Section 1 General considerations for psychiatric care in the emergency department

Chapter 1

The magnitude of the problem of psychiatric illness presenting in the emergency department

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Introduction

Mental illness is ubiquitous and increasingly recognized as a growing problem throughout the world [1]. The purpose of this chapter is to describe the magnitude of the problem of mental illness, both globally and in terms of specific mental health-related visits encountered in emergency department (ED) settings. While emergency departments may not be the optimal location to manage the growing burden of mental illness, they are often the only 24/7 port in the storm for the preponderance of patients in crisis.

Global burden

By the year 2020, psychiatric disorders are projected to rank second only to cardiovascular illness with regard to both years of potential life lost (YPLL) due to premature mortality and the years of productive life lost due to disability (also known as disability adjusted life years, DALYs) [1]. The escalation of mental illness is attributed to an increase in psychosocial and environmental stressors in many parts of the world combined with the epiphenomenon of mental illnesses becoming less stigmatized in many cultures. Indeed, a substantial increase in measured prevalence comes less from new biological challenges and much more from an increase in diagnoses; the latter diagnostic contagion has been generated in part by the proliferation of clinical psychologists, the widespread availability of structured diagnostic tools, and a populist penchant to pathologize symptoms formerly regarded as non-psychiatric.

Prevalence

Diagnostic trends notwithstanding, the worldwide prevalence of mental illness remains profound. The growing extent of the problem has been well described in the psychiatric epidemiologic studies of the World Health Organization's (WHO) World Mental Health Surveys conducted in 28 countries [2]. The WHO's cross-national comparisons show a globally high prevalence of major Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV) mental disorders (anxiety disorders, mood disorders, impulse control disorders, substance use disorders) with 25th–75th percentiles (interquartile range, IQR) ranging from 18.1% to 36.1%. These WHO-sponsored studies also reveal cross-nationally consistent findings of early ages at onset, high comorbidity, significant chronicity, widespread unmet treatment needs, significant delays between illness onset and treatment, and inadequate frequency and quality of treatment.

The World Mental Health Surveys found that lifetime prevalence of major DSM-IV mental disorders was highest in the United States with almost half (47.4%) the population having a lifetime risk of at least one mental illness [3]. The 12-month prevalence estimate for any disorder varied widely, and was also highest in the United States (24.6%) but lowest in Beijing (4.3%) [4]. All four major classes of DSM-IV disorders were important components of overall prevalence. Anxiety disorders (IQR, 9.9–16.7%) and mood disorders (IQR, 9.8–15.8%) were the most prevalent lifetime illnesses. Impulse control disorders (IQR, 3.1–5.7%), and substance use disorders (IQR, 4.8–9.6%) were generally less prevalent in global samples, despite their relatively high frequency among emergency department patients in North America.

Extent of mental illness across the life cycle

Most mental disorders begin early in life and often have a chronic, fulminating course. They have much earlier ages-of-onset than most chronic non-psychiatric disorders. In the U.S. sample of the World Mental Health Survey, approximately 50% of psychiatric disorders existed by age 14, and 75% by age 24 [5]. Very early age of onset occurs for some anxiety disorders, notably, phobias, and separation anxiety disorder (SAD), with median age of onset in the range 7–14 years. Early onsets are also typical for the externalizing disorders, with 80% of all lifetime attention-deficit/hyperactivity disorder beginning in the age range 4–11 and the clear majority of oppositional-defiant disorder and conduct disorder beginning between ages 5 and 15. Serious mental illnesses such as schizophrenia typically first manifest in the late teenage years or early adulthood, typically in the range of 15–35 years of age.

Adult onsets are seen for the other common anxiety disorders (panic disorder, generalized anxiety disorder, and post-traumatic stress disorder), with median onset in the age range

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25–50 years old. Mood disorders have a similar age of onset to the later-onset anxiety disorders, increasing linearly from the early teens until late middle age and then declining. The median age of onset for mood disorders ranges from 25 to 45. Substance use disorders also begin in young adulthood with a median age of onset ranging from 20 to 35 years [5]. The age of onset for the dementias is generally late in older adulthood. Alzheimer's disease is typically first seen in those over 65 years of age.

Social and physical health impacts

Data from both the WHO World Mental Health Surveys and the WHO Global Burden of Disease Study show that mental disorders impose enormous personal and economic costs. These enduring costs arise in part from the combination of early onset, high prevalence, high disability, and chronicity of these disorders [2]. Early-onset mental disorders are associated with a wide array of adverse outcomes over the life course including lowered educational attainment, early marriage, marital instability, and low occupational and financial status [2]. In addition, and particularly relevant to emergency medicine, early-onset mental disorders increase risk of onset and persistence of a wide range of physical disorders including heart disease, asthma, diabetes mellitus, arthritis, chronic back pain, and chronic headache [6,7]. Adult onset mood, substance, and anxiety disorders are also associated with significant role impairment and are often comorbid with physical illnesses.

Economic burden: United States

In any given year an estimated one in four (26.2%) of the United States population has a diagnosable mental or substance use disorder [8]. Of those with a disorder, 22% are classified as serious, 37% as moderate, and 40% as mild. To address this burden, the total U.S. national health expenditure for mental health services has increased exponentially during the last two decades, from $33 million in 1986 to $100 million in 2003 [9].

Most of the World Mental Health Survey research undertaken to calculate the magnitude of the short-term societal burden of mental disorders has been done in the United States [10,11]. These studies count costs in terms of healthcare expenditures, impaired functioning, and premature mortality, and reveal an overwhelming financial burden. The annual total societal costs of anxiety disorders in the United States over the decade of the 1990s, for example, exceeded $42 billion, and the economic cost of depression in 2000 was estimated at $83 billion.

Further analyses suggest that one third of all the days lost from work or home responsibilities associated with chronic-recurrent health problems in the U.S. population are due to mental disorders, totaling billions of days of lost functioning per year in the U.S. population [12]. In addition, analyses of the impact of specific disorders found that 6.4% of U.S. workers reported an episode of major depressive disorder in the prior year, resulting in an average of over 5 weeks of lost work productivity and costing employers over $36 billion.

Changes in mental healthcare infrastructure

The burden of escalating numbers of mental health patients has been exacerbated, in the United States and worldwide, by changes in mental health infrastructure that have resulted in reduced resources and restricted access to mental health care. In the United States, psychiatric inpatient facilities have been closed, numbers of psychiatrists have declined, and numbers of both state hospital psychiatric beds and psychiatric beds in general have decreased. The number of mental health organizations in the United States have contracted, from 3512 in 1986 to 891 in 2004; the total number of psychiatric beds has fallen by 20% from 267,613 in 1986 to 212,231 in 2004; the number of psychiatric beds in state and county mental hospitals has halved, from 119,033 in 1986 to 57,034 in 2004; the number of beds per 100,000 civilian population decreased from 111.7 in 1986 to 71.2 in 2004 [9].

These striking reductions in psychiatric resources have been accompanied by reduced lengths of stay, moves to treat people in the community, increased costs of general practitioner visits, and an unfavorable reimbursement regime. Having no place else to go, patients with severe and chronic psychiatric illnesses, as well as those with acute mental illnesses, and those in severe psychological distress, have been forced to seek care at emergency departments (EDs) – the only healthcare facilities that cannot legally turn them away [13].

Overall emergency department visits

In 2008, there were almost 124 million visits to U.S. EDs, 41.4 visits for every 100 persons in the United States [14]. From 1996 to 2006, the annual number of ED visits increased from 90 to 119 million, an increase of 32%, representing an average increase of approximately 3 million (3.2%) visits every year [15]. However, as the number of visits has increased, the number of EDs has decreased, from 4019 in 1996 to 3833 in 2006, and this trend shows no sign of declining [16]. The joint effect of increasing visit rates and declining EDs is that the annual number of visits per ED has increased. The overall ED usage rate has increased by approximately 20% resulting in serious overcrowding. Mental health patients have played an increasing role in this ED oversubscription and we describe this below.

Increased mental health visits to emergency departments

An increasing fraction of annual ED visits are for mental health presentations [17]. Indeed, while overall use of U.S. ED services increased by 8% from 1992 to 2001, the number of documented mental health-related visits increased at an even faster rate – by 38%. For the past two decades mental disorders have been the fastest growing component of emergency medical practice, while psychiatric services have diminished. While, each year, almost one in three adults in the non-institutionalized community has a diagnosable mental or addictive disorder, this figure climbs to at least 40% among ED patients. In 2006, the

National Center for Health Statistics (NCHS) reported that 4.7 million patients presented to American EDs with a primary psychiatric diagnosis. However, this number does not include codes for psychiatric reason for visit, comorbid mental health issues, substance-related visits, and the many patients in whom psychiatric reasons for visit are secondary; hence, NCHS numbers are a gross underestimate.

The Emergency Medical Treatment and Active Labor Act (EMTALA) legislation and mental health insurance exclusions, as well as changes in the mental health infrastructure, mean that EDs have become the default option for urgent and acute contact for many psychiatric patients, including high severity patients and those who are suicidal. For some, the ED is their sole source of health care [18]. While many of those who present to EDs with mental health problems are uninsured, underinsured, homeless, and of racial and ethnic minorities who have no easy access to health care, the largest increase in mental health visits in the past decade comes from those who are insured [17]. As states reduce mental healthcare expenditure and the U.S. healthcare system becomes inaccessible to an increasing fraction of the American population, the 38% increase in ED psychiatric visits observed between 1992 and 2001 will likely rise still further.

As a result of these trends, emergency medicine is being forced to assume a growing responsibility for providing both primary and acute mental health care. Paradoxically, however, while ED visits increase every year, both the number of general and psychiatric EDs are declining, often because overcrowding generates high costs, rendering EDs uneconomic businesses. While there are approximately 3,800 general EDs in the United States, of which only 146 have specialized psychiatric emergency units, these resources are diminishing, even as patient visits increase [American Association for Emergency Psychiatry, personal communication, 2009].

The epidemiology of mental health visits to emergency departments

Emergency department use for psychiatric reasons has expanded over the past two decades and now accounts for more than 5% of all U.S. emergency department visits by adults [19]. Despite these recent trends, which have resulted in record-breaking numbers of patients seeking emergency services nationwide, there have been few methodologically and diagnostically sound, and nationally comprehensive studies, of the epidemiology of mental health-related emergency visits in the United States.

The most comprehensive study used National Hospital Ambulatory Medical Care Survey (NHAMCS) data which included all potentially relevant diagnostic fields, including psychiatric reason-for-visit codes, DSM-based ICD diagnoses, Supplementary Classification of Factors Influencing Health Status and Contact with Health Services (V codes), and external cause-of-injury codes (E codes) for all appropriate mental health-related disorders [17]. This study found that, from 1992 to 2001, a total of 53 million visits to U.S. EDs were made primarily for mental health–related reasons. Of these, an estimated 17 million visits were for a mental health-related primary complaint (that is, as conveyed to the clinician by the patient), but many more involved a psychiatric diagnosis (that is, the assessment of the patient's condition by the clinician). Among the estimated 53 million mental health-related visits overall, the most common diagnoses were substance-related disorders (30%), mood disorders (23%), and anxiety disorders (21%). Psychoses constituted 10% and suicide attempts 7% of all documented mental health-related visits. These five major subgroups accounted for 79% of all mental health-related visits.

The remaining visits included all other Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnostic codes and reason-for-visit codes referable to other psychological and mental disorders. Rates of these miscellaneous mental health-related visits increased significantly over the decade. Rates of presentation to EDs for the most serious mental health problem (suicidal behavior) increased almost 50% from 1992 to 2001. As well as suicidal behavior, increased rates of visits were significant for all of the most prevalent disorders (mood, substance use, and anxiety disorders). However, rates of psychoses-related visits remained stable over this period.

Specific mental disorders

The goal of the following section is to describe the magnitude of the problem of ED presentations for specific mental disorders. The most prevalent conditions are highlighted. While the prevalence and illness burden of each condition are worthy of discussion, prevalence data are not available for all mental illnesses, particularly those that are less common.

Anxiety disorders

Anxiety disorders are the most common psychiatric disorders in the general population. The findings of many studies suggest that as many as one in four ED patients screen positive for anxiety disorders [20]. Many patients with anxiety disorders visit emergency departments, either to seek help for the anxiety symptoms explicitly, or because they have physical symptoms related to anxiety. While anxiety symptoms rarely constitute a life-threatening emergency, severe anxiety is a common presenting problem in emergency department patients, consuming many resources. Specific anxiety disorders include:

- Anxiety due to a general medical condition
- Substance-induced anxiety disorder
- Generalized anxiety disorder
- Panic disorder
- Acute stress disorder
- Post-traumatic stress disorder (PTSD)
- Adjustment disorder with anxious features
- Obsessive-compulsive disorder (OCD)
- Social phobia, also referred to as social anxiety disorder
- Specific phobia, also referred to as simple phobia.

Anxiety disorders affect one in five (18.1%) of the U.S. adult population each year [8]. Of these cases, 22.8% (4.2% of the total adult population) are classified as "severe" [21]. The mean age of onset of anxiety disorders is 11 years, and these disorders are more common in females than males, and less common in non-Hispanic Blacks and in Hispanics than in non-Hispanic Whites.

Despite the high prevalence rates of the anxiety disorders, they are often under-recognized and undertreated clinical problems in the general population, and in primary care. Of all cases each year, only one third (36.9%) receive treatment and for only one third of those, (12.7% of those with the disorder), is the treatment effective or adequate [22]. Anxiety disorders have a strong comorbidity with depression, and the risk of suicidal behavior in anxiety disorders is often under estimated.

Anxiety-related presentations accounted for 16% of emergency department mental health visits from 1992 to 2001, increasing from 4.9% to 6.3% of all emergency department visits across the decade [23]. This growth may reflect a rise in anxiety-related emergency department care-seeking, an increase in anxiety awareness among patients and practitioners, or both. Of all mental health visits to the ED, anxiety disorders are the least likely to result in admission, with an overall hospitalization rate of 20%.

Panic disorder

The estimated lifetime prevalence of panic disorder in the U.S. adult population is 4.7% [24,25]. Twelve-month prevalence is estimated at 2.7%. The lifetime prevalence of panic disorder is twice as high among females (6.2%) than males (3.1%). Twelve-month prevalence is 3.8% for females, and 1.6% for males. The age of onset for panic disorder is typically is the early to mid-twenties, and panic disorder is seen most commonly in people aged 15–24 years [26]. However, these population estimates may not reflect the characteristics of panic disorder patients seen in emergency room settings. For example, it has been found that panic patients in an ED were older and more likely to be male than patients seen in psychiatric clinics. One study found ED panic patients were also significantly more likely to be on Medicare and less likely to be uninsured [27].

Patients with panic disorder have high rates of use of both ED services and 911 emergency services, as well as high rates of ED recidivism. Panic patients seek emergency care not only because of the sudden, severe, and frightening onset of symptoms, but also because anxiety disorders often occur in association with somatic complaints: the direction of association is unclear but is likely to be bidirectional.

A series of ED studies has focused on patients who present with chest pain [27]. Chest pain is the most common reason for ED presentation for over 65 year olds, and the second most common reason for those aged 15 to 64 years, accounting in 2008 for 4.7 million ED visits [9]. Studies of ED chest pain patients consistently report that panic disorder can be diagnosed in two thirds of all patients presenting to an ED with medically unexplained chest pain. In several studies, the vast majority (98%) of ED patients with panic disorder were undiagnosed. These patients often receive costly cardiac workups to exclude coronary artery disease, yet they are seldom, if ever, screened for panic disorder [28].

Underdiagnosis of panic disorder is unfortunate, not only because identification of these patients might reduce their economic burden in the ED by avoiding unnecessary and expensive investigative tests, and minimizing rates of medical care usage, use of 911 services, and overall ED use, but also because effective pharmacological and psychotherapeutic treatments are available. Untreated, panic patients tend to develop depression, agoraphobia, alcohol and substance abuse problems, and impaired social and occupational functioning. Panic disorder is also associated with elevated risk of suicidal behavior. Although only 60% of people with panic disorder seek care, 32% of these patients present to EDs, rendering EDs an appropriate site for detection of panic disorder [28].

Post-traumatic stress disorder (PTSD)

While the nosology of post-traumatic stress disorder in still being debated, the estimated lifetime prevalence of PTSD among adult Americans is 6.8% [8,21]. The 12-month PTSD prevalence estimate is 3.5%. PTSD is significantly more common in women than men; the lifetime prevalence of PTSD among men is 3.6% and among women, 9.7%. The 12-month prevalence is 1.8% among men and 5.2% among women.

PTSD is often unrecognized in the general population, as well as in emergency departments which are routine reception zones for trauma and disaster victims. Emergency departments receive many patients who have experienced mass-casualty events, natural disasters, serious accidents, assault or abuse, sudden and major deaths, as well as deep emotional losses that put them at risk of PTSD.

Generalized anxiety disorder

The lifetime prevalence of generalized anxiety disorder (GAD) is estimated at 5.7% [8,21,24]. The 12-month prevalence is 2.7%. The lifetime prevalence of generalized anxiety disorder is estimated to be 7.1% in females and 4.2% among males. Past year prevalence is 3.4% among females and 1.9% in males. Generalized anxiety disorder rarely occurs in isolation from other psychiatric disorders, with an estimated 90% of people with GAD meeting criteria for another psychiatric disorder over the course of their lifetime. The most common comorbid illnesses are depression, alcohol abuse, and other anxiety disorders. In the emergency department, GAD is likely to be a secondary diagnosis to both these comorbid mental disorders as well as to physical illnesses.

Phobic disorders

Lifetime estimates suggest 12.5% of the adult U.S. population has a specific phobia [8, 21]. In any year, 1 in every 10 adults reports having a specific phobia. The lifetime prevalence is estimated at 15.8% in females and 8.9% in males. While phobias are the most prevalent anxiety disorders they are much less

likely to be the reason for ED presentations than panic disorder, PTSD, and GAD.

Mood disorders

After anxiety disorders, mood disorders are the second most common psychiatric disorder in the general population, occurring in 10% of the U.S. adult population each year [8,21,29]. Of these cases, 45% (4.3% of the total population) are classified as severe. The mean age of onset is 30 years, and women are 50% more likely than men to suffer a mood disorder during their lifetime. Non-Hispanic Blacks and Hispanics are less likely than non-Hispanic Whites to experience a mood disorder during their lifetime.

Mood disorders are the most expensive mental illness in the general population because they are frequently undiagnosed, underdiagnosed, or misdiagnosed, and, even if detected, often inadequately treated. Each year, half of those in the general population with a mood disorder receive treatment and for 40% (20% of those with any mood disorder) this treatment is minimally adequate [22].

The economic burden of depression in the general population is derived not only from the healthcare costs of inadequate diagnosis and treatment, but also from workplace absenteeism and loss of productivity, lost earnings due to premature death, the costs incurred by social agencies including law enforcement, the justice system, and shelters, as well as personal costs in terms of reduced quality of life.

After substance use disorders, mood disorders (including major depressive disorder, bipolar disorder, and dysthymia) are the most common mental illness seen in the emergency department, accounting for 17% of U.S. ED visits for mental health-related reasons from 1992 to 2001 [18].

Major depression

Each year 6.7% of U.S. adults suffer a major depressive disorder (MDD) [8,21]. Of these, one third (2% of all the U.S. adult population) are classified as severe. The mean age of onset is 32 years. Women are 70% more likely than males to have a major depressive disorder during their lifetime, and MDD is 40% less common in non-Hispanic Blacks than non-Hispanic Whites. Of all those with MDD each year, only half receive treatment and of those receiving treatment, 38% (20% of those with the disorder) are receiving minimally adequate treatment.

Untreated, depression imposes a severe economic burden, resulting largely from inadequate diagnosis and treatment. In the majority (50% to 60%) of those with depression, the disorder is not accurately diagnosed [30]. Wells and colleagues found that depressed medically ill patients have significantly more pain and functional impairment than matched patients having chronic medical conditions alone [31]. Only advanced coronary artery disease accounts for more bed disability days (defined as days during which a person stayed in bed for more than half a day because of illness or injury) than depression, and only arthritis causes more pain. In terms of impaired physical functioning and ability to work, to function socially, and to care for home and family, depression is more disabling than hypertension, diabetes, arthritis, gastrointestinal, or back pain problems. Depressed patients have high rates of medical usage for a range of somatic complaints including headaches, backaches, gastrointestinal disorders, weakness, lethargy, fatigue, and insomnia. They are frequent users of emergency departments, using such services three to five times more than non-depressed patients [32].

However, depression is often neither detected nor even inquired about in emergency department settings [33]. A study of 476 ED patients in four U.S. hospitals found that, when screened for symptoms of depression, one third were positive [34]. While symptoms of depression do not necessarily equate with standardized diagnoses of depression, these results suggest that depression in ED patients may be approximately six times higher than in general population samples.

Depression is often comorbid with anxiety disorders, other mental disorders, and somatic complaints. It may be obscured in ED presentations by these other concerns unless explicit screening for depression is undertaken. However, if ED screening for depression is implemented, then there is a need to develop a range of ED-based interventions to either provide ED-delivered interventions or to link all those who screen positive for depression to appropriate services external to the ED, and furthermore, to ensure that no-one falls through gaps between ED and outpatient services.

Bipolar disorder

Bipolar disorder is a chronic mood disorder that causes significant economic burden to patients, families, and society [8,21,35]. The 12-month prevalence of bipolar disorder in the U.S. adult population is 2.6%. The majority of these cases (83%) are classified as severe. Half of those with the disorder receive treatment each year, and of those, 40% receive minimally adequate treatment.

Bipolar disorder is characterized by recurrent manic or hypomanic, and depressive, episodes that cause functional impairment and reduce quality of life [36]. At least 25% to 50% of patients with bipolar disorder also attempt suicide [37]. Bipolar patients may present to the ED in either depressed or manic states; some will have attempted suicide. There are few studies of the epidemiology of bipolar disorder visits to the ED, but one small study found that almost 7% of ED patients screened positive for bipolar disorder, considerably higher than population estimates of 1.3% [38].

Dysthymic disorder

Dysthymic disorder, or dysthymia, is characterized by long-term (2 years or longer) symptoms that may not be severe enough to be disabling but can prevent normal functioning or feeling well. People with dysthymia may also experience one or more episodes of major depression during their lifetime [8,21]. The lifetime prevalence of dysthymic disorder is estimated to

be 2.5% [8,21]. The 12-month prevalence is 1.5%. Lifetime estimates are 3.1% among females and 1.8% in males. Twelve–month estimates are 1.9% among females and 1.0% in males. Dysthymia may underlie many ED visits, but it is frequently undetected and many outpatients with dysthymia may be receiving inadequate treatment.

Suicidal behavior

While suicidal behavior is not a DSM-IV disorder, it is anticipated to be part of DSM-V. Suicidal behavior is closely associated with most mental disorders, and is the most common and arguably the most serious psychiatric emergency presentation to the ED. Suicide ideation and suicide attempts are strongly linked to death by suicide and predict further suicidal behavior [39]. The lifetime prevalence of suicide ideation is 9% and the lifetime prevalence of suicide attempt is 3%. Twelve-month prevalence rates of suicide ideation, plans, and attempts are, respectively, 2%, 0.6%, and 0.3% for developed countries [40].

Suicide attempts accounted for approximately 2.5 million (5.9%) injury-related U.S. ED visits in 2006, and the rate of presentation for suicide-related visits to U.S. EDs increased by 47% during the decade from 1992 to 2001. Yet these figures underestimate the prevalence of suicide-related visits to the ED. A study by Claassen and Larkin (2005), for example, found that a significant fraction of those who present to EDs for non-mental health reasons often have occult or silent suicide ideation (estimated at 8–12%) [41].

Three clusters of ED patients can be identified as being at risk of suicidal ideation and behavior: (i) Those who present to ED with suicidal ideation or threats, or following suicide attempts; (ii) Those who present with the mental health problems with which suicide is associated; (iii) Those who present with specific physical problems but who have occult or silent suicide risk [42,43].

Almost all mental disorders have an increased risk of suicide apart from mental retardation and dementia [44]. Approximately 90% of individuals who attempt or commit suicide meet diagnostic criteria for a mental disorder, most commonly mood disorder, substance use disorders, psychoses, and personality disorders. However, both the mental disorders with which suicide is associated and suicidal ideation are frequently under-recognized and under treated in ED settings.

Those who make suicide attempts also present to ED services for a range of medical problems and have increased risks of homicide, accidents, disease, and premature death in general [45]. Patients who present to the ED with suicide ideation (without attempt) also have risks of returning to the ED with further ideation or with suicide attempts which are as high as those who present with attempts [46].

EDs have an unmatched burden of responsibility for suicidal patients. EDs are thoroughfares for a range of endophenotypes at high risk of suicidal behavior, including not only those with frank or occult suicidal behavior but also: young people; males; prisoners; gun-owners; homeless; psychiatrically ill; binge drinkers, illicit drug users, and substance abusers; older adults; victims of abuse, trauma, and assault; perpetrators of crime, assault, and violence; substance-abusing youth; violent youth; youth with conduct disorder and those in foster and welfare care; patients with severe, chronic mental disorders, including those with depression; psychosis, and personality disorders; older adults with physical health problems, persistent pain, disability, and/or depression; adults and young adults with degenerative illnesses. Given that emergency departments are in frequent contact with suicidal patients, EDs represent underutilized sites for suicide prevention [41]. Potentially, EDs are sites that could identify and engage at-risk patients into accessible outpatient care management and suicide prevention programs.

Substance use disorders

One person in three in the U.S. population has a lifetime substance use disorder, and lifetime risk is higher among males (41.8%) than females (29.6%) [8,21]. The 12-month prevalence is 13.4%, again higher in males (15.4%) than females (11.6%).

Substance abuse is the most common mental health reason for ED presentations. Primary diagnosis of substance abuse was responsible for 30% of psychiatric-related emergency department visits in the U.S. from 1992 to 2001, and for approximately 8% of total ED visits over that time [17]. Substance abuse is often comorbid with other mental disorders, including mood and anxiety disorders in particular. Patients with comorbid major psychiatric diagnoses and substance abuse diagnoses are overrepresented in those who are frequent recidivists to EDs.

Substance abuse is also commonly involved in injury-related ED presentations including violence, falls, drownings, motor vehicle crashes, and suicide attempts. Substance misuse is also associated with hazardous and costly social consequences including driving under the influence of alcohol or drugs, arrest, and violent behavior.

Alcohol abuse or dependence

In 2000, 16.2% of deaths and 13.2% of disability-adjusted life years (DALYs) from injuries, globally, were estimated to be attributed to alcohol. The lifetime prevalence of alcohol abuse or dependence in the U.S. population is estimated to be 13.2% [8,21]. The 12-month estimate is 3.1%. Lifetime prevalence is estimated at 19.6% among males and 7.5% among females. The 12-month estimates are 4.5% among males and 1.8% among females.

Alcohol-related visits impose a significant burden on emergency departments. Because patients often withhold information about their drinking habits and drinking history, the role of alcohol in ED visits is likely underestimated. Nevertheless alcohol abuse is often implicated in ED visits for violence and injury. Half of all drug abuse/misuse visits made to EDs by individuals under 20 years old involve alcohol.

Drug abuse or dependence

An estimated 8% of the U.S. adult population has a lifetime drug abuse or dependence disorder [8,21]. The 12-month estimate is 1.4%. Lifetime estimates are 11.6% among males and 4.8% among females. The 12-month estimates are 2.2% for males and 0.7% for females. Drug-related ED visits include those made for drug abuse and misuse, suicide attempts, adverse reactions, and accidental ingestions. Drug abuse also spawned increased violence during the crack cocaine epidemic of the 1990s, and substance abuse and dependence remains a central reason for visiting the ED for many patients.

Schizophrenia and other psychotic disorders

Schizophrenia spectrum diagnoses account for approximately two thirds of all psychotic disorders. The estimated lifetime prevalence of schizophrenia in the U.S. adult population is 1.1% [8,21]. Twelve-month healthcare use is estimated at 60%.

Schizophrenia is a serious mental illness with high economic and social costs for families and for society. The overall U.S. 2002 cost of schizophrenia was estimated to be $62.7 billion, with $22.8 billion excess direct healthcare cost ($7.0 billion outpatient, $5.0 billion drugs, $2.8 billion inpatient, and $8.0 billion long-term care) [47].

A population-based study of ED mental health visits, using NHAMCS data, found that psychosis-related ED visits accounted for approximately 10% of all mental health ED visits during the decade from 1992 to 2001 [48]. Notably, while overall mental health-related ED visits increased by more than a third over this time, and rates of ED visits for other major mental health problems including suicidal behavior, substance use disorders, mood disorders, and anxiety disorders all increased, the rate of psychosis-related ED visits per capita did not change. This stability may reflect the results of recent substantial investment in early intervention and intensive case management for the seriously mentally ill.

Some patients with schizophrenia may present to EDs in a psychotic crisis that requires immediate management, and may not have been diagnosed with psychiatric illness previously. They often present diagnostic dilemmas involving organic versus psychiatric etiology and primary psychotic versus affective disorder diagnosis. Treatment may be complicated further by the presence of alcohol or drug intoxication. Previously diagnosed patients with serious mental illness may also present to the ED with a complication of treatment (e.g., adverse effects of medication) or a psychotic crisis which may arise from gaps in treatment or socioeconomic challenges engendered by serious mental illness (e.g., poverty, homelessness, social isolation, failure of support systems).

Eating disorders

Both obesity and the fear of obesity are on the rise. The lifetime prevalence of anorexia nervosa is 0.6% of the U.S. adult population; only one third of anorexia nervosa patients receive treatment [8,21]. Similarly, the lifetime prevalence of bulimia nervosa is 0.6%; 43.2% receive treatment. The 12-month prevalence is bulimia is 0.3%, and only 15.6% receive treatment over that year.

Binge eating is much more common, with a lifetime prevalence of 28%, of whom 43.6% receive treatment. The 12-month prevalence of binge eating is 1.2% of U.S. adults, of whom 28% receive treatment [49]. As many as 5% of young women exhibit symptoms of anorexia but do not meet full diagnostic criteria, and some studies show disordered eating behavior in 13% of adolescent girls in the United States.

Patients with anorexia nervosa may present to the ED with extreme weight loss, food refusal, dehydration, electrolyte abnormalities, weakness, acute abdominal pain, or shock. They are frequent users of the emergency department, and may often present at the urging of family members or friends and may often deny their disorder and their malnutrition. Major depression and dysthymic disorder have been reported in up to 50% of patients with anorexia nervosa, and these patients have an elevated risk of suicide.

Impulse control disorders

An estimated 1 in 4 of the U.S. adult population has one of the impulse control disorders (oppositional defiant disorder, conduct disorder, attention-deficit/hyperactivity disorder, or intermittent explosive disorder) [8,21]. The 12-month estimate is 10.5%. Lifetime estimates are higher for males (28.6%) than females (21.6%). Twelve-month estimates are 11.7% for males and 9.3% for females. These disorders are likely associated with ED presentations for violence and injury, and with high rates of medical usage, but are rarely assessed in the ED setting.

Personality (Axis II) disorders

Almost 1 in 10 of the adult U.S. population is estimated to have an Axis II personality disorder in any year [8,21]. People with personality disorders have high rates of comorbid mental disorders, including anxiety disorders, mood disorders, impulse control disorders, and substance abuse or dependence and may present to the ED with these mental illnesses. Although DSM-IV defines 10 categories of personality disorder, population prevalence and ED visit data are lacking for most classifications, but are available for the most common disorders: borderline personality disorder and antisocial personality disorder.

Borderline personality disorder (BPD) is a personality disorder seen frequently in EDs, and BPD patients are high users of ED services, and of psychiatric services. The 12-month prevalence of borderline personality disorder is estimated to be 1.6%, of whom 42.4% receive treatment. From 10% to 20% of all psychiatric patients are diagnosed with this disorder, which is approximately three times more common in women than men.

The major feature of BPD patients is that they are emotionally unstable and chaotic. They are often also impulsive and

frequently self-harming. They tend to present to the ED in emotional crisis, and/or having made a suicide attempt or gesture by overdose or cutting their wrists in response to some emotional stressor. The majority (approximately 75%) of borderline personality disordered patients attempt suicide or display self-mutilating behaviors like cutting or burning. The risk of suicide is approximately 10%.

Antisocial personality disorder (ASPD) is a condition in which an individual chronically manipulates others and violates their rights, disregarding their feelings without remorse. ASPD is more common in males than females and ASPD is often comorbid with substance abuse disorders, depression, anxiety disorders, attention-deficit/hyperactivity disorder, and legal problems. Patients with ASPD may be high users of ED services, and may present to the ED with comorbid psychiatric conditions, but also with substance abuse, injury- or violence-related problems. While the 12-month prevalence of ASPD in the general population is only 1%, it is likely to be much higher in the ED population.

Miscellaneous/occult mental health disorders

The prevalence and ED burden of many less common mental disorders remain unknown. Studies conducted by our laboratory and by others on the prevalence of occult, unmeasured, and often unrecognized mental disorders suggest that large segments of the ED patient population have relatively severe comorbid mental health problems in addition to other somatic maladies. These relatively undercounted mental health conditions include delirium, dementia and amnestic and other cognitive disorders, somatoform disorders, dissociative disorders, conversion disorders and factitious disorders. While many of these disorders, such as the somatoform and factitious disorders, are counted among the so-called "ER frequent fliers," they are also seen in patients with asthma, diabetes, malignancies, and other nonpsychiatric health conditions. A significant proportion of ED patients with abdominal pain, chest pain, back pain, and headache are not ultimately diagnosed with somatic diseases that account for their typical symptoms. However, taking a better accounting of patients with somatoform and factitious disorders would be a first step toward targeting those who frequently use and sometimes misuse or abuse ED services.

Most mental health patients do not abuse ED services, however, and many ED patients suffer silently from occult and comorbid mental illnesses, resulting in significant diagnostic and treatment delays at the local level, as well as a systematic epidemiologic undercounting of mental health-related ED visits on the global level. Efforts to screen more aggressively for mental illness would certainly improve psychoepidemiologic estimates of the prevalence and true magnitude of the mental health problem. Uncovering more comorbid psychopathology may also benefit patients. However, many emergency departments and psychiatric services are currently too oversubscribed and under-resourced to adequately manage those currently suffering in silence.

Conclusion

This chapter outlined the psychoepidemiology of mental illness, both in global terms and in terms of the reigning acute care system in most developed countries: emergency departments. Decreased stigmatization, enhanced legitimization, and increased public and clinical recognition of mental illness have led to significant, record-breaking, global increases in the point prevalence and incidence of mental illness in the general population. These population increases in mental illnesses have, in turn, increased the census of mentally unwell emergency department patients in need of care at the local level.

Paradoxically, psychiatric patient population expansion has developed during a time of ED overcrowding and sharp reductions in both the total number of EDs and psychiatric beds in many communities. In addition, the willingness of mental health providers to make new DSM diagnoses appears to be out of step with either a systemic unwillingness or a provider inability to provide acute psychiatric and crisis care. Gaps in crisis care and the overall lack of affordable, 24/7 access to cost-effective mental healthcare services has fostered continued and increasing reliance on ED services. Unchecked, the growing tidal wave of mental health patients in need of care can be expected to rise significantly, flooding EDs throughout the world for the foreseeable future.

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