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Disease burden in Norway in 2016

ORIGINAL ARTICLE

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BACKGROUND
In order to address the health challenges facing the population, we must have an overview of the population's health sta
we have traditionally had a good overview of causes of death, but less is known about the disease burden from condition
morbidity, so-called non-fatal health loss. Our aim was to describe the total disease burden in Norway in 2016, its devel
last ten years and sex differences in the disease burden.

MATERIAL AND METHOD
We used results from the Global Burden of Diseases, Injuries and Risk Factors Study (GBD), which quantifies non-fatal
that it can be measured on the same scale as mortality in the form of years of life lost. The sum of 'years of life lost' plus
disability' gives the disease burden metric, 'disability-adjusted life years' (DALYs).

RESULTS
Non-communicable diseases such as cardiovascular disease, cancer, chronic obstructive pulmonary disease and dement
causes of years of life lost in both sexes in Norway in 2016. Years lived with disability accounted for 52 % of the disease l
in disability-adjusted life years. Musculoskeletal disorders, mental disorders and substance use disorders were particula
Over the last ten years, the disease burden (in age-adjusted rates) has decreased for many conditions that result in years
not for conditions that lead to years lived with disability.

INTERPRETATION
Non-fatal health loss constitutes a large and increasing proportion of the disease burden in the Norwegian population, v
new challenges for the healthcare system.

Main message

The Global Burden of Diseases, Injuries and Risk Factors Study (GBD) provides annually updated estimates of the disea
form of fatal and non-fatal health loss for both sexes and all ages in 195 countries/territories

Cardiovascular disease, cancer, chronic obstructive pulmonary disease and dementia were leading causes of years of life
in Norway in 2016

Musculoskeletal, mental and substance use disorders were leading causes of years lived with disability (non-fatal health

Non-fatal health loss constitutes a large and increasing proportion of the disease burden in the Norwegian population

If we aim to address the health challenges facing the population, we must have an overview of the population's health st
mandatory reporting to the Cause of Death Registry means that we have a good overview of diseases and injuries that re
registry publishes annually updated cause of death statistics (1). However, we lack a comparable overview of the prevale
that result mainly in morbidity, so-called non-fatal health loss. Musculoskeletal disorders and mental disorders, for exa
list of causes of sickness absence in Norway in 2017 (2). A comprehensive overview of the health status of a population r
figures for non-fatal diseases.

The Global Burden of Diseases, Injuries and Risk Factors Study (GBD) was launched in the 1990s as a collaboration bet
Health Organization (WHO) and the World Bank. The first report, *Investing in Health*, was published in 1993 (3). Analy
burden were initiated by the World Health Organization in the late 1990s, but since 2007 the GBD project has been led
for Health Metrics and Evaluation at the University of Washington in Seattle, USA, with long-term funding from the Bil
Foundation (4). The GBD project now publishes annually updated estimates of the disease burden from 1990 to the pre
countries and territories, for both sexes and all age groups (34 age categories). The aim is to provide the most detailed a
overview possible of diseases, injuries and risk factors that result in both death and non-fatal health loss, for use by heal
authorities, healthcare managers, researchers and the general public (5). The results can be used to show changes in the
over time and to compare the burden of different diseases against one another or between different groups, for example
countries, sexes or age groups. The most recent cycle of the GBD project (2016) was published in *The Lancet* in autumn
results from the project are also freely available via online visualisation tools, also in Norwegian (11).

The Centre for Disease Burden was established at the Norwegian Institute of Public Health in 2017 and collaborates clos
project. Its main responsibilities are to quality assure and help improve the Norwegian disease burden estimates, dissen
about disease burden analyses in Norway and conduct research. The aim of this article is to describe the disease burden
2016, its development over the last ten years and sex differences in the disease burden.

Material and method

In the following we will briefly describe the operational process in the GBD project, from obtaining health data to produ
disease burden estimates. Further details can be found in reports from the Centre for Disease Burden at the Norwegian
Health (12, 13) and in the most recent *Lancet* publications, in which the methods are summarised in appendices (6–10).

burden metrics 'years of life lost', 'years lived with disability' and 'disability-adjusted life years' are defined in Box 1.

Box 1 Years of life lost, years lived with disability and disability-adjusted life years as defined in the Global Disease Burden project (4)

Years of Life Lost (YLLs) are the expected number of years of life remaining when a death occurs. Deaths at a younger a assigned greater weight than deaths in old age

Years Lived with Disability (YLDs) associated with a disease are calculated by multiplying the estimated prevalence of t disability weight

Disability-Adjusted Life Years (DALYs) are the sum of years of life lost (YLLs) and years lived with disability (YLDs). Th disability-adjusted life years in a population for one year can be interpreted as the distance between the current health s population and a hypothetical, optimal scenario where the entire population remains healthy (without disability) into ol

The GBD project has its own list of diseases and injuries, which is organised hierarchically into four levels and is based o Health Organization's classification of diseases (International Classification of Diseases, ICD). The upper level of the hie three groups: i) communicable, maternal, neonatal, and nutritional diseases (also called group 1 diseases); ii) non-comm diseases and iii) injuries. There are 21 categories in level 2, while the final level consists of 333 diseases/injuries and gro The list changes over time and is under continual review. The GBD project collects published and unpublished worldwic from sources including population and health registries, health surveys and scientific publications, and calculates morta health loss and disease burden attributable to risk factors.

The statistical models of the GBD project are designed to generate disease burden estimates for all diseases, injuries and both sexes, all age groups, 195 countries/territories and all years (1990–the present year). Where good national data are GBD estimates will be based very closely on these. Where good data are lacking, the models will 'borrow' from other yea similar countries, so that a complete set of estimates is always generated. Estimates are thus produced even when data a missing; this is because the absence of an estimate would otherwise often be taken as evidence that the condition does n burden and thus does not constitute a health problem (5). The exact data sources used, including the Norwegian ones, c searchable online database (14). There is often a high degree of uncertainty associated with the disease burden estimate project therefore operates with 95 % uncertainty intervals (UI) for all estimates. New data sources are included each yea methods are continually refined. All calculations are therefore repeated for all calendar years at each annual update.

Calculation of years of life lost

Few countries have mandatory reporting of causes of death. The quality of such data therefore varies throughout the wo the Cause of Death Registry has data at the individual level back to 1951 (1). It is the 'underlying cause of death', i.e. 'the that initiated the chain of events leading directly to death' (15), that is shown in the statistics. The GBD project has intro 'garbage code' (16) to refer to codes that are used in cause of death statistics, but which cannot from a medical perspecti causes of death, for example, 'sudden death', 'cataracts' or 'respiratory failure'. In Norway, garbage codes constitute abo registered causes of death. For each garbage code, the GBD project defines a set of possible correct underlying causes of redistributes the garbage codes among these, resulting in differences between official statistics and GBD statistics.

Years of life lost (YLLs) refers to the expected number of years of life remaining when a death occurs. Remaining years o retrieved in the GBD project from a reference mortality table based on the lowest observed mortality rates worldwide, a both sexes. By taking into account the age distribution among those who died from a specific cause, one can calculate th of life lost due to each disease or injury.

Calculation of years lived with disability

To quantify the number of years lived with disability as a result of a disease, one must know how widespread the disease serious it is for those affected. In Norway, we generally have a limited overview of the prevalence of diseases that result fatal health loss, such as mental disorders and musculoskeletal disorders. The Norwegian estimates for the prevalence o are therefore largely based on data from other Western European countries.

In the GBD project, severity is expressed in terms of disability weights, which are numbers between 0 (completely healt (deceased). Disability weights are calculated from surveys of the general population and are the same for all countries. F given pairwise descriptions of persons with different medical conditions and are asked to decide which of the two is in b studying how an individual medical condition is rated relative to other medical conditions in repeated pairwise compari obtain an estimated relative ranking of all conditions with respect to severity. By asking the participants to compare the death to the value of avoiding chronic disease (for example: Which intervention offers the greatest benefit to public heal prevent 5 000 cases of chronic obstructive pulmonary disease, or one that can prevent 1 000 deaths?), the disability wei 'anchored' between the extremes of 0 and 1 (8, 12, 17, 18).

Years lived with disability (YLDs) associated with a disease are calculated by multiplying the estimated prevalence of the disability weight.

Summary measure of disease burden

The sum of years of life lost (YLLs) and years lived with disability (YLDs) is referred to as disability-adjusted life years (D represents a summary measure of disease burden. Years of life lost, years lived with disability and disability-adjusted lif expressed in numbers and age-adjusted rates per 100 000 persons. Demographic changes in the population, such as po and ageing, can be taken into account through the use of age-adjusted rates.

Disease burden attributable to risk factors

Disease burden analyses also include calculations of the proportion of the disease burden attributable to potentially mo factors. The list of risk factors is also arranged hierarchically and is divided into three main categories: environmental/o behavioural risks and metabolic risks. The GBD 2016 project performed calculations for a total of 84 risk factors or grou

Results

The absolute disease burden in Norway increased from 1.16 million disability-adjusted life years in 2006 to 1.21 million disease burden measured in age-adjusted rates per 100 000 persons decreased by 9 % (95 % uncertainty interval 5–14 % 2016, the proportion of the disease burden due to years lived with disability increased from 48 % to 52 %, and this propo in women (57 %) than in men (48 %). Non-communicable diseases accounted for 87 % of the disease burden in 2016, wh accounted for 9 %, and infectious, maternal, neonatal and nutritional diseases 4 %.

Non-communicable diseases such as cardiovascular disease, cancer, chronic obstructive pulmonary disease and dement responsible for many of the deaths and years of life lost in Norway in 2016, in both women and men (Tables 1 and 2). In ischaemic heart disease was by far the most common cause of death, followed by Alzheimer's disease and other dementi calculating years of life lost, deaths that occur at a younger age are assigned greater weight than deaths in old age. Suicid was ranked in ninth place among causes of death in men in 2016, but was the third most important cause of years of life to overdose were also a leading cause of years of life lost in men. In women, breast cancer – which often has a relatively onset – ranked more highly as a cause of years of life lost than of number of deaths. In women, ovarian and pancreatic c among the ten most important causes of years of life lost. For both of these conditions, however, the 95 % uncertainty in overlapped with those for suicide, which was estimated to be responsible for some 6 000 years of life lost among women

Table 1

Disease burden in Norway 2016. The ten leading causes of death in 2016 and changes over the period 2006–16

Men						Women				
				Change[3] (%)						Cha
		Number of deaths[1] (95 % UI)	Percentage[2] (%)	Number	Age-adjusted		Number of deaths[1] (95 % UI)	Percentage[2] (%)	Nu
1	Ischaemic heart disease	3 840 (3 359–4 310)	18.6	-11.7[4]	-28.5[4]	1 Ischaemic heart disease	3 639 (3 179–4 118)	17.1	-1
2	Alzheimer's disease and other dementias	1 578 (1 279–1 947)	7.7	20.6[4]	-2.9	2 Alzheimer's disease and other dementias	3 199 (2 615–3 830)	15.1	1
3	Cerebrovascular disease	1 296 (1 092–1 508)	6.3	-6.5	-23.7[4]	3 Cerebrovascular disease	1 651 (1 355–1 961)	7.8	-1
4	Cancer of the trachea, bronchus and lung	1 255 (1 071–1 456)	6.1	-1.2	-21.4[4]	4 Chronic obstructive pulmonary disease	1 188 (1 014–1 374)	5.6	1
5	Prostate cancer	1 158 (837–1 362)	5.6	7.3	-12.6	5 Cancer of the trachea, bronchus and lung	967 (817–1 134)	4.5	1
6	Chronic obstructive pulmonary disease	1 134 (977–1 312)	5.5	6.6	-12.5	6 Lower respiratory infections	918 (724–1 131)	4.3	-
7	Colorectal cancer	878 (752–1 019)	4.3	9.2	-11.7	7 Colorectal cancer	843 (716–987)	4.0	-
8	Lower respiratory infections	849 (684–1 033)	4.1	9.4	-12.9	8 Breast cancer	727 (619–844)	3.4	-
9	Deliberate self-harm (suicide)	431 (342–598)	2.1	5.0	-12.1	9 Other cardiovascular diseases	636 (544–740)	3.0	
10	Fall-related injuries	427 (250–520)	2.1	14.8	-7.7	10 Fall-related injuries	483 (237–610)	2.3	
	All causes	20 616 (18 319–22 875)	100	3.7	-15.9[4]	All causes	21 255 (18 692–24 015)	100	-

[1]Number of deaths with 95 % uncertainty intervals (UI)

[2]Percentage of total deaths

[3]Percentage change 2006–2016 in numbers and age-adjusted rates

[4]Change significant at 5 % level

Table 2

Disease burden in Norway 2016. The ten leading causes of years of life lost in 2016 and changes over the period 2006–16

Men				Change[3] (%)		Women				Chan
		Number YLLs[1] (95 % UI)	Percentage[2] (%)	Number	Age-adjusted		Number YLLs[1] (95 % UI)	Percentage[2] (%)	Numl
1	Ischaemic heart disease	51 285 (44 281–58 126)	15.6	-15.5[4]	-31.3[4]	1 Ischaemic heart disease	29 438 (25 298–33 667)	11.8	-2
2	Cancer of the trachea, bronchus and lung	22 924 (19 297–26 751)	7.0	-3.9	-24.2[4]	2 Alzheimer's disease and other forms of dementia	22 460 (18 335–27 118)	9.0	4
3	Deliberate self-harm (suicide)	17 263 (13 677–23 272)	5.2	1.2	-14.7[4]	3 Cancer of the trachea, bronchus and lung	17 756 (14 981–20 804)	7.1	7
4	Cerebrovascular disease	15 615 (13 106–18 196)	4.7	-11.2	-27.4[4]	4 Cerebrovascular disease	14 756 (12 266–17 394)	5.9	-2
5	Chronic obstructive pulmonary disease	14 530 (12 399–16 970)	4.4	5.3	-14.9[4]	5 Breast cancer	14 191 (11 964–16 622)	5.7	-5
6	Colorectal cancer	14 352 (12 089–16 752)	4.4	7.8	-13.5	6 Chronic obstructive pulmonary disease	13 824 (11 600–16 332)	5.6	9
7	Alzheimer's disease and other forms of dementia	14 027 (11 290–17 421)	4.3	16.3[4]	-3.6	7 Colorectal cancer	12 102 (10 174–14 321)	4.9	-1
8	Prostate cancer	13 830 (9 925–16 502)	4.2	6.5	-14.1	8 Ovarian cancer	7 095 (5 785–8 565)	2.8	1
9	Mental disorders due to use of illegal substances	11 353 (8 929–13 754)	3.4	1.0	-13.9	9 Lower respiratory infections	6 574 (5 249–7 931)	2.6	-1
10	Lower respiratory infections	8 022 (6 536–9 688)	2.4	1.4	-17.1	10 Pancreatic cancer	6 272 (5 227–7 447)	2.5	1
	All causes	329 448 (289 028–369 531)	100	-1.1	-19.2[4]	All causes	249 070 (215 047–286 269)	100	-5

[1]Number of years of life lost (YLLs) with 95 % uncertainty intervals (UI)

[2]Percentage of total years of life lost

[3]Percentage change 2006–16 in number and age-adjusted rates

[4]Change significant at 5 % level

In general, age-adjusted rates for the leading causes of both death and years of life lost decreased for both sexes over the (Tables 1 and 2). Ischaemic heart disease and cerebrovascular disease (stroke) showed the largest decreases with respec and years of life lost. For men, the number of years of life lost due to lung cancer, chronic obstructive pulmonary disease decreased, and for women there was a decrease in deaths and years of life lost due to breast cancer.

Musculoskeletal disorders, especially low back and neck pain, and mental disorders, especially anxiety disorders and de (Table 3), were responsible to a large degree for years lived with disability. Diseases of the skin and subcutaneous tissue diseases and oral disorders also appeared high on the list for both sexes. Migraine and diabetes mellitus were also key ca lived with disability.

Table 3

Disease burden in Norway 2016. The ten leading causes of years lived with disability in 2016 and changes over the period 2006–16

Men				Change[3] (%)		Women				Cha
		Number YLDs[1] (95 % UI)	Percentage[2] (%)	Number	Age-adjusted			Number YLDs[1] (95 % UI)	Percentage[2] (%)	Nu
1	Low back and neck pain	45 061 (31 622–60 501)	15.1	12.6[4]	-4.3	1	Low back and neck pain	53 351 (37 570–70 603)	15.9	1
2	Diseases of the skin and subcutaneous tissue	22 153 (15 105–31 527)	7.4	15.1[4]	1.4	2	Diseases of the skin and subcutaneous tissue	27 015 (18 272–38 855)	8.1	1
3	Sense organ diseases	18 655 (12 648–26 725)	6.2	19.7[4]	-1.0	3	Migraine	25 611 (16 595–35 874)	7.7	1
4	Depressive disorders	13 623 (9 391–18 563)	4.6	19.2[4]	3.1	4	Depressive disorders	21 322 (14 715–28 906)	6.4	1
5	Fall-related injuries	13 246 (8 923–18 587)	4.4	18.7[4]	0.7	5	Anxiety disorders	19 682 (13 940–26 696)	5.9	1
6	Migraine	12 311 (7 885–17 310)	4.1	14.9[4]	0.5	6	Sense organ diseases	18 838 (12 832–26 538)	5.6	1
7	Diabetes mellitus	11 975 (8 235–16 590)	4.0	17.4[4]	-3.7	7	Fall-related injuries	13 149 (9 261–18 037)	3.9	1
8	Anxiety disorders	11 272 (7 856–15 376)	3.8	14.8[4]	-0.1	8	Oral disorders	12 697 (7 936–18 740)	3.8	1
9	Oral disorders	11 065 (6 717–17 277)	3.7	22.3[4]	1.2	9	Other musculoskeletal disorders	9 684 (6 471–13 465)	2.9	-
10	Mental disorders due to use of illegal substances	8 925 (6 430–11 601)	3.0	0.8	-13.4[4]	10	Diabetes mellitus	9 562 (6 448–13 126)	2.9	1
	All causes	299 263 (222 267–387 717)	100	15.7[4]	-1.6		All causes	334 592 (249 070–431 502)	100	1

[1]Years lived with disability (YLDs) with 95 % uncertainty intervals (UI)

[2]Percentage of total YLDs

[3]Percentage change 2006–2016 in numbers and age-adjusted rates

[4]Change significant at 5 % level

There was a consistent increase in the absolute number of years lived with disability in the population over the period 2(little change in age-adjusted rates. Exceptions were a reduction in age-adjusted rates for mental disorders due to the use substances for men, and a reduction in 'other musculoskeletal disorders' for women.

The leading causes of disability-adjusted life years in Norway in 2016 were generally similar for men and women (Table ten most important disease groups were common to both sexes, including cardiovascular disease, lung cancer, dementia and neck pain. However, in women, migraine, anxiety and depression were also among the leading causes of disability-a whereas in men, substance use disorders, fall-related injuries and chronic obstructive pulmonary disease were high on t only two of the ten leading causes of disability-adjusted life years resulted exclusively from years lived with disability (lo pain, and sense organ diseases), whereas in women five out of ten conditions did so.

Table 4

Disease burden in Norway 2016. The ten leading causes of disability-adjusted life years1 (DALYs) in 2016 and changes over the peri

Men					Change[4] (%)		Women				
		Number DALYs[2] (95 % UI)	Percentage[3] (%)	Percentage YLLs (%)	Number	Age-adjusted		Number DALYs[2] (95 % UI)	Percentage (%)	Percentage[3] YLLs (%)	
1	Ischaemic heart disease	56 654 (49 138–63 388)	9.0	90.5	-13.5[5]	-29.6[5]	1 Low back and neck pain	53 351 (37 570–70 603)	9.1	0.0	

Men					Change[4] (%)		Women			
		Number DALYs[2] (95 % UI)	Percentage[3] (%)	Percentage YLLs (%)	Number	Age-adjusted		Number DALYs[2] (95 % UI)	Percentage (%)	Percentage[3] YLLs (%)
2	Low back and neck pain	45 061 (31 622–60 501)	7.2	0.0	12.6[5]	-4.3	2 Ischaemic heart disease	32 927 (28 668–37 359)	5.6	89.4
3	Cancer of the trachea, bronchus and lung	23 322 (19 653–27 150)	3.7	98.3	-3.4	-23.9[5]	3 Alzheimer's disease and other forms of dementia	28 878 (23 877–34 957)	4.9	77.8
4	Diseases of the skin and subcutaneous tissue	22 744 (15 582–32 236)	3.6	2.6	15.7[5]	1.7	4 Diseases of the skin and subcutaneous tissue	27 618 (18 934–39 175)	4.7	2.2
5	Cerebrovascular disease	21 649 (18 614–24 825)	3.4	72.1	-6.6	-23.4[5]	5 Migraine	25 611 (16 595–35 874)	4.4	0.0
6	Mental disorders due to use of illegal substances	20 278 (16 688–23 804)	3,2	56.0	1.0	-13.6[5]	6 Cerebrovascular disease	21 558 (18 393–24 716)	3.7	68.4
7	Chronic obstructive pulmonary disease	20 203 (17 700–22 899)	3.2	71.9	6.1	-14.0[5]	7 Depressive disorders	21 322 (14 715–28 906)	3.7	0.0
8	Fall-related injuries	18 750 (14 204–24 270)	3.0	29.4	14.5[5]	-3.5	8 Anxiety disorders	19 682 (13 940–26 696)	3.4	0.0
9	Sense organ diseases	18 655 (12 648–26 725)	3.0	0.0	19.7[5]	-1.0	9 Sense organ diseases	18 838 (12 832–26 538)	3.2	0.0
10	Alzheimer's disease and other forms of dementia	17 768 (14 335–21 899)	2.8	78.9	16.6[5]	-3.3	10 Cancer of the trachea, bronchus and lung	18 098 (15 335–21 177)	3.1	98.1
	All causes	628 711 (535 366–718 986)	100	52.4	6.2	-11.2[5]	All causes	583 662 (493 252–685 906)	100	42.7

[1]The sum of years of life lost (YLLs) plus years lived with disability (YLDs) is known as disability-adjusted life years (DA

[2]Number of disability-adjusted life years (DALYs) with 95 % uncertainty intervals (UI)

[3]Percentage of total DALYs

[4]Percentage change over 2006–2016 in numbers and age-adjusted rates

[5]Change significant at 5 % level

Figure 1 shows the distribution, by age, of disease burden in the form of deaths, years of life lost, years lived with disabil disability-adjusted life years, in 2016. Cancer was an important cause of death from the age of 40–50, whereas cardiova dementia dominated in the oldest age groups. Accidents, overdoses and suicides were leading causes of years of life lost and adults up to the age of 40, whereas cancer was more prominent for those between 40 and 80 years of age. In Norwa who die, including those who die prematurely resulting in years of life lost, are over the age of 60–70 years. However, th years lived with disability is already considerable from the age of 10–20 years and remains high throughout the lifespan disorders become important from the age of about 10, for example, and musculoskeletal disorders from the age of about

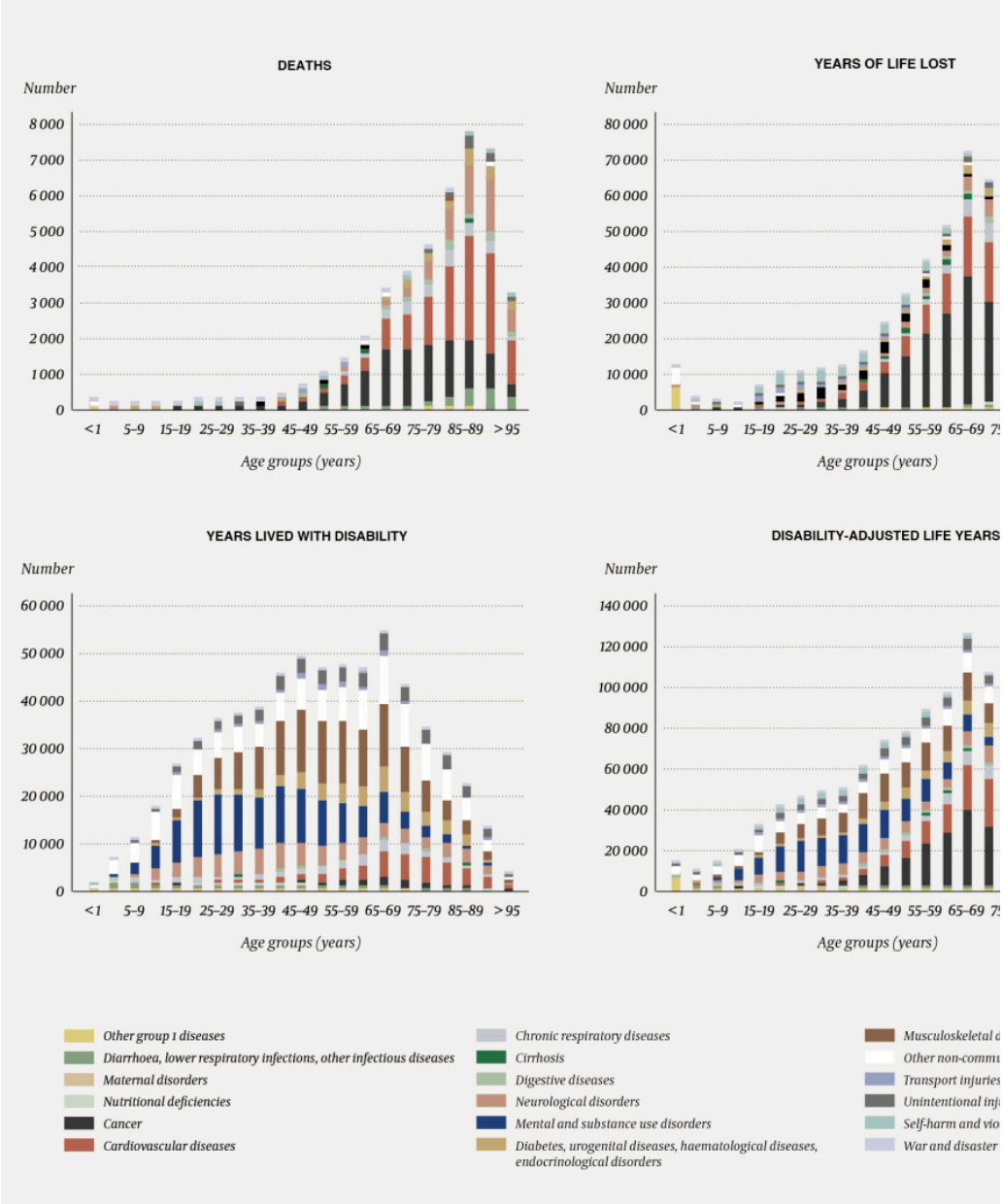

Figure 1 Disease burden in Norway 2016, estimates from the GBD project. All age groups are represented by columns, although no labelled underneath (e.g. 10–14 lies in between 5–9 and 15–19). Other group 1 diseases = HIV/AIDS and tuberculosis, neglected tro malaria, neonatal disorders and others.

Discussion

The disease burden in Norway in 2016 was dominated by non-communicable diseases. Cardiovascular disease, cancer, c obstructive pulmonary disease and dementia were leading causes of years of life lost among both sexes. Suicide was also cause of years of life lost, especially for men. Years lived with disability accounted for 48 % of the disease burden in men women. Musculoskeletal and mental disorders in particular were important contributors to this. Although age-adjusted conditions that lead to years of life lost have decreased over the last ten years, there has been little change in the rates fo primarily result in years lived with disability.

As a result of population growth and ageing, there was an overall increase in the absolute burden of disease in Norway i 2006–16, measured in the number of disability-adjusted life years.

However, there was a decrease in the number of years of life lost from cardiovascular disease, which was a major cause of life lost among both sexes, and the same applied to the age-adjusted rates. This is most likely a result of beneficial life the Norwegian population in recent years, in addition to progress in the prevention and treatment of cardiovascular dis

For lung cancer and chronic obstructive pulmonary disease, the smoking-related causes of death, the pattern was somev men and women. There is a long latency from reduced smoking in the population to a visible effect in the form of a redu related causes of death, and there has been a phase shift in the smoking epidemic for men and women (20). For men, th rates for years of life lost to lung cancer and chronic obstructive pulmonary disease fell in the period 2006–16, while the change in the rates for women. Nor were there any significant changes in the number of years of life lost to lung cancer obstructive pulmonary disease for either men or women in the period.

The trend in years lived with disability was generally not positive in the period 2006–16. For both men and women, the years lived with disability (non-fatal health loss) due to low back and neck pain, anxiety, depression, fall-related injuries increased, while the age-adjusted rates were stable. This indicates that the absolute increase may be explained by popul

and/or ageing – not by an increase in illness among people generally. On the other hand, stable age-adjusted rates indic not become more adept at preventing or treating these conditions, which account for a large and growing proportion of disease in the Norwegian population.

Despite the fact that women had more years lived with disability than men in 2016, men had a larger total disease burde reference mortality table used to calculate years of life lost in the GBD project is the same for both sexes, and men gener shorter life expectancy than women, men lose more years of life. For example, women and men had approximately the s deaths due to ischaemic heart disease in 2016, but women lost significantly fewer years of life because men die of cardio at an earlier age than women.

The burden of disease is to a large extent caused by the same disease groups in men and women. Mental and substance example, together accounted for an approximately equal proportion of years lived with disability in men and women, 13 respectively. While anxiety and depression were the predominant causes in women, men were affected to a greater exte use disorders.

One of the major innovations of the GBD project is the fact that it highlights years lived with disability in a population. people suffer but do not die from are often invisible in traditional health and cause of death statistics. The disease burde conditions is analysed in various ways in different academic communities and disciplines, and this makes cross-compar challenging. The GBD project attempts to quantify years lived with disability using one shared methodology, so that the measured on the same scale as years of life lost. It may well come as a surprise to many that a little more than half (52 % burden in the Norwegian population in 2016 could be ascribed to years lived with disability.

Conclusion

The GBD project is an international epidemiological project. Estimates of the burden of disease, injury and risk factors f 1990 onward are updated annually, for 195 countries and territories worldwide, for both sexes and all age groups. This p overview of the health of populations which in practice is impossible to obtain for any single country alone. In 2016, the in Norway was dominated by non-communicable diseases such as cardiovascular disease, low back and neck pain, canc mental disorders. Although the last decade has shown positive developments for conditions that lead to years of life lost cardiovascular diseases, the same trend has not been observed for conditions that generally result in years lived with dis

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