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Schizophrenia is a Complex Mental Illness

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Abstract

Schizophrenia is a mental illness, a complex disorder of brain function that consists of a set of characteristic symptoms. Schizophrenia makes it difficult, distorted, or completely impossible for a sick person to distinguish between real and unreal experiences. Due to the wrong recognition of reality, logical thinking loses its usual determinants and moves on incomprehensible and illogical tracks.

Keywords: Schizophrenia; Mental disorder; Mental health

Introduction

Schizophrenia is the most common psychotic condition, characterized by hallucinations, delusions and thought disorders which lead to functional impairment [1]. It occurs in the absence of organic disease, alcohol or drug-related disorders and is not secondary to elevation or depression of mood. The aetiology of schizophrenia involves both biological and environmental factors. There is an increased likelihood of schizophrenia in those with a positive family history, and monozygotic twin studies show a 48% concordance rate. The dopamine hypothesis states that schizophrenia is secondary to over-activity of mesolimbic dopamine pathways in the brain. This is supported by conventional antipsychotics which work by blocking dopamine (D2) receptors, and by drugs that potentiate the pathway (e.g. anti-parkinsonian drugs and amphetamines) causing psychotic symptoms. Factors that interfere with early neurodevelopment such as obstetric complications, fetal injury and low birth weight lead to abnormalities expressed in the mature brain. Adverse life events and psychological stress increase the likelihood of developing schizophrenia. Expressed emotion is the theory that those with relatives that are 'over' involved or that make hostile or excessive critical comments are more likely to relapse. The stress–vulnerability model predicts that schizophrenia occurs due to environmental factors interacting with a genetic predisposition (or brain injury). Patients have different vulnerabilities and so different individuals need to be exposed to different levels of environmental factors to become psychotic.

Characteristics

Schizophrenia is a neurobiological disorder of the brain categorized as a thought disorder with disturbances in thinking, feeling, perceiving, and relating to others and the environment [2]. Schizophrenia is a mixture of both positive and negative symptoms that are present for a significant part of a 1-mo period but with continuous signs of disturbances persisting for at least 6 mo. It is characterized by delusions, hallucinations, disorganized speech and behavior, and other symptoms that cause social or occupational dysfunction. Schizophrenia is considered one of the most disabling of the major mental disorders, with an estimated 2.4 million or about 1.1 percent of Americans afflicted. It can occur at any age, but it tends to first develop (or at least become evident) between adolescence and young adulthood. Risk factors include maternal starvation and infections during fetal development, complications during childbirth, childbirth that occurs in late winter or early spring, and living in an urban environment. Theories of causation include genetics, autoimmune factors, neuroanatomic changes, the dopamine hypothesis (people with schizophrenia appear to have excessive dopamine levels), and psychologic factors. There are several subtypes of schizophrenia, including paranoid, disorganized, catatonic, undifferentiated, and residual.

Mental Disorder

Mental disorders are defined in diagnostic and statistical manuals such as The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and The International Statistical Classification of Diseases and Related Health Problems (ICD-10), and include a broad range of syndromes, which are generally characterized by some combination of abnormal thoughts, emotions, behaviour, and/or cognitive impairments that have an effect on a person's ability to function and may also affect his or her relationships with others [3]. The term 'mental disorder' is often used to refer to:

- The major mental illnesses (e.g. schizophrenia, bipolar affective disorders, depression, generalized anxiety disorder, phobias, obsessive-compulsive disorders, eating disorders, dementias, and delirium).
- Conditions of developmental origin (e.g. intellectual/learning disabilities, autism spectrum conditions, and personality disorders).
- Substance dependency (e.g. alcohol or other mind-altering substances).
- Symptoms associated with physical illnesses (e.g. affective disorders in Parkinson's and Huntington's diseases).

This broad range of mental disorders is common in primary care, with prevalence rates reported in the range of 30–50%. Many of these very varied disorders can be successfully treated or managed in a way that reduces and minimizes their impact on a person's life. Mental disorders that are serious enough potentially to complicate the management of physical health problems are also common. Accident and emergency (A&E) departments frequently see patients who have self-harmed or have suffered injuries owing to substance abuse. A person dependent on alcohol who is admitted for surgery may develop withdrawal symptoms and delirium tremens some days after admission to hospital because of forced abstinence from alcohol. Other examples are anxiety and depression, both of which may arise on a general medical ward in the context of a diagnosis of a life-limiting physical illness. People may also present with symptoms that are not readily explained in which anxiety and depression may be a significant factor.

Conditions

More than 50% of patients with schizophrenia have one or more comorbid psychiatric or general medical conditions [4]. In a study looking at hospital discharge records with a primary diagnosis of schizophrenia, patients consistently showed higher proportions of all comorbid psychiatric conditions examined and of some general medical conditions, including acquired hypothyroidism, contact dermatitis and other eczema, obesity, epilepsy, viral hepatitis, type 2 diabetes, essential hypertension, and various chronic obstructive pulmonary diseases. Knowledge of the risks of comorbid psychiatric and general medical conditions is critical both for clinicians and for patients with schizophrenia. Closer attention to prevention, early diagnosis, and treatment of comorbid conditions may decrease associated morbidity and mortality and improve prognosis among patients with schizophrenia. Schizophrenia symptoms include memory and attention problems, hallucinations, disorganized thinking and behavior, and delusions. Psychotic symptoms typically start in late adolescence and early adulthood. But researchers believe that developmental abnormalities about which they do not yet know also increase diabetes risk.

Psychosis

The term 'psychosis' is used when mental illness causes the person to behave in such a bizarre and inappropriate manner that he or she appears to have lost touch with reality [5]. The symptoms of psychotic illnesses include the experience of delusions, hallucinations, disorganised thoughts and speech, grossly disorganised behaviour as well as social dysfunction. Psychotic illnesses comprise a large group of more specific diagnoses, for example schizophrenia, persistent delusional disorder and schizoaffective disorder. As these specific diagnoses are based on patterns of symptom and behaviour in adults, the categories are not easily applicable to children and young people. It can be difficult to be certain of the diagnosis of a specific psychotic illness in adolescence. The picture often changes with time and can be very mixed with overlap in symptom patterns. However, there is often urgency to diagnose and begin effective treatment because of evidence that the longer the untreated phase of illness, the worse the prognosis. For this reason it is standard practice to refer to 'early onset psychosis' and to leave the diagnosis undifferentiated for several years unless the criteria for one of the specific psychotic disorders, such as schizophrenia, are absolutely and exclusively fulfilled. As described previously, psychotic symptoms can occur with mood disorders such as depressive disorder and bipolar disorder.

Personalities

The central characteristics of both schizoid and schizotypal personalities include avoidance of others, severe deficiencies in social skills, generalized withdrawal from life, and sometimes impairment in perceptual and cognitive capacities [6]. Schizoid personality is a pattern of aloof detachment from social interaction, with a restricted range of emotional expression. These are people who don't need people and are perfectly happy being left to themselves (as opposed to avoidant personalities who actually fear people). Schizotypal personality involves more serious disturbances of thinking, more bizarre behavior, and

possibly delusions. It is thought that these two personality disorders really represent points on a continuum from schizoid to schizotypal to outright schizophrenia, the latter characterized by severe distortions of thought, perception, and action, including delusions and hallucinations. In fact, schizoid and schizotypal personality disorders may episodically decompensate into schizophrenic-like psychotic states, especially under conditions of stress.

The flat, no engaged interpersonal style of the schizoid crime victim may be mistaken for the affective blunting of PTSD. In fact, a number of schizoid and schizotypal victims seem to react less strongly than others to violence by virtue of their internal preoccupation with more important idiosyncratic concerns. These subjects may seem detached and disinterested during a law enforcement encounter, criminal justice proceeding, or clinical interview, not because they're ignoring or disrespecting the interviewer, but because of their internal preoccupations or because human interaction is of little interest to them to begin with. Any real distress may be masked by their relatively nonresponsive style, so a careful clinical history is still imperative. In most cases, their blank, far-away facial expression and attitude will be quite noticeable.

Pet

Positron emission tomography (PET) was the first brain scanning technique developed that allowed doctors and researchers to study brain function rather than structure [7]. PET measures the emission of positrons (anti-electrons) from the brain after a small amount of radioactive isotope is injected into the subject's bloodstream. The isotope used is a short-lived radioactive tracer that decays by emitting a positron. It is combined with a metabolically active molecule such as a sugar. Once injected, there is a short waiting period while the sugar becomes concentrated in the tissues being studied. The subject is placed in an imaging scanner, and the presence of the isotope in the tissues is detected as it decays, emitting positrons. This, therefore, shows the site of brain metabolism or function. PET has been used extensively by doctors in efforts to understand which parts of the brain are involved in many different neurologic illnesses, including seizures, schizophrenia, and Parkinson's disease. PET has also been used to answer other interesting questions, such as which specific part or parts of the brain are involved in certain activities, such as solving mathematic problems, word puzzles, or cognitive tests. PET is an excellent and direct measure of brain activity and can be used to determine brain function during various tasks or during cognitive tests. The resolution is excellent, and allows a physician or researcher to focus in on a very small region of the brain. If a dysfunction in a particular region is suspected, that area can be examined minutely while the subject is challenged with a task that is thought to be controlled in that area. The glucose metabolism can then be measured and compared with other areas.

Diagnosis

Formulating any diagnosis is a thoughtful process; like any serious life illness, the ramifications can be life altering [8]. Not only do the various psychotic disorders differ in their prognosis and in their therapeutic management, but concluding the diagnosis of schizophrenia has serious implications for the patient and the family. The diagnosis is a clinical diagnosis, without the reliance on CT scans or blood tests to diagnose our patients; we must use our analytical skills to reach an acceptable diagnosis. There must be a systematic method of careful assessment and interviewing skills, and collaboration and coordination of data with others when possible. It is then when one can reach an objective diagnosis based on the information and on clinical experience and the presence of the disruption in the patient's life. Since the length of time of the presence of psychotic material is a differentiating factor, the relationship with the patient and, if possible, family is crucial. The nurse–patient relationship creates a therapeutic alliance that is critical to the success of this diagnostic process. A diagnosis of schizophrenia obviously carries many implications; therefore, it is imperative that one should always be careful to gather enough data over time to reach the correct diagnosis. There are no laboratory tests yet that can confirm a diagnosis of schizophrenia, so we rely on the assessment and the presence of a constellation of symptoms and factors. Schizophrenia is often thought of as a diagnosis of exclusion because the consequences of the diagnosis are severe and can limit therapeutic options. There are other common conditions that include psychosis as a prime symptom. DSM-5 (Diagnostic and Statistical Manual, fifth edition) has organized these disorders across a spectrum, which is determined by abnormalities in one or more domains. These include schizoaffective disorder, delusional disorder, and brief psychotic disorder. In short, schizoaffective disorder has features of both schizophrenia (thought) disorder and an affective (mood) disorder. There are time frames for the duration and relationship to the mood symptoms, as well as subtypes specified as bipolar type or depressive type.

Misdiagnosis

Misdiagnosis usually refers to a negligent failure to recognize the nature of the patient's condition, with harm resulting from the consequent failure to implement proper measures of care [9]. A psychiatrist, for example, may be held liable for negligently diagnosing a patient with a personality disorder as schizophrenic, but only if the misdiagnosis affects treatment in a manner that leads to subsequent harm. If, as a result of the diagnosis, the

patient receives neuroleptic medication and later develops TD, liability may well be imposed. Liability may also be imposed if the patient is deemed likely to have improved had the correct diagnosis been made. The mistaken diagnosis, however, must be the result of the clinician's negligence. Had the psychiatrist properly inquired about the signs and symptoms of both schizophrenia and personality disorder, only to have the patient lie about the presence of delusions, the resulting mistake could not be attributed to the psychiatrist's misfeasance. Similarly, if after conducting an evaluation that conformed to the standard of care, the psychiatrist was left with a difficult diagnostic dilemma and made a reasonable judgment that turned out to be incorrect, liability should not accrue.

The advances in biological treatments of demonstrated efficacy have heightened the importance of proper diagnosis. If the negligent failure to consider a diagnosis (e.g., the possibility that a psychotic illness represents bipolar disorder and not schizophrenia) leads to a failure to use a potentially efficacious agent (e.g., a mood stabilizer), with prolonged suffering and repeated hospitalization as a result, a good case for malpractice would seem apparent. If anything prevents such cases from proliferating, it is probably (a) the condition of many of these patients, who are chronically ill and socially impaired and thus unlikely to initiate legal remedies; and (b) that still no absolute one-to-one correlation exists between specific illness and specific treatment with certain efficacy. Otherwise, misdiagnosis would seem to be a ripe area for future litigation.

Hospitalization

There are several points to keep in mind when deciding whether to hospitalize [10]. The first is the presence of a serious psychiatric state along with suicidal threats. For diagnoses like schizophrenia, psychotic depressions, or severe affective disorders, hospitalization may provide the around-the-clock management that only a hospital can provide. A second consideration for hospitalization is if the patient has overwhelming acute problems and no social support. The second consideration is whether the person lives in a home or social environment so destructive that they cannot manage in it, and there are no other available refuges. A third consideration is to monitor psychotropic medications when overdose risk is high. A fourth consideration for hospitalization is when admissions are planned as a long-term treatment plan. This could include conducting exposure treatment of posttraumatic stress in a safe environment and planning a hospital stay when the primary therapist is on vacation, among other, nonacute therapeutic reasons. The fifth consideration is whenever suicide risk outweighs the risk of inappropriate hospitalization. This consideration is especially important in the hospitalization of chronically suicidal individuals, for whom unnecessary hospitalization could be reinforcing suicidal behavior. There are alternatives to hospitalization that provide necessary intensive treatment but without the inpatient status. Partial hospitalization typically involves a day-treatment program for several days or weeks and usually follows a period of inpatient hospitalization. For example, a suicidal individual could spend several days in inpatient care and then go home with the regimen of attending the partial hospitalization program every day for 8 hours for 2 weeks. Basically the patient eats an evening meal and sleeps at home, and spends the rest of the time in treatment. Acute residential treatment involves 24-hour care that is not typically held in a contained facility. They are generally viewed as a kind of respite care and are less costly than inpatient admission. Observation or holding beds allows extended assessment or 24-hour supervision while more triaging options are entertained. Thus, there are more options than inpatient hospitalization that are sometimes overlooked when a patient is deemed a danger to go home alone. It is important for primary care providers to be aware of local resources for comprehensive mental health treatment for suicidal patients.

Conclusion

The severity of the disorder varies from patient to patient: from people who can maintain a satisfactory quality of life and work ability with their illness, to people who may lose their ability to work due to the disorder and whose quality of life can be significantly lower than before the disorder. Schizophrenia is a disease that can be successfully controlled. It most often begins in adolescence, although it can begin later. Symptoms may be unnoticeable at first, such as difficulty concentrating and withdrawing from social relationships. Unfortunately, a longer period of untreated symptoms causes greater and more permanent damage to mental functions and makes it difficult for patients to recover. There is evidence that a psychotic condition causes damage in brain cells that is difficult to repair later. That is why it is important to start treatment as early as possible. It is also important to prevent the onset of new episodes of exacerbation with continuous treatment, as each new episode further damages the patient and increases the risk of new episodes of exacerbation. Treatment programs that combine biological, psychological and psychosocial methods of treatment enable the stabilization of the patient's mental state, recovery of functioning and prevention of new exacerbations.

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