	25.67
60-69	0.01	40.25	13.18	0.01	93.43	14.72
70-79	0.01	40.16	7.90	0.00	92.47	8.11
80+	0.00	30.30	3.98	0.00	53.72	3.55
<i>Total</i>	<i>0.89</i>	<i>27.20</i>	<i>57.44</i>	<i>1.86</i>	<i>58.70</i>	<i>58.76</i>
EURO C						
0-4	0.22	0.25	59.78	0.22	0.24	68.79
5-14	1.35	8.73	53.72	1.43	8.81	62.42

15-29	1.63	27.44	42.87	4.61	52.60	51.61
30-44	0.61	46.12	32.02	0.59	91.17	39.34
45-59	0.01	48.69	19.26	0.01	93.62	23.91
60-69	0.01	48.74	11.20	0.01	93.66	13.23
70-79	0.01	46.98	6.45	0.01	87.06	6.42
80+	0.00	24.16	3.76	0.00	30.22	3.55
<i>Total</i>	<i>0.76</i>	<i>33.97</i>	<i>43.83</i>	<i>1.29</i>	<i>66.94</i>	<i>52.01</i>
SEARO B						
0-4	0.32	0.39	64.14	0.42	0.44	66.17
5-14	1.92	11.20	58.51	2.73	16.27	60.75
15-29	0.80	27.72	48.79	3.14	54.88	49.89
30-44	0.36	35.51	36.31	0.46	80.19	38.30
45-59	0.10	38.70	25.97	0.01	82.25	23.00
60-69	0.01	39.03	13.68	0.01	82.29	12.93
70-79	0.01	37.92	7.91	0.01	77.20	6.61
80+	0.00	25.97	4.43	0.00	31.86	3.85
<i>Total</i>	<i>0.75</i>	<i>24.99</i>	<i>52.99</i>	<i>1.58</i>	<i>52.00</i>	<i>53.36</i>

Table 8 (continued): Migraine: incidence, prevalence and duration estimates from DISMOD models, WHO epidemiological subregions, 2000.

Subregion	Males			Females		
	Incidence per 1000	Prevalence per 1000	Average duration (yrs)	Incidence per 1000	Prevalence per 1000	Average duration (yrs)
SEARO D						
0-4	0.03	0.03	61.40	1.00	1.06	62.08
5-14	1.49	4.27	54.32	6.04	36.78	57.54
15-29	1.24	28.36	49.04	0.38	68.13	46.99
30-44	0.28	34.38	33.02	2.06	85.59	33.29
45-59	0.05	36.67	22.90	0.07	102.25	24.89
60-69	0.01	36.85	11.65	0.01	102.28	10.87
70-79	0.01	36.69	7.09	0.00	89.48	5.39
80+	0.00	29.32	3.72	0.00	32.09	3.27
<i>Total</i>	<i>0.75</i>	<i>22.09</i>	<i>50.10</i>	<i>2.00</i>	<i>61.93</i>	<i>52.34</i>
WPRO A						
0-4	0.22	0.24	72.59	0.85	0.86	73.54
5-14	1.37	8.27	66.62	5.41	33.14	67.67
15-29	2.06	33.85	55.15	4.99	104.96	55.93
30-44	0.01	46.56	40.18	0.44	140.05	43.66
45-59	0.01	46.63	26.32	0.01	141.98	26.24

60-69	0.01	46.68	15.98	0.01	141.98	14.70
70-79	0.01	46.53	9.44	0.00	127.65	6.83
80+	0.00	34.11	4.66	0.00	34.29	4.25
<i>Total</i>	<i>0.61</i>	<i>36.84</i>	<i>58.19</i>	<i>1.66</i>	<i>110.04</i>	<i>59.56</i>
WPRO B1						
0-4	0.00	0.00	0.00	0.22	0.24	69.12
5-14	0.07	0.09	56.95	1.49	8.48	63.07
15-29	1.88	17.83	49.50	6.16	73.33	52.25
30-44	0.01	30.01	35.41	0.01	112.61	38.08
45-59	0.01	30.09	22.51	0.01	112.67	24.73
60-69	0.01	30.16	12.60	0.01	112.71	13.87
70-79	0.01	30.19	7.34	0.00	111.88	7.64
80+	0.00	26.07	3.83	0.00	69.29	3.34
<i>Total</i>	<i>0.49</i>	<i>19.35</i>	<i>49.56</i>	<i>1.81</i>	<i>76.52</i>	<i>53.84</i>
WPRO B2						
0-4	0.22	0.24	61.92	0.42	0.44	64.29
5-14	1.35	8.09	56.82	2.73	16.22	59.16
15-29	1.29	23.38	44.99	3.52	54.84	47.77
30-44	1.94	51.34	34.75	3.27	113.13	36.98
45-59	0.01	60.01	20.15	0.01	127.44	21.80
60-69	0.00	59.54	11.43	0.01	127.43	12.05
70-79	0.00	55.14	7.52	0.00	125.40	6.93
80+	0.00	47.52	4.34	0.00	98.57	4.08
<i>Total</i>	<i>1.12</i>	<i>28.73</i>	<i>44.86</i>	<i>2.33</i>	<i>66.76</i>	<i>47.64</i>

Table 8 (continued): Migraine: incidence, prevalence and duration estimates from DISMOD models, WHO epidemiological subregions, 2000.

Subregion	Males			Females		
	Incidence per 1000	Prevalence per 1000	Average duration (yrs)	Incidence per 1000	Prevalence per 1000	Average duration (yrs)
WPRO B3						
0-4	0.12	0.16	57.83	0.22	0.24	60.11
5-14	0.66	4.00	52.96	1.36	7.99	55.04
15-29	0.39	9.61	41.11	1.83	27.31	43.70
30-44	1.05	21.06	30.38	2.22	61.68	33.24
45-59	1.15	37.11	18.85	0.79	78.05	19.27
60-69	0.01	43.87	9.85	0.01	83.29	10.00
70-79	0.01	42.14	5.48	0.01	77.73	5.11
80+	0.00	25.42	3.18	0.00	34.20	2.90
<i>Total</i>	<i>0.59</i>	<i>13.39</i>	<i>37.05</i>	<i>1.35</i>	<i>33.08</i>	<i>42.37</i>
World						
0-4	0.21	0.33	57.96	0.57	0.60	63.97
5-14	1.24	6.41	56.87	3.60	21.32	58.87
15-29	1.45	26.29	48.84	3.53	68.38	51.37
30-44	0.21	38.59	34.38	1.25	112.51	36.82
45-59	0.03	42.05	23.38	0.02	125.56	23.33
60-69	0.01	43.65	12.71	0.01	128.38	12.21
70-79	0.01	43.85	7.50	0.00	119.90	6.82
80+	0.00	31.11	3.83	0.00	52.44	3.80
<i>Total</i>	<i>0.70</i>	<i>25.79</i>	<i>50.89</i>	<i>1.91</i>	<i>74.72</i>	<i>52.42</i>

4. Disease model

The disease model for migraine was based on evidence from the literature which indicates low remission rates over long periods. It has been modelled as a chronic disease lasting from 15 years to around 45 years with sporadic episodes; the case definition has been taken from the IHS agreed definition of migraine.

The Global Burden of Disease 1990 study estimated a disability weight of 0.738 for severe migraine (during an attack). An overall average disability weight for migraine was estimated based on a 3x3 matrix of attack frequency by severity of attack, and wide consultation with experts on the frequency and severity distributions. Table 4.1 shows the estimated distribution together with the provisional disability weights used for mild and moderate levels of migraine (during an attack). The overall disability weight of 0.03 for untreated migraine was estimated from this table assuming that the average attack duration was 24 hours. For treated migraine attacks, it was assumed that the average duration was reduced to 6 hours. For the two less frequent categories of migraine, a disability weight of 0 was assumed for the non-attack periods. For migraine with more than one attack per week, a

residual disability weight of 0.03 was assumed to apply to non-attack periods for people suffering moderate or severe migraine, to take account of the fear of attack and related mood problems and disruptions to usual activities. These assumptions result in provisional disability weights of 0.03 for the average case of untreated migraine, and 0.007 for the average treated case.

Table 4.1 Frequency, severity and disability weights

Frequency of attacks	Attacks per month	Mild	Moderate	Severe	All severity levels
Less than 1/month	0.5	0.10	0.20	0.11	0.41
1 per week	4	0.12	0.30	0.11	0.53
More than one per week	8	0.01	0.02	0.03	0.06
All frequencies		0.23	0.52	0.25	1.00
	Disability weight	0.05	0.16	0.738	

Effective treatment assumed to be available for 20% of episodes in developed regions based on expert advice. Disability weights were based on the assumption that 20% of cases are treated in A regions, 5% in EURO B and EURO C, 2% in AMRO B and AMRO D, and 1% in all other regions of the world. As a result, average disability weights for migraine vary from 0.025 in A regions to 0.03 in most developing regions.

Table 4.2 Disability weights

Sequela/stage/severity level	Disability weight	Health state description
Migraine Untreated	0.03	Chronic condition marked by episodic migraines (one per month), with attacks lasting 4 to 72 hours, most commonly one day. Headaches marked by unilateral location, pulsation, moderate to severe intensity, aggravation by routine physical activity and photophobia/phonophobia. No symptoms between attacks.
Migraine Treated	0.007	Chronic condition marked by episodic migraines (one per month), with attacks lasting a few hours. Prompt effective treatment stops the attack and prevents all accompanying symptoms.

Table 4.3 Migraine disability weights by region

Region	Per cent treated	Average disability weight	Region	Per cent treated	Average disability weight
AFRO D	1	0.0298	EURO B2	1	0.0298
AFRO E	1	0.0298	EURO C	5	0.0289
AMRO A	20	0.0254	SEARO B	1	0.0298
AMRO B	2	0.0295	SEARO D	1	0.0298

AMRO D	2	0.0295	WPRO A	20	0.0254
EMRO B	1	0.0298	WPRO B1	1	0.0298
EMRO D	1	0.0298	WPRO B2	1	0.0298
EURO A	20	0.0254	WPRO B3	1	0.0298
EURO B1	5	0.0289	World		0.0288

5. Incidence, prevalence and mortality estimates for 2000

DISMOD II was used to estimate regional incidence rates and average durations by age and sex. These are summarized in Table 5.1 and Figure 5.1 below.

Table 5.1 Migraine: age-standardized incidence and prevalence estimates for WHO epidemiological subregions, 2000.

Subregion	Age-std. Incidence/100,000		Age-std. prevalence/100,000	
	Males	Females	Males	Females
AFRO D	33.8	88.3	1095.0	3219.9
AFRO E	31.8	75.7	1328.6	3014.8
AMRO A	105.8	323.5	4556.5	11614.9
AMRO B	76.5	241.5	3117.4	8875.3
AMRO D	112.1	220.8	4225.6	9345.6
EMRO B	41.2	93.8	1876.4	4465.9
EMRO D	38.2	106.8	1825.3	4370.4
EURO A	135.0	410.7	5519.7	16575.1
EURO B1	67.6	156.1	3011.8	6530.2
EURO B2	67.6	156.1	3011.8	6530.2
EURO C	78.7	152.8	3130.9	5892.3
SEARO B	65.1	138.0	2699.0	5552.2
SEARO D	63.3	167.9	2520.8	6853.7
WPRO A	76.6	233.3	3256.4	9906.7
WPRO B1	47.6	179.7	1916.5	7438.4
WPRO B2	98.7	207.7	3450.3	7559.2
WPRO B3	62.9	130.7	1839.4	4278.0
World	63.9	181.3	2760.3	7855.2

- Age-standardized to World Standard Population (47).

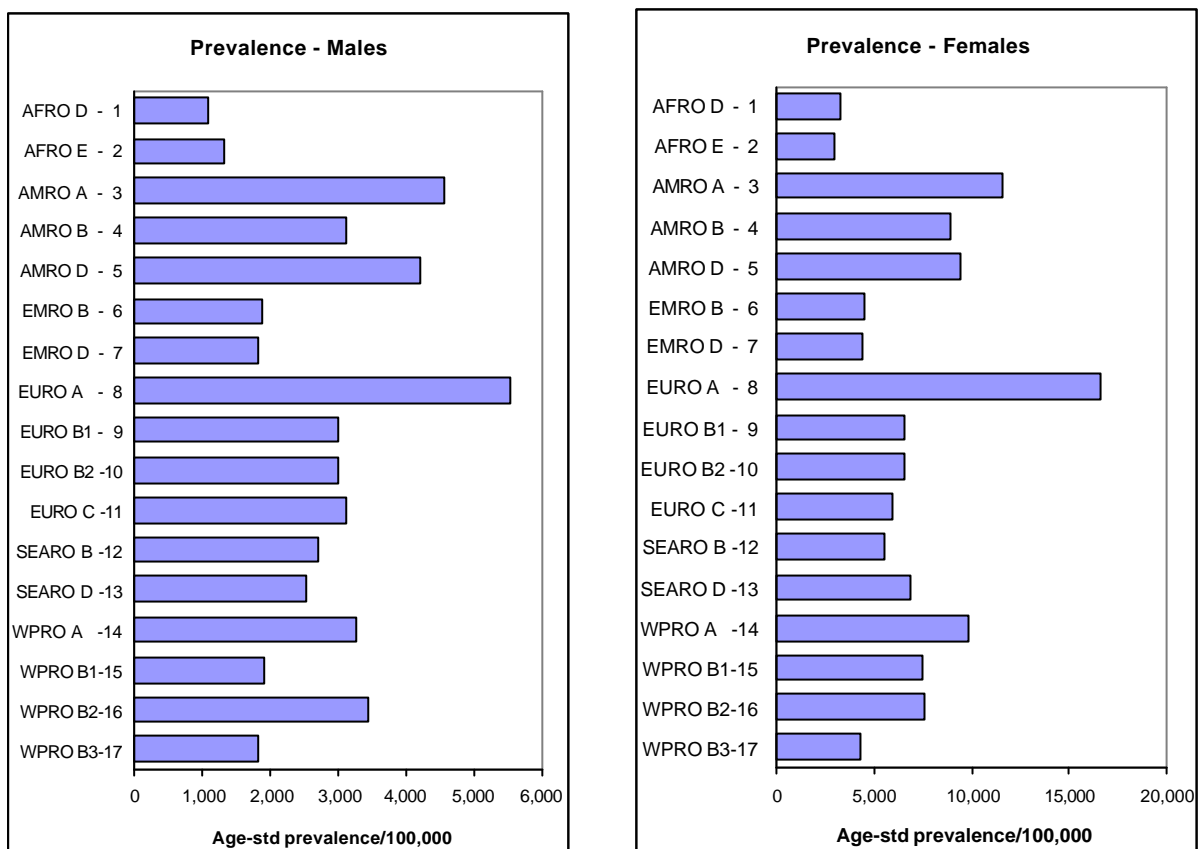


Figure 5.1 Age-standardized migraine prevalence rate estimates, WHO epidemiological subregions, by sex, 2000.

6. Global burden of migraine in 2000

General methods used for the estimation of the global burden of disease are given elsewhere(48). The tables and graphs below summarise the global burden of migraine estimates for the GBD 2000.

Table 6.1: Migraine: global total YLD, YLL and DALY estimates, 2000.

	<i>Males</i>	<i>Females</i>	<i>Persons</i>
YLD('000)			
<i>GBD1990</i>	-	-	-
<i>GBD2000</i>	2,044	5,492	7,536
YLL('000)			
<i>GBD1990</i>	-	-	-
<i>GBD2000</i>	1	2	3
DALY('000)			
<i>GBD1990</i>	-	-	-
<i>GBD2000</i>	2,045	5,494	7,539

Table 6.2: Migraine: YLD, YLL and DALY estimates for WHO epidemiological subregions, 2000.

Subregion	YLD/100,000		YLL/100,000		YLD	YLL	DALY
	Males	Females	Males	Females	('000)	('000)	('000)
AFRO D	30.0	93.5	0.0	0.0	207	0	207
AFRO E	41.8	98.0	0.0	0.0	236	0	236
AMRO A	82.1	221.9	0.0	0.0	473	0	474
AMRO B	90.5	245.1	0.0	0.0	746	0	746
AMRO D	127.8	282.0	0.0	0.0	146	0	146
EMRO B	60.6	148.4	0.0	0.0	144	0	144
EMRO D	57.5	131.5	0.0	0.0	130	0	130
EURO A	94.0	265.8	0.0	0.0	747	0	747
EURO B1	65.2	147.2	0.0	0.0	177	0	177
EURO B2	93.2	193.2	0.0	0.0	73	0	73
EURO C	68.6	123.6	0.0	0.0	240	0	240
SEARO B	75.9	159.4	0.1	0.1	464	0	464
SEARO D	75.8	198.4	0.0	0.0	1,823	0	1,823
WPRO A	53.3	146.5	0.0	0.0	151	0	151
WPRO B1	48.2	183.1	0.2	0.3	1,545	3	1,548

WPRO B2	102.4	218.1	0.0	0.0	228	0	228
WPRO B3	46.6	119.3	0.0	0.0	6	0	6
World	67.1	183.0	0.0	0.1	7,536	3	7,539

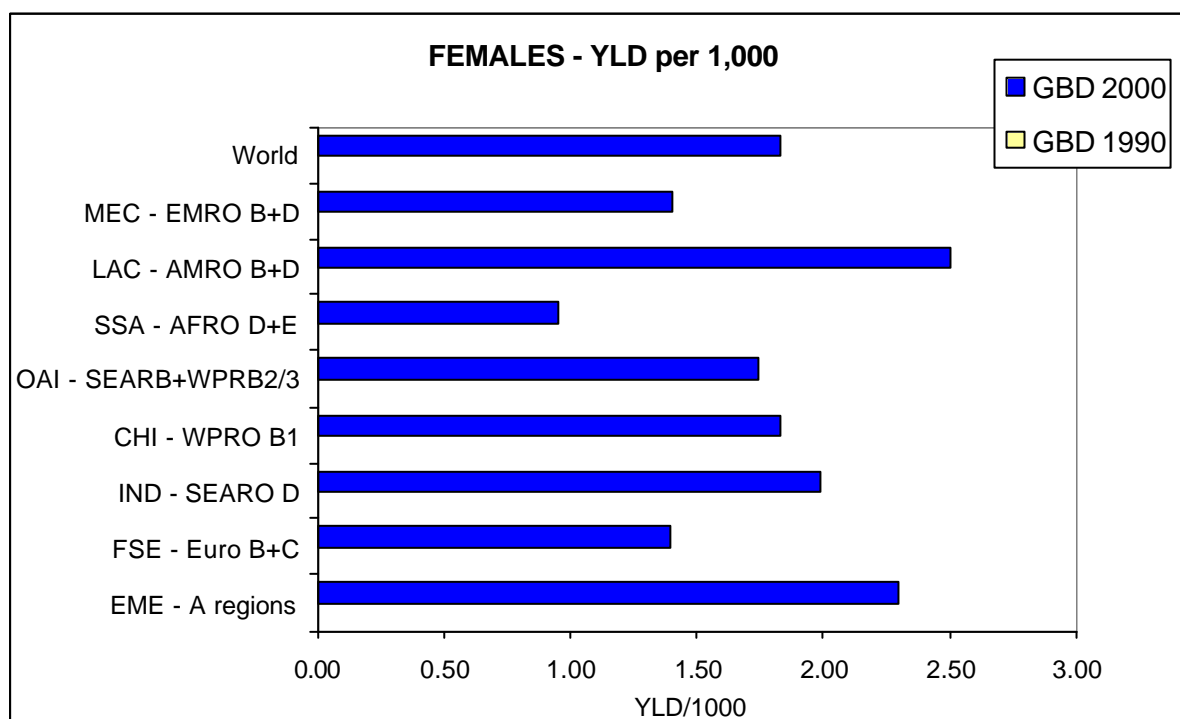
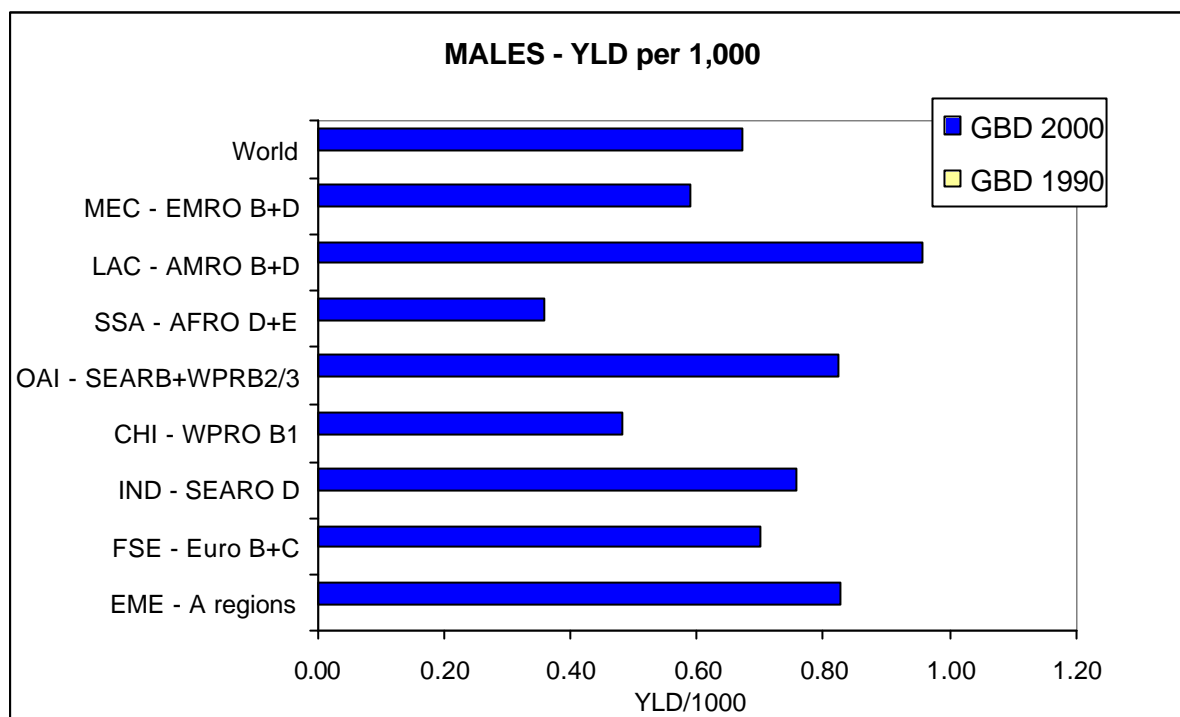


Figure 6.1 Total YLD rates, by sex, broad regions, 1990 and 2000.

7. Conclusions

These are version 1 estimates for the GBD 2000. Apart from uncertainty analysis, and any new or revised epidemiological data or evidence, the only further revisions of these estimates will involve revision of disability weights using information from the 2002-2003 World Health Survey.

We welcome comments and criticisms of these draft estimates, and information on additional sources of data and evidence. Please contact Colin Mathers (EBD/GPE) on email mathersc@who.ch

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