Chapter 30: Comorbidity of Psychiatric Illness and Physical Illness

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Introduction

Psychiatric illnesses rarely occur in isolation; patients will often present with two or more co-occurring psychiatric illnesses. For instance, a mood disorder is often accompanied by an anxiety disorder, and substance use disorders and trauma often present hand-in-hand. This pattern of co-occurrence includes physical illness as mental and physical health are closely interconnected. For instance, chronic physical illnesses such as cardiovascular disease, diabetes, chronic pain, cancer, and autoimmune disorders often have a significant impact on mental health, while psychiatric illnesses can, in turn, affect the onset, course, and prognosis of physical conditions for example the association of schizophrenia with a substantial burden of physical illness. By understanding these interactions, we can provide more holistic and comprehensive care to individuals with comorbidities.

Epidemiology of Comorbidity

Comorbidity of Psychiatric Illnesses

Many patients will present with multiple concurrent psychiatric illnesses, however prevalence rates of comorbidity reported across populations differ. For instance, results from a North American national survey demonstrate that the lifetime prevalence of having two or more psychiatric disorders was as high as 28%, and three or more was 17% (Kessler et al., 2005). Similar findings have been demonstrated in Australian adults (n = 8,841), with approximately 25% of people reporting more than one concurrent psychiatric illness (Teesson et al., 2009), whilst a German sample returned a psychiatric comorbidity prevalence rate of 12% amongst 5,318 adults in the community (Jacobi et al., 2014).

Comorbidity of mental health issues also tends to vary with age, with children demonstrating less psychiatric comorbidity compared to adults (Kessler et al., 2005). Vasileva et al. (2021) conducted a meta-analysis of 10 epidemiological studies on children aged 1-7 years (n = 18,282), demonstrating that 6% had more than one psychiatric illness. On the other hand, some special populations tend to have greater psychiatric comorbidity than the general population. For instance, foster children (e.g., 31% of foster children in a Norwegian sample; (Lehmann et al., 2013) and incarcerated psychiatric patients (e.g., 57% of Dutch men in psychiatric penitentiary centres; (van Buitenen et al., 2020) report far higher rates of psychiatric comorbidity compared to people in the community.

Depression and anxiety disorders (see Chapter 18), being the most prevalent mental health conditions, are most commonly comorbid with other psychiatric illnesses (Kessler et al., 2005). However, due to the complexity and the intrusiveness of symptoms, trauma-related conditions such as Post Traumatic Stress Disorder (PTSD; see Chapter 20) are also commonly comorbid with other psychiatric conditions. For example, Kang et al. (2019) systematic review (n = 24 studies) demonstrated that PTSD was strongly comorbid with depressive disorders (33%-52%), generalized anxiety disorder (14%-15%), and substance use disorders (2%-11%) amongst older war veterans.

Table 30.1. Commonly occurring specific psychiatric illnesses and physical health conditions.

Commonly Occurring Conditions	Description
Depression and Cardiovascular Disease	Depression is frequently comorbid with cardiovascular disease, including conditions like coronary artery disease, heart failure, and stroke. The chronic stress associated with depression can contribute to inflammation, endothelial dysfunction, and other physiological changes that increase the risk of cardiovascular problems (Hare et al., 2014).
Anxiety Disorders and Gastrointestinal Disorders	Anxiety disorders, such as generalized anxiety disorder and panic disorder, often coexist with gastrointestinal conditions like irritable bowel syndrome and inflammatory bowel disease. The exact mechanisms underlying this comorbidity are not fully understood, but stress and the gut-brain axis play significant roles (Meuret et al., 2020).
Eating Disorders and Metabolic Conditions	Eating disorders, such as anorexia nervosa, bulimia nervosa, and binge eating disorder, often have comorbid metabolic conditions, including diabetes (Winston, 2020), and metabolic syndrome (Hudson et al., 2020). The unhealthy eating patterns associated with eating disorders can disrupt metabolic regulation and lead to long-term physical health consequences.
Bipolar Disorder and Cardiovascular Disorders	Bipolar disorder has been linked to an increased risk of cardiovascular disorders, including hypertension, coronary artery disease, and metabolic syndrome (Laursen et al., 2013). Both the inherent biological factors and lifestyle behaviours, such as sedentary lifestyle and poor dietary choices, contribute to this comorbidity
Schizophrenia and Metabolic Syndrome	Individuals with schizophrenia have a higher prevalence of metabolic syndrome, which includes obesity, dyslipidaemia, hypertension, and insulin resistance (Mitchell et al., 2013). Antipsychotic medications, particularly second-generation antipsychotics, can contribute to weight gain and metabolic disturbances, further increasing the risk of metabolic syndrome
PTSD and Chronic Pain	Chronic pain conditions, such as fibromyalgia and chronic low back pain, are commonly comorbid with PTSD. Traumatic experiences can heighten pain perception and increase the risk of developing chronic pain conditions. Conversely, chronic pain can exacerbate PTSD symptoms and complicate recovery (Brennstuhl et al., 2015).

Comorbidity Psychiatric Illnesses and Physical Conditions

Comorbidity is not limited to psychiatric illnesses alone but also extends to physical health conditions. The presence of comorbidities significantly impacts the diagnosis, treatment, and overall well-being of individuals, requiring a comprehensive and integrated approach to patient care. At present, in the absence of such an approach, people with a mental illness have a substantially reduced lifespan of 15.9 years in men and 12.0 years in women compared to the general community (Lawrence et al., 2013). This difference is increasing.

The Australian National Survey of Mental Health and Wellbeing indicated that 1 in 8 (12%) adults with a 12-month prevalence of mental illness also reported a comorbid physical condition. Additionally, 1 in 20 (5%) reported two or more comorbid physical conditions (ABS, 2008). Further to this, the *National Health Survey: Mental Health and co-existing physical health conditions 2014-2015* indicates that 15.8% of all Australians (3.6 million people) report co-existing long-term mental and behavioural and physical health conditions. Examples of commonly occurring specific psychiatric illnesses and physical health conditions are listed in Table 30.1.

Overlapping Aetiologies - The Reason Comorbidity is so Common

A significant reason for widespread comorbidity across psychiatric illnesses is that many disorders have overlapping aetiologies, meaning that they can have common underlying causes or risk factors. This subtle interchange of aetiological processes over the developmental course in the individual such as genetics, neurobiological abnormalities, stressors from the environment, and cognitive and behavioural processes contribute to a multifinality of outcomes in which multiple disorders develop and express themselves as different psychiatric and physical conditions (Table 30.2).

It's important to note that while these overlapping aetiologies provide insight into the co-occurrence of mental health disorders, they do not fully explain the complex interactions and individual differences involved. Mental health disorders are multifaceted, and the interplay between genetic, environmental, and psychosocial factors is unique for each person. Understanding these overlapping aetiologies can help inform treatment approaches that address multiple conditions simultaneously. Also, one needs to avoid attributing physical symptoms to psychiatric illness in people with an established psychiatric diagnosis. The identification of new symptoms should trigger a careful review and investigation recognising that although the somatisation of psychological issues occurs, so does physical illness.

Table 30.2. Overlapping aetiologies of disorders.

Genetic Factors	Many mental health disorders have a genetic component, and certain genetic variations or mutations can increase the risk for multiple disorders. For instance, there may be genetic susceptibility shared between depression and anxiety disorders, or between bipolar disorder and schizophrenia (Lee et al., 2019; Smoller, 2016).
Neurobiological Abnormalities	Disruptions in brain structure, function, or neurotransmitter systems can be involved in the development of various mental health disorders. For example, autoimmune disease has been implicated in significant psychiatric and neurological illness e.g. anti-NMDA encephalitis (Pollak et al., 2020).
Environmental Stressors	Adverse life events, such as trauma, abuse, or chronic stress, can contribute to the development of different mental health disorders. Traumatic experiences, are needed to develop post-traumatic stress disorder (PTSD) but also increase the risk of developing schizophrenia (Bailey et al., 2018). Substance abuse can exacerbate both physical and mental illness.
Cognitive and Behavioural Processes	Certain cognitive and behavioural processes may be common to multiple mental health disorders. Negative cognitive biases, impaired emotion regulation, or maladaptive coping strategies can be observed in conditions like depression, anxiety disorders, and eating disorders (American Psychiatric Association, 2013).

A similar set of closely related factors can be described for the interaction of psychiatric illness and physical illness. Particularly for chronic illnesses there is substantial overlap in illnesses (see Figure 30.1). People with psychiatric illnesses are more likely to smoke, abuse other substances, eat poorly and be more sedentary than other people in the community worsening both their physical and mental health. Our health system addresses the intersection of physical and mental health poorly, with an unclear demarcation of responsibility for the physical health care needs of people with a psychiatric illness and a loss of general health care skills in specialist services. The pharmacological treatments of severe mental illness in particular is associated with weight gain, sedation and other adverse effects that are causally related to the development of cardiovascular disease, type 2 diabetes mellitus, obesity and metabolic syndrome (Firth et al., 2019). These illnesses are related in their own right with an increased risk of high prevalence psychological disorders such as depression and anxiety.

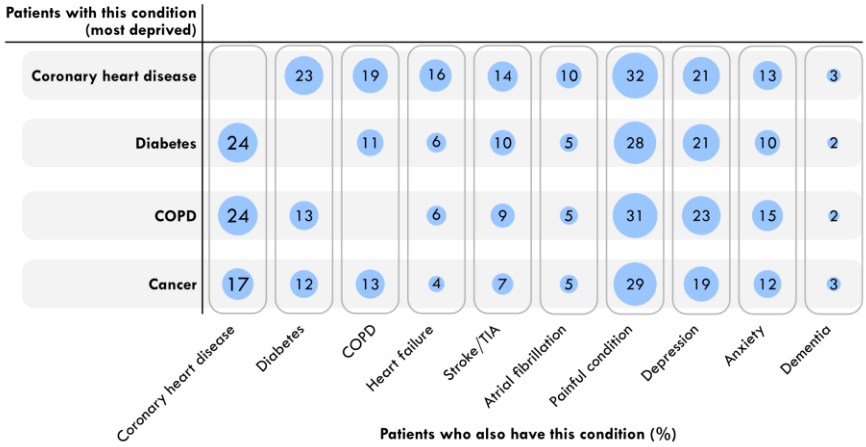

Figure 30.1. Selected comorbidities in people with four common, important disorders. COPD=chronic obstructive pulmonary disease. TIA=transient ischaemic attack (Barnett et al., 2012).

Mutual Maintenance Model of Comorbidity

There are several models that have been proposed to explain the occurrence of comorbidity. One of the most well-established models is the Mutual Maintenance Model (Sharp and Harvey, 2001). The Mutual Maintenance Model is a theoretical framework that seeks to understand the complex relationship between different disorders and how they can influence and exacerbate each other. It suggests that comorbidity is not merely a coincidence but rather often leads to a vicious cycle where the presence of one disorder worsens the other and vice versa. Notably, this model has been applied to the occurrence of PTSD and chronic pain, and proposes that the two disorders exacerbate one another through several mechanisms. First, attentional and cognitive biases toward potentially threatening sensations may lead to overestimations, heightened expectations, and negative interpretations of both fear- and pain-evoking stimuli. Second, pain itself may act as a cue for trauma, triggering fear and hyperarousal, and vice versa. Last, depressive symptoms, avoidance, and fatigue could lead to inactivity, physical deconditioning, and disability - all perpetuating further avoidance and preventing fear extinction (Asmundson et al., 2002).

Treatment Implications

Given the significant prevalence of psychiatric and physical comorbidities, it is essential to consider the implications comorbidities have for treatment.

Look For Comorbidities in Assessment

Although psychiatric conditions initially may present alone, they frequently develop into a range of inter-related pathologies. Common aetiologies and the effects of many physical illnesses or complaints on the individual mean that psychiatric illness is frequently experienced. Anticipating the presence of depression and or anxiety in an individual with chronic pain, is as important as looking for hypertension in an individual with schizophrenia.

Be Part of a Treating Team

Coordinated care involving the general practitioner and whatever specialist care is required will provide the best chance of good quality care. The person in the best place to provide this coordination is usually the general practitioner as long as they feel confident in the treatment of someone with a mental illness. A multidisciplinary approach to care is indicated for many physical health conditions, such as diabetes, integrating mental health care into this matrix will improve patient outcomes.

Early Intervention and Careful Treatment Choice

Prevention is key to the reduction of disease burden and lifestyle interventions around substance use, weight and exercise are central to that. Past reluctance or pessimism around the use of such interventions in people with a mental illness is not warranted with effective interventions developed (Firth et al., 2019), however these programs are still often not generally available.

Treatment for psychiatric illness should acknowledge the interaction of physical and mental illness. Non-pharmacological treatments are frequently effective and have fewer physical adverse effects than pharmacological interventions. For example exercise is an effective treatment for depression and many forms of anxiety, and has an important role to play in the maintenance of our general health (Singh et al., 2023). This effect is bi-directional with improved mental health through exercise assisting in the management of physical illnesses. Improved nutrition helps avoid obesity and metabolic disorder while contributing to mental health (Jacka et al., 2012).

The recognition that many pharmacological treatments have significant adverse effects should also guide initial treatment selection towards psychological interventions for mental illnesses such as anxiety or depression. If pharmacological treatment is indicated due to symptom severity or patient choice, then consideration of possible adverse effects should contribute to medication selection. Avoiding medications associated with significant weight gain is important.

Related to the common aetiology of many psychiatric illnesses is the effectiveness of psychological and pharmacological treatments across diagnostic categories. As an example, antidepressants such as selective serotonin uptake inhibitors (SSRIs) are effective for the treatment of both anxiety and depression.

Screen, Intervene, and Advocate!

Due to the wide range of physical comorbidities that can arise in the population of people with a mental illness it is important to make sure that not only are standard monitoring guidelines adhered to, for example thyroid function tests for individuals being treated with lithium due to the propensity of lithium to alter thyroid function, but more generally that the person with a mental illness, is being seen for their general health. This goes beyond the role of the treating mental health team and needs to involve the whole range of health professionals anchored around the person's general practitioner. Routine health screening, immunisation and interventions for substance use should occur. It is also not sufficient to ensure that blood pressure, weight and waist circumference are being monitored, but that any abnormalities identified are effectively treated and followed up.

Unfortunately, the stigma that attaches to psychiatric illness is still associated with far less assertive care for people with a psychiatric illness resulting in fewer investigations, fewer interventions, and less treatment of physical illness in people with a psychiatric illness (Mitchell et al., 2012). This is even though people with a psychiatric illness are as adherent to their physical health medication as other people in the community (Gorczynski et al., 2017). This contributes to the large gap in life expectancy between people with a psychiatric illness and the general community. Hence the need for advocacy for people with a mental illness when they are in the health system or important treatment choices are being made.

Conclusions

An understanding of comorbidity is central to the development of effective management plans for people with a mental illness. This comorbidity crosses over from psychiatric illness to include substance use and physical illness and is responsible for a significant gap in longevity between people with a mental illness and the general population. The basis of this comorbidity lies in common genetic and other aetiological roots of illness, and its treatment is best addressed by a multidisciplinary health team that can anticipate and then treat the multifaceted problems that our patients present with.

Further Reading

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