3

World mental health today

EPIDEMIOLOGY
ECONOMIC COSTS
KEY GAPS
DEMAND FOR CARE

Chapter summary

In this chapter we outline the state of mental health and mental health systems in the world and show that mental health needs are high and that responses are insufficient and inadequate. We present the latest data available on the global prevalence and cost of mental disorders, looking beyond the impact of mortality and disability to also consider the formidable economic and social costs involved. This chapter also highlights the results of WHO's most recent *Mental health atlas* to reveal some of the enduring critical gaps in, and barriers to, mental health care around the world.

Key messages from this chapter are:

- In all countries, mental disorders are highly prevalent and largely undertreated.
- Mental disorders are the leading cause of years lived with disability and suicide remains a major cause of death globally.
- The economic consequences of mental health conditions are enormous, with productivity losses significantly outstripping the direct costs of care.
- Mental health systems all over the world are marked by major gaps in governance, resources, services, information and technologies for mental health.
- Several factors stop people from seeking help for mental health conditions, including limited access to quality services, low levels of health literacy about mental health, and pervasive stigma.

Despite mental health's critical importance to our health and well-being, too many of us do not get the support we need. In 2019, an estimated one in eight people globally were living with a mental disorder *(96)*. At the same time, the services, skills and funding available for mental health remain in short supply, and fall far below what is needed, especially in LMICs.

In all countries, mental health conditions are widespread (yet misunderstood) and undertreated, and services to address them are insufficiently resourced (see Fig. 3.1). And, as discussed in Chapter 2 Principles and drivers in public mental health, the various interacting biopsychosocial factors that undermine mental health – ranging from population-wide stressors such as poverty, conflict and social inequalities to individual factors such as low self-worth – will continue to generate threats to mental health for the foreseeable future.

This chapter presents the latest data available at the time of writing (see Box 3.1 Data for assessing world mental health). In most cases, the data pre-date the COVID-19 pandemic, which has greatly exacerbated the risk factors for mental health conditions for many people. The pandemic is sure to impact the prevalence and burden of mental disorders, just as access to mental health services has been compromised (see Chapter 2, In focus: COVID-19 and mental health). A long-term upsurge in the number and severity of mental health conditions worldwide has been anticipated and, as shown below, the most recent global estimates confirm this *(97, 69)*.

FIG. 3.1

Mental health conditions are widespread, undertreated and under-resourced

Source: IHME, 2019 (*98*); WHO, 2021 (*5*).

INSIGHT

BOX 3.1

Data for assessing world mental health

To speak to the broadest group of stakeholders possible, this report generally uses the umbrella term "mental health conditions", which covers mental disorders, psychosocial disabilities and other mental states associated with significant distress, impairment in functioning, or risk of self-harm. But when describing prevalence rates and global health estimates in this chapter, we refer to "mental disorders" since this term more accurately reflects data that are being collected and reported, and its scope is clearly defined by WHO's ICD-11. We similarly refer in this chapter to diagnostic categories such as "depressive disorders" or "anxiety disorders", rather than using the more general terms "depression" and "anxiety" as we do elsewhere in this report.

Mental disorders are distinct from neurological disorders and substance use disorders. The latter two, while not a focus of this report, are mentioned in this chapter to give a broad picture of the needs that mental health decision-makers often are responsible for in LMICs.

Measurement and monitoring of disease incidence, prevalence and mortality as well as disease distribution and determinants within and across populations – the defining features of epidemiology – provide vital information for health service planning, delivery and evaluation. The primary international sources of epidemiological data used in this chapter are WHO's Global Health Estimates (GHE) and the Global Burden of Diseases, Injuries and Risk Factors Study 2019 (GBD 2019) by the Institute of Health Metrics and Evaluation (IHME). These are closely linked in terms of mental health estimates. Together, they provide point prevalence and associated disease burden estimates for all major categories of communicable and noncommunicable diseases as well as injuries.

The term 'burden of disease' is only used in relation to published epidemiological assessments. This is the standard term used in public health for population-level impact estimates (e.g., disability-adjusted life years, years of life lost to premature mortality and years of healthy life lost to disability).

Estimates have to be interpreted with caution. These long-standing global studies offer the best available evidence of the extent, distribution and public health impact of mental disorders across age groups, gender and countries (grouped by income or geographical location). But while current estimates incorporate the latest available data and methodological advances in disease modelling, they remain uncertain because of the paucity of epidemiological data for mental disorders in many countries. In particular, estimates are often based on incomplete input data that do not cover all parameters or all countries, and on information that is outdated or poor quality. Moreover, it is important to acknowledge that mental disorders can be conceptualized in different ways across cultures, which raises challenges for measuring them from a particular reference point, such as in the global burden of disease studies.

3.1 Epidemiological overview

3.1.1 Prevalence

Pre-pandemic, in 2019, an estimated 970 million people in the world were living with a mental disorder, 82% of whom were in LMICs *(96)*.[1] Between 2000 and 2019, an estimated 25% more people were living with mental disorders, but since the world's population has grown at approximately the same rate the (point) prevalence of mental disorders has remained steady, at around 13% (see Fig. 3.2) *(99)*.

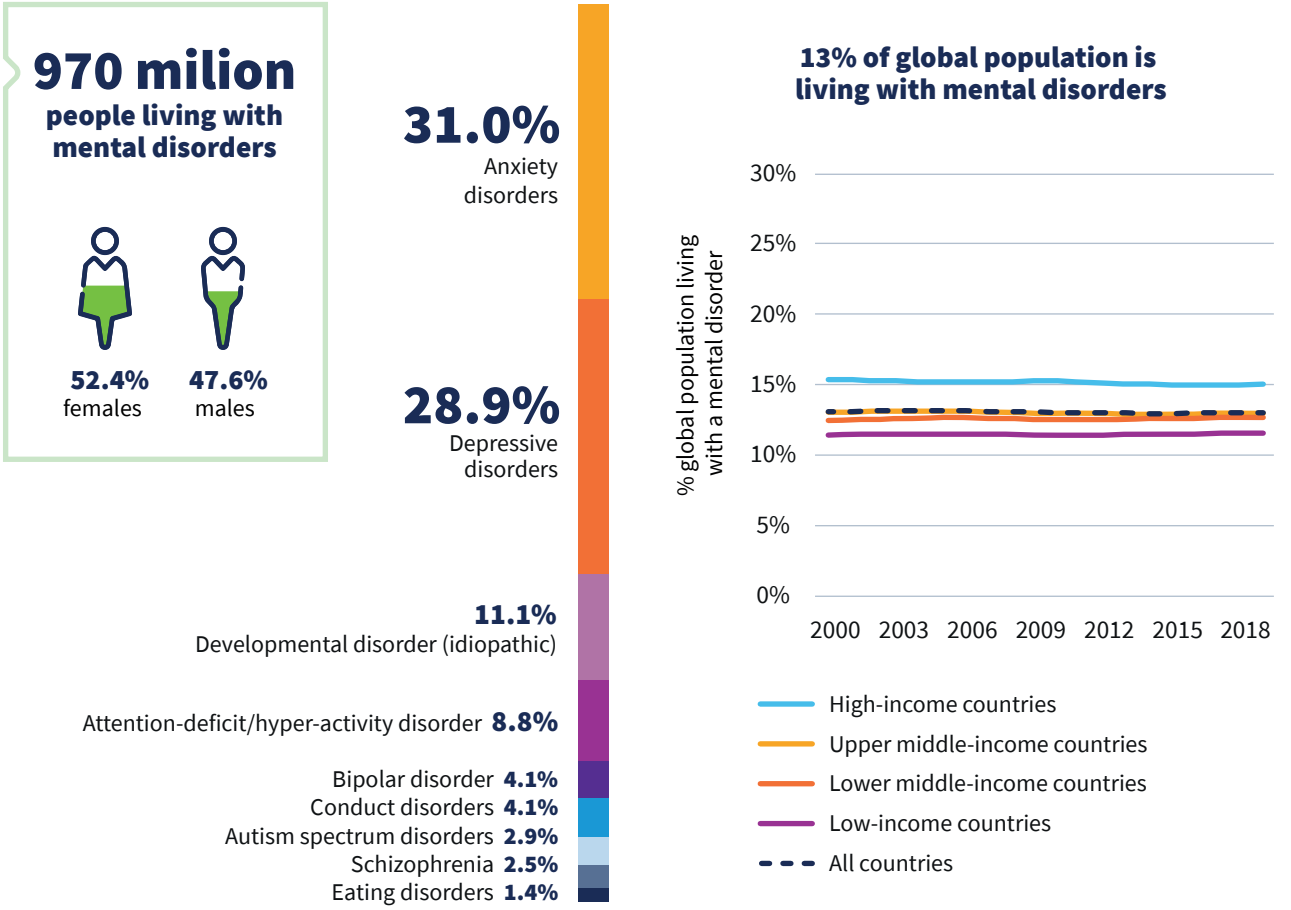
Additionally, according to various estimates, 283 million people had alcohol use disorders in 2016 *(100)*, 36 million people had drug use disorders in 2019 *(101)*, 55 million people had dementia in 2019 *(102)* and 50 million people had epilepsy in 2015 *(9)*. In many countries mental health care systems are responsible for the care of people with these conditions.

970 million
people globally were living with a mental disorder in 2019.

[1] This estimate includes people living with schizophrenia, depressive disorders (including dysthymia), anxiety disorders, bipolar disorder, autism spectrum disorders, attention-deficit/hyperactivity disorder, conduct disorder, idiopathic developmental intellectual disability, eating disorders and other mental disorders, as covered in the GBD 2019.

FIG. 3.2

The global prevalence of mental disorders in 2019



Source: IHME, 2019 *(99)*.

The prevalence of mental disorders varies with sex and age (see Table 3.1). In both males and females, anxiety disorders and depressive disorders are the two most common mental disorders. Anxiety disorders become prevalent at an earlier age than depressive disorders, which are rare before ten years of age. They continue to become more common in later life, with highest estimates in people between 50 and 69. Among adults, depressive disorders are the most prevalent of all mental disorders.

In 2019, 301 million people globally were living with anxiety disorders; and 280 million were living with depressive disorders (including both major depressive disorder and dysthymia). In 2020, these numbers rose significantly as a result of the COVID-19 pandemic (see Box 3.2 Depression and anxiety in times of COVID-19).

Schizophrenia, which occurs in 24 million people and in approximately 1 in 200 adults (aged 20 years and over), is a primary concern of mental health services in all countries (see Table 3.1). In its acute states, it is the most impairing of all health conditions (see Box 3.3 Severity of mental health conditions and the principle of vertical equity) *(103)*. Bipolar disorder, another key concern of mental health services around the world, occurs in 40 million people and approximately 1 in 150 adults globally in 2019 (see Table 3.1). Both disorders primarily affect working-age populations.

TABLE 3.1

Prevalence of mental disorders across age and sex (2019)

	ALL AGES (MILLIONS)	ALL AGES (%)			AGE (%)								AGED 20+ YEARS (%)		
		ALL	MALE	FEMALE	< 5	5-9	10-14	15-19	20-24	25-49	50-69	70+	ALL	MALE	FEMALE
Mental disorders	970	13.0	12.5	13.5	3.0	7.6	13.5	14.7	14.1	14.9	14.7	13.1	14.6	13.4	15.7
Schizophrenia	24	0.3	0.3	0.3				0.1	0.3	0.5	0.5	0.2	0.5	0.5	0.4
Depressive disorders[a]	280	3.8	3.0	4.5		0.1	1.1	2.8	4.0	4.8	5.8	5.4	5.0	4.0	6.0
Bipolar disorder	40	0.5	0.5	0.6			0.2	0.6	0.7	0.7	0.7	0.5	0.7	0.7	0.7
Anxiety disorders[b]	301	4.0	3.0	5.0	0.1	1.5	3.6	4.6	4.7	4.9	4.8	4.4	4.8	3.6	5.9
Eating disorders[c]	14	0.2	0.1	0.2			0.1	0.3	0.4	0.3			0.2	0.2	0.3
Autism spectrum disorders	28	0.4	0.6	0.2	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.2
Attention-deficit/ hyper-activity disorder	85	1.1	1.7	0.6	0.2	2.4	3.1	2.4	1.7	0.9	0.3		0.7	0.4	1.1
Conduct disorder	40	0.5	0.7	0.4		1.1	3.6	2.1							
Developmental disorder (idiopathic)[d]	108	1.5	1.5	1.4	2.2	2.3	2.2	2.0	1.8	1.3	0.7	0.4	1.1	1.1	1.1
Other mental disorders[e]	117	1.6	1.9	1.3			0.1	0.4	1.0	2.2	2.6	2.7	2.2	2.7	1.8

Source: IHME, 2019 *(96)*.

[a] Includes major depressive disorder and dysthymia.

[b] Includes all anxiety disorders and PTSD.

[c] Includes anorexia and bulimia nervosa.

[d] For more information on developmental disorder and autism spectrum disorders see the forthcoming *WHO-UNICEF Report on Developmental Delays and Disabilities*.

[e] A residual cause within GBD which includes personality disorders.

Note. These are GBD 2019 data and do not necessarily represent ICD-11 categorization. Blank cells indicate 0.0%. Rates are adjusted for independent comorbidity but not for dependent comorbidity. All prevalence data reflect point prevalence, except for bipolar disorder for which a 12-month prevalence was calculated.

CASE STUDY

BOX 3.2

Depression and anxiety in times of COVID-19

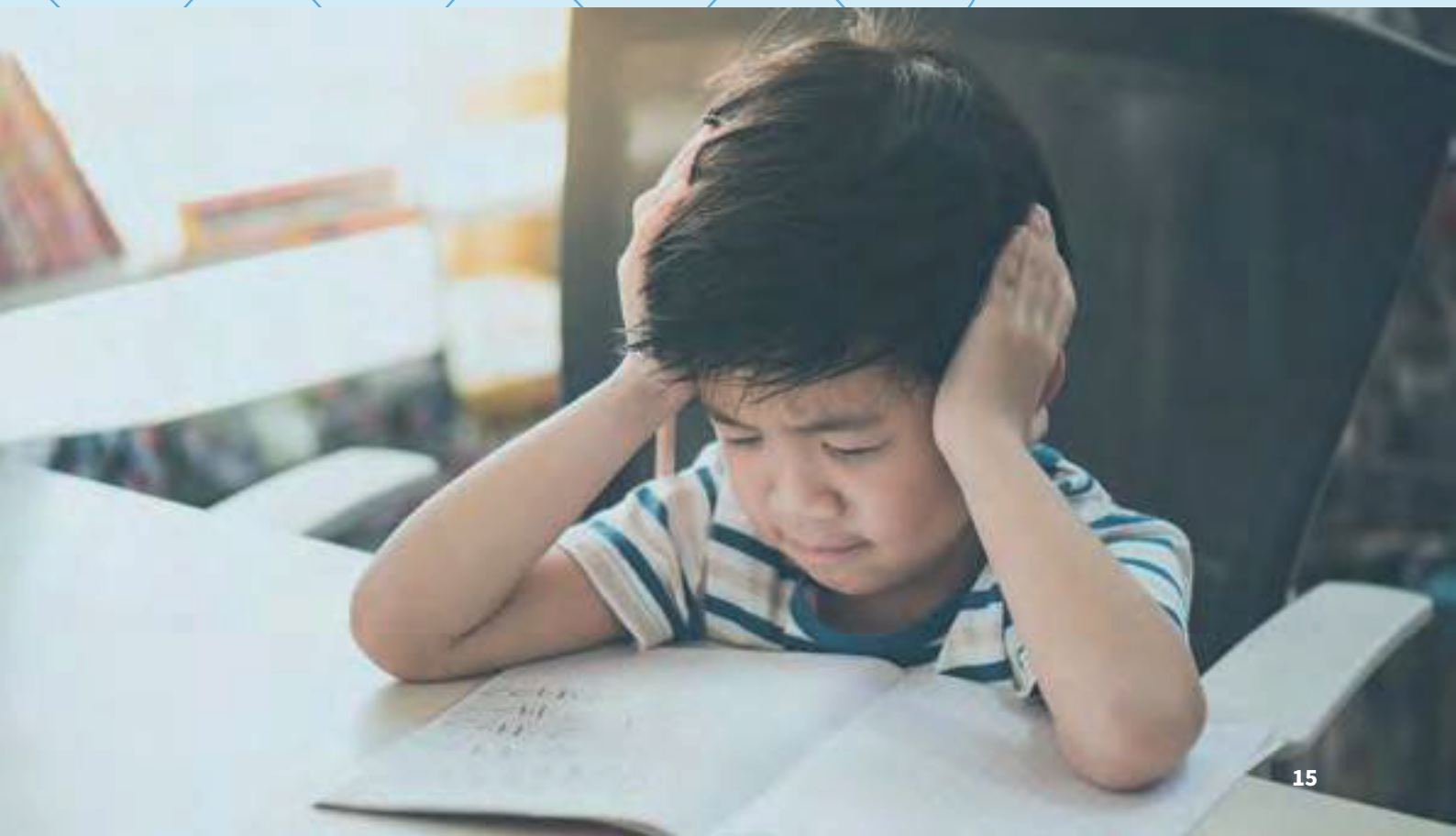
GBD 2020 estimated a substantial increase in depressive and anxiety disorders as a result of the COVID-19 pandemic, taking into account many of the uncertainties around epidemiological estimates of mental disorders in major emergencies.

Before the pandemic, an estimated 193 million people (2 471 cases per 100 000 population) had major depressive disorder; and 298 million people (3 825 cases per 100 000 population) had anxiety disorders in 2020. After adjusting for the COVID-19 pandemic, initial estimates show a jump to 246 million (3 153 cases per 100 000 population) for major depressive disorder and 374 million (4 802 per 100 000 population) for anxiety disorders.

This represents an increase of 28% and 26% for major depressive disorders and anxiety disorders, respectively in just one year.

In both cases, the countries that were hit hardest by the pandemic had the greatest increases in disorder prevalence. All over the world, there was a greater increase in disorder prevalence among females than among males, likely because females were more likely to be affected by the social and economic consequences of the pandemic. And globally there was also a greater change in prevalence among younger age groups than older ones, potentially reflecting the deep impact of school closures and social restrictions on youth mental health.

Source: COVID-19 Mental Disorders Collaborators, 2021 *(68)*.



INSIGHT

BOX 3.3

Severity of mental health conditions and the principle of vertical equity

A key input into the WHO's Global Health Estimates (GHE) are the so-called "health state weights", which are used to adjust time spent in a particular state of health by its associated level of diminished health or impairment (on a scale of 0 to 1, where 0 denotes full health or no impairment).

The most impairing state across all health conditions – both in GHE 2019 and GBD 2019 – is acute schizophrenia, which is given a health state weight of 0.78. Put simply, this means an individual experiencing acute schizophrenia is expected to have only one fifth of the health and functioning of a fully healthy person. Severe depressive episode is considered the fifth most impairing health state; and the residual state of schizophrenia is tenth.

Estimating health state weights can also help to inform discussions around "vertical equity". This concept means giving more attention to those with greater need. It is distinct from horizontal equity, which is focused on equal access or treatment for equal need (such as ensuring equal access to care in urban and rural areas). Indeed, several countries have explicitly included the severity of a disease or condition as a key criterion for priority-setting. So, from a vertical equity perspective, care for schizophrenia and other severe mental health conditions, including severe episodes of depressive disorder, should be accorded priority because of the impairment involved.

Sources: Barra et al, 2020 *(104)*; WHO, 2006 *(103)*.

Prevalence in males and females

Depressive and anxiety disorders are about 50% more common among women than men throughout the life-course, while men are more likely to have a substance use disorder. As depressive and anxiety disorders account for most cases of mental disorder, overall, slightly more women (13.5% or 508 million) than men (12.5% or 462 million) live with a mental disorder (see Table 3.1).

Mental disorders are common among pregnant women and women who have just given birth, often with severe impacts for both mothers and babies. Worldwide, more than 10% of pregnant women and women who have just given birth experience depression *(105)*. In LMICs this figure is estimated to be substantially higher.

Women who have experienced intimate partner violence or sexual violence are particularly vulnerable to developing a mental health condition, with significant associations found between victimization and depression, anxiety, stress conditions including PTSD, and suicidal ideation *(106)*. Women living with a severe mental disorder are much more likely to have experienced domestic and sexual violence during their life than other women *(107)*.

Prevalence in children and adolescents

Around 8% of the world's young children (aged 5–9 years) and 14% of the world's adolescents (aged 10–19 years) live with a mental disorder (see Table 3.1). A seminal nationwide study in the United States found that half of the mental disorders present in adulthood had developed by the age of 14 years; three quarters appeared by the age of 24 years *(108)*.

Idiopathic developmental disorders, which cause developmental disability, are the most common type of mental disorder in young children, affecting 1 in 50 children aged under five years. The second most prevalent mental disorder in young children is autism spectrum disorder (another developmental disorder), which affects 1 in 200 children aged under five years (see Table 3.1). Both disorders become gradually less prevalent with age, as many people with developmental disorders die young.

Attention-deficit/hyperactivity disorder and conduct disorders are particularly common in adolescence, especially among younger boys (4.6% and 4.5%, respectively in boys 10–14 years of age). Anxiety is the most prevalent mental disorder among older adolescents (4.6%) and even more so among adolescent girls (5.5%). Anxiety and depressive disorders at this age may be associated with bullying victimization. Eating disorders occur mainly among young people and, within this group, are more common among females (for example, 0.6% in women aged 20–24 years compared with 0.3% in men in the same age group) *(109)*.

Prevalence in older adults

Around 13% of adults aged 70 years and over lived with a mental disorder in 2019, mainly depressive and anxiety disorders. Sex differences in rates of mental disorders increase in this age category as 14.2% of women and 11.7% of men aged over 70 years are estimated to have a mental disorder. Prevalence estimates for schizophrenia are lower in adults aged over 70 years (0.2%) compared with adults under 70 years of age (0.3%), which in part may be explained by premature mortality (see section 3.1.2 Mortality).

Notably, these estimates on mental disorders do not include dementia, which is a key public health concern that is often addressed by mental health or aging policy and plans. An estimated 6.9% of adults aged 65 years and over live with dementia *(102)*.

Geographical disparities

Mental disorders are common in all countries: they occur across all WHO Regions, ranging from 10.9% prevalence in the WHO African Region to 15.6% in the WHO Region of the Americas (see Fig. 3.3) *(110)*.

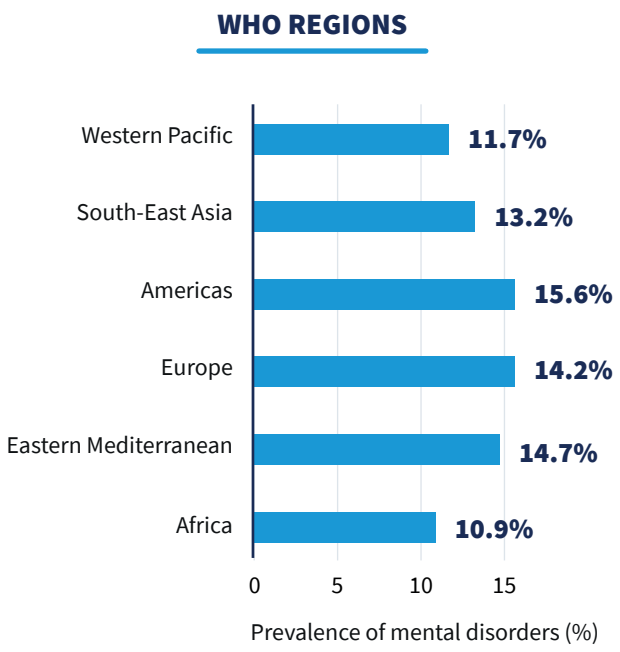
Mental disorders are somewhat more common in high-income countries (15.1%) but they are also common in low-income countries (11.6%) (see Fig. 3.3).

The variations in prevalence rates across regions and income groups may be explained by at least three factors. First, demographic factors lessen prevalence rates in low-income countries: populations here tend to have a higher proportion of children under ten years of age, for whom mental disorders are much less common. Second, war and conflict contribute to the relatively higher rates of mental disorder in WHO's Eastern Mediterranean Region. Third, sociocultural factors have a role. For example, differing cultural understandings and conceptualizations of mental health and mental health conditions may influence people's readiness to disclose mental health symptoms in surveys. Local cultural concepts of distress – which can be associated with psychopathology – are typically not well-covered in epidemiological studies *(111)*. And while stigma and discrimination is high in all countries, it may even be higher in many LMICs, which could lead to underreporting.

Combining factors such as age, sex and geographical location can reveal important differences in people's specific mental health needs. For example, while an estimated 4% of all

FIG. 3.3

Prevalence of mental disorders across WHO regions, 2019



Source: IHME, 2019 *(112)*.

age groups worldwide lived with anxiety disorders in 2019 (see Table 3.1), the rate rises to around 10% among working age women in the Americas *(113)*.

3.1.2 Mortality

Premature mortality

Estimating mortality from mental health conditions is complex. Both mental health conditions and suicide are rarely recorded as the cause of death on death certificates or in country mortality statistics. Yet poor mental health is often an important underlying or causative factor. Across the world, people with mental health conditions are known to experience disproportionately higher mortality rates compared with the general population *(114)*. People with severe mental health conditions – including schizophrenia and bipolar disorder – die on average 10 to 20 years earlier than the general population *(115)*. Most of these deaths are due to preventable diseases, especially cardiovascular disease, respiratory disease and infection, which are more common in people with mental health conditions. In these cases, having a mental health condition may not be the cause of death, but it is likely to be a major contributing factor.

Side effects of medications for severe mental health conditions can have a role in premature mortality by contributing, for example, to obesity, glucose intolerance and dyslipidemia *(116)*. Moreover, people with mental health conditions are more likely to be exposed to the well-known risk factors for noncommunicable diseases (NCDs), including smoking, alcohol use, unhealthy diet and physical inactivity.

This is further exacerbated by the fragmented approach health systems take in caring for physical and mental health conditions: once a person is channelled into a mental health service, their physical health too often gets neglected. At the same time, in both general and specialized mental health care settings, the signs and symptoms of physical illness are often misattributed to a concurrent mental health condition in what is known as "diagnostic overshadowing" *(117)*. These two factors have, for example, led to a systematic under-recognition and undertreatment of cardiovascular conditions among people living with schizophrenia and bipolar disorder *(118, 119)*. WHO and its expert advisers have developed a multilevel intervention framework and guidelines aimed at addressing these shortcomings (see section 4.1.2 Improved physical health, subsection Integrated care is good care) *(114, 120)*.

> People with severe mental health conditions die
> **10 to 20 years**
> earlier than the general population.

The cumulative mortality burden of mental health conditions can be derived using natural history models that relate prevalence to observed rates of excess deaths. These models are not part of the estimation of fatal burden (see section 3.1.3 Burden), which attributes deaths to the primary cause (such as cardiovascular disease), but researchers have used these models to show that the mortality burden of mental health conditions is grossly underestimated. One analysis of 2010 data shows there were more than four million excess deaths attributable to mental disorders, including 2.2 million from major depressive disorder, 1.3 million from bipolar disorder and 700 000 from schizophrenia – compared with just 20 000 cause-specific deaths, all from schizophrenia, calculated using the standard burden of disease calculations *(121)*.

This huge yet hidden mortality burden of mental health conditions has been labelled a scandal, and one that contravenes international conventions for the right to the highest attainable standard of health *(122)*.

Suicide

Suicide accounts for more than one in every 100 deaths globally *(123)*. And for every death by suicide there are more than 20 suicide attempts *(124)*. Suicide affects people from all countries and contexts. And at all ages suicides and suicide attempts have a ripple effect on families, friends, colleagues, communities and societies (read Marie's experience).

In 2019, an estimated 703 000 people across all ages (or 9 per 100 000 population) lost their life to suicide (see Fig. 3.4) *(125)*. Estimates of suicide rates vary significantly across countries – from fewer than two deaths by suicide per 100 000 in some nations to more than 80 per 100 000 in others. Around three-quarters (77%) of all suicides occur in LMICs, where most of the world's population live. But high-income countries grouped together have the highest suicide rates at 10.9 per 100 000. These countries are also more likely to have high-quality vital registration data.

Suicide rates also vary between males and females. Globally, women are more likely to attempt suicide than men. And yet twice as many men die by suicide than

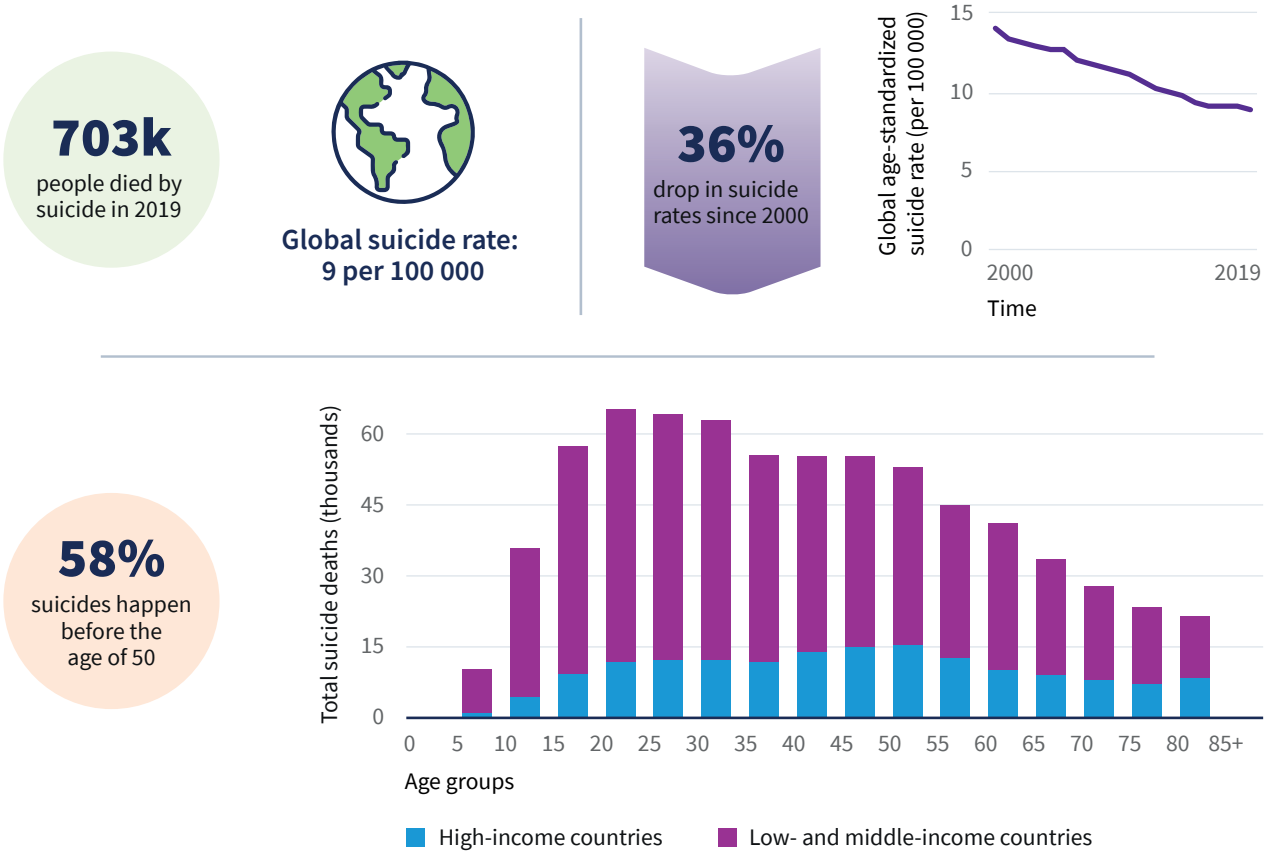
women do. In high-income countries the male-to-female ratio for death by suicide is even higher, at three men to every woman.

In both males and females, suicide is a major cause of death among young people. In 2019, it was the third leading cause of death in 15–29-year-old females; and the fourth leading cause of death in males in this age group. Overall, it is the fourth leading cause of death among 15–29-year-olds and accounts for some 8% of all deaths in this age group. More than half (58%) of suicides happen before the age of 50 years. And suicide rates in people aged over 70 years are more than twice those of working age people *(126)*.

Suicide accounts for
1 in 100 deaths
globally.

Globally, the suicide rate has dropped by 36% since 2000, with decreases ranging from 17% in WHO's Eastern Mediterranean Region to 47% in WHO's European Region and 49% in WHO's Western Pacific Region. Yet, in WHO's Region of the Americas, suicide rates have increased 17% over the past 20 years. (For more information on and examples of successful suicide prevention see section 6.3.1 Preventing suicide.)

FIG. 3.4
Suicides in 2019



Source: WHO, 2021 *(125)*.

NARRATIVE

I abandoned everything and everyone

Marie's experience

I am a high-functioning lady living with a history of trauma. I come from a family with a lot of experience of mental health conditions, but my family and the society we lived in didn't acknowledge mental health and didn't know how to take care of a loved one living with mental health challenges. We didn't get the care we needed. We lost my brother when he was just 33 years of age, without a conclusive diagnosis.

I suffered with behavioural issues. My greatest trauma was the breakdown of my parent's marriage. I struggled and self-medicated with dangerous relationships and risky sexual behaviours.

In 2009, I attempted suicide. I was five months pregnant. Me and the baby survived, but I knew I couldn't continue this way. I abandoned everything and everyone, including my three sons. I left my country without a single word to anyone. Only a mental illness makes you behave this way.

I continued to struggle and eventually got professional help. Four years later I returned as a much stronger person. I am now a commonwealth scholar doing an MSc in professional practice health care provision; and committed to raising awareness of mental health especially through people with lived experience sharing their stories in countries like mine.

Marie Abanga, Cameroon

3.1.3 Burden

Burden of disease studies estimate the population-wide impact of living with disease and injury and dying prematurely. They involve calculations using the Disability-Adjusted Life Year (DALY), where one DALY represents the loss of one year of full health. DALYs combine in one measure the years of life lost to premature mortality (YLLs) and years of healthy life lost to disability (YLDs) to estimate the overall burden from each cause of disease and injury.

In 2019, across all ages, mental, neurological and substance use disorders together accounted for one in ten DALYs (10.1%) worldwide. Mental disorders accounted for 5.1% of the global burden (see Fig. 3.5). Neurological disorders accounted for another 3.5%; while substance use conditions accounted for 1.5%.

In all countries, the burden of mental disorders spans the entire life-course: from early life, where conditions such as developmental disorders and childhood behavioural disorders are the biggest contributors to burden; through to

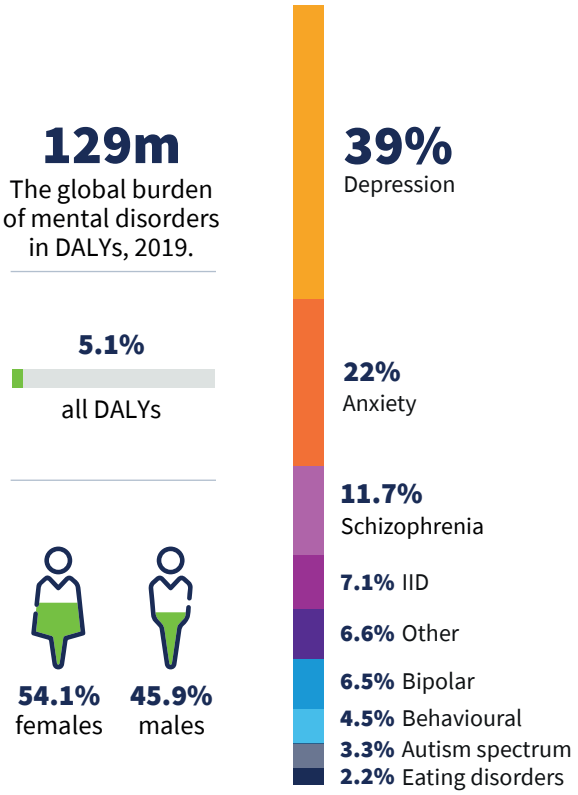
adulthood and old age, where depressive and anxiety disorders dominate. Overall, the greatest burden is carried during early adulthood.

Across all mental disorders, most of the burden manifests as YLDs, rather than YLLs. This is because of the way burden estimates are calculated, which does not attribute any deaths to conditions such as depressive disorders or bipolar disorder, and which includes self-harm and suicide under a separate category of intentional injuries *(127)*.

Mental disorders are the leading cause of years lived with disability, accounting for one in every six (15.6%) YLDs globally. Substance use disorders account for a further 3.1% of YLDs; and neurological conditions account for 6.4%. Combined mental, neurological and substance use disorders account for one in every four YLDs globally.

FIG. 3.5

The global burden of mental disorders in disability-adjusted life years (DALYs), 2019



Source: WHO, 2019 *(128)*.

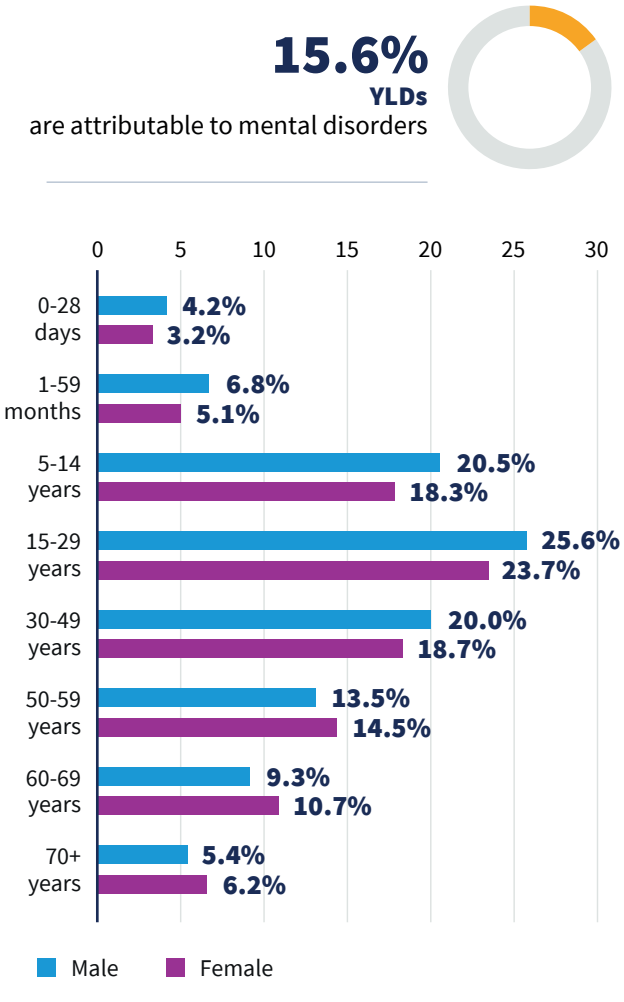
> Globally, mental disorders account for **1 in 6 years** lived with disability.

The contribution of mental disorders to YLDs varies across the lifespan, from less than 10% for children and older adults to more than 23% for young people aged 15–29 years (see Fig. 3.6).

Since 2000, both depressive and anxiety disorders have consistently been among the top ten leading causes of all YLDs worldwide.

FIG. 3.6

Proportion of all-cause years lived with disability (YLDs) attributable to mental disorders, across the life-course, 2019



Source: WHO, 2019 *(129)*.