Brief Contents

Psychiatric–Mental Health NURSING

Eighth Edition

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Eighth Edition

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Wolters Kluwer

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

Vice President and Publisher: Julie K. Stegman
Acquisitions Editor: Natasha McIntyre and Michael Kerns
Director of Product Development: Jennifer K. Forestieri
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Design Coordinator: Joseph Clark
Art Director: Jennifer Clements
Manufacturing Coordinator: Karin Duffield
Prepress Vendor: S4Carlisle Publishing Services

8th edition

9 8 7 6 5 4 3 2 1

Printed in China

Library of Congress Cataloging-in-Publication Data

ISBN-13: 978-1-975116-37-8
ISBN-10: 1-975116-37-2

Library of Congress Control Number: 2019910756

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Preface

The eighth edition of *Psychiatric–Mental Health Nursing* maintains a strong student focus, presenting sound nursing theory, therapeutic modalities, and clinical applications across the treatment continuum. The chapters are short, and the writing style is direct in order to facilitate reading comprehension and student learning.

This text uses the nursing process framework and emphasizes therapeutic communication with examples and pharmacology throughout. Interventions focus on all aspects of client care, including communication, client and family education, and community resources, as well as their practical applications in various clinical settings.

In this edition, all content has been updated, as well as the "Best Practice" boxes, to highlight current evidence-based practice. Special features include "Concept Mastery Alerts," which clarify important concepts that are essential to students' learning. "Cultural Considerations" and "Elder Considerations" have special headings to help call attention to this important content. The nursing process sections have a new design to help highlight this content as well. New to this edition are unfolding vignettes that guide students in thinking critically by applying what they've learned to different client scenarios.

Organization of the Text

Unit 1: Current Theories and Practice provides a strong foundation for students. It addresses current issues in psychiatric nursing as well as the many treatment settings in which nurses encounter clients. It thoroughly discusses neurobiologic theories, psychopharmacology, and psychosocial theories and therapy as a basis for understanding mental illness and its treatment.

Unit 2: Building the Nurse–Client Relationship presents the basic elements essential to the practice of mental health nursing. Chapters on therapeutic relationships and therapeutic communication prepare students to begin working with clients both in mental health settings and in all other areas of nursing practice. The chapter on the client's response to illness provides a framework for understanding the individual client. An entire chapter is devoted to assessment, emphasizing its importance in nursing.

Unit 3: Current Social and Emotional Concerns covers topics that are not exclusive to mental health settings. These include legal and ethical issues; anger, aggression, and hostility; abuse and violence; and grief and loss. Nurses in all practice settings find themselves confronted with issues related to these topics. Additionally, many legal and ethical concerns are interwoven with issues of violence and loss.

Unit 4: Nursing Practice for Psychiatric Disorders covers all the major categories of mental disorders. This unit has been reorganized to reflect current concepts in mental disorders. New chapters include trauma and stressor-related disorders, obsessive–compulsive disorder and related disorders, somatic symptom disorders, disruptive disorders, and neurodevelopmental disorders. Each chapter provides current information on etiology, onset and clinical course, treatment, and nursing care. The chapters are compatible for use with any medical classification system for mental disorders.

Pedagogical Features

Psychiatric–Mental Health Nursing incorporates several pedagogical features designed to facilitate student learning:

- Learning Objectives focus on the students' reading and study.
- Key Terms identify new terms used in the chapter. Each term is identified in bold and defined in the text.
- Application of the Nursing Process sections, with a special design in this edition, highlight the assessment framework to help students compare and contrast various disorders more easily.
- Critical Thinking Questions stimulate students' thinking about current dilemmas and issues in mental health.
- Key Points summarize chapter content to reinforce important concepts.
- Chapter Study Guides provide workbook-style questions for students to test their knowledge and understanding of each chapter.

Special Features

- **Clinical Vignettes**, provided for each major disorder discussed in the text, "paint a picture" of a client dealing with the disorder to enhance understanding.
- **Nursing Care Plans** demonstrate a sample plan of care for a client with a specific disorder.

- **Drug Alerts** highlight essential points about psychotropic drugs.
- **Warning boxes** are the FDA black box drug warnings for specific medications.
- **Cultural Considerations** sections highlight diversity in client care.
- **Elder Considerations** sections highlight the key considerations for a growing older adult population.
- **Therapeutic dialogues** give specific examples of the nurse–client interaction to promote therapeutic communication skills.
- **Client and Family Education** boxes provide information that helps strengthen students' roles as educators.
- **Nursing Interventions** provide a summary of key interventions for the specific disorder.
- ***DSM-5* Diagnostic Criteria** boxes include specific diagnostic information for the disorder.
- **Best Practices boxes** highlight current evidence-based practice and future directions for research on a wide variety of practice issues.
- **Self-Awareness Issues** encourage students to reflect on themselves, their emotions, and their attitudes as a way to foster both personal and professional development.
- **Concept Mastery Alerts** clarify important concepts that are essential to students' learning and practice.
- ***vSim** for Nursing* **Unfolding Patient Stories**, written by the National League for Nursing, are an engaging way to begin meaningful conversations in the classroom. These vignettes, which appear throughout the book, feature patients from Wolters Kluwer's ***vSim** for Nursing* | *Mental Health*.

Ancillary Package for the Eighth Edition

Instructor Resources

The Instructor Resources are available online at http://thepoint.lww.com/Videbeck8e for instructors who adopt *Psychiatric–Mental Health Nursing*. Information and activities that will help you engage your students throughout the semester include:

- PowerPoint Slides
- Image Bank
- Test Generator
- Pre-Lecture Quizzes
- Discussion Topics
- Web Assignments
- Guided Lecture Notes
- Case Studies

Lippincott CoursePoint+

The same trusted solution, innovation, and unmatched support that you have come to expect from *Lippincott CoursePoint+* is now enhanced with more engaging learning tools and deeper analytics to help prepare students for practice. This powerfully integrated, digital learning solution combines learning tools, case studies, virtual simulation, real-time data, and the most trusted nursing education content on the market to make curriculum-wide learning more efficient and to meet students where they're at in their learning. And now, it's easier than ever for instructors and students to use, giving them everything they need for course and curriculum success!

Lippincott CoursePoint+ includes:

- Engaging course content provides a variety of learning tools to engage students of all learning styles.
- A more personalized learning approach, including adaptive learning powered by PrepU, gives students the content and tools they need at the moment they need it, giving them data for more focused remediation and helping to boost their confidence.
- Varying levels of case studies, virtual simulation, and access to Lippincott Advisor help students learn the critical thinking and clinical judgment skills to help them become practice-ready nurses.
- Unparalleled reporting provides in-depth dashboards with several data points to track student progress and help identify strengths and weaknesses.
- Unmatched support includes training coaches, product trainers, and nursing education consultants to help educators and students implement CoursePoint with ease.

Student Resources

Students who purchase a new copy of *Psychiatric–Mental Health Nursing* gain access to the following learning tools on using the access code in the front of their book:

- **Watch and Learn Videos**, highlighting films depicting individuals with mental health disorders, provide students the opportunity to approach nursing care related to mental health and illness in a novel way.
- **NCLEX-Style Review Questions** help students review important concepts and practice for the NCLEX examination.
- **Journal Articles** offer access to current research available in Wolters Kluwer journals.
- **Internet Resources** provide relevant web links to further explore chapter content.

New with this edition, ***vSim** for Nursing* | Mental Health, a new virtual simulation platform is available via thePoint®. Codeveloped by Laerdal Medical and Wolters Kluwer, ***vSim** for Nursing* | *Mental Health* helps students develop clinical competence and decision-making skills as they interact with virtual patients in a safe, realistic environment. ***vSim** for Nursing* records and assesses student decisions throughout the simulation, then provides a personalized feedback log highlighting areas needing improvement. Also available via thePoint®, Lippincott DocuCare combines web-based electronic health record simulation software with clinical case scenarios that link directly to many of the skills presented in *Focus on Nursing Pharmacology*. Lippincott DocuCare's nonlinear solution works well in the classroom, simulation lab, and clinical practice.

Practice Makes Perfect, and This Is the Perfect Practice

PrepU is an adaptive learning system designed to improve students' competency and mastery and provide instructors with real-time analysis of their students' knowledge at both a class and individual student level.

PrepU demonstrates *formative assessment*—it determines what students know *as* they are learning and focuses them on what they are struggling with, so they don't spend time on what they already know. Feedback is immediate and remediates students back to this specific text, so they know where to get help in understanding a concept.

Adaptive and Personalized

No student has the same experience—PrepU recognizes when a student has reached "mastery" of a concept before moving him or her on to higher levels of learning. This will be a different experience for each student based on the number of questions he or she answers and whether he or she answers them correctly. Each question is also "normed" by all students in PrepU around the country—how every student answers a specific question generates the difficulty level of each question in the system. This adaptive experience allows students to practice at their own pace and study much more effectively.

Personalized Reports

Students get individual feedback about their performance, and instructors can track class statistics to gauge the level of understanding. Both get a window into performance to help identify areas for remediation. Instructors can access the average mastery level of the class, students' strengths and weaknesses, and how often students use PrepU. Students can see their own progress charts showing strengths and weaknesses—so they can continue quizzing in areas where they want to improve.

Acknowledgments

Many years of teaching and practice have shaped my teaching efforts and this textbook. My experience with students and their curiosity and enthusiasm guide me to keep this text useful, easy to read and understand, and focused on student learning. As always, I strive to keep the text relevant to student needs. I want to thank the people at Wolters Kluwer for their valuable assistance in making this textbook a reality. Their contributions to its success are greatly appreciated. I thank Natasha McIntyre, Staci Wolfson, Jennifer Forestieri, Dave Murphy, and David Saltzberg for a job well done once again. My friends continue to listen, support, and encourage my efforts in all endeavors. My family and friends provide love and support in this endeavor, as well as in the journey of life. I am truly fortunate and grateful.

—Sheila L. Videbeck

Contents

UNIT 1

Current Theories and Practice

CHAPTER 1

Foundations of Psychiatric–Mental Health Nursing

KEY TERMS

- asylum
- boarding
- case management
- deinstitutionalization
- *Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5)*
- managed care
- managed care organizations
- mental health
- mental illness
- phenomena of concern
- psychotropic drugs
- self-awareness
- standards of care
- utilization review firms

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

1. Describe the characteristics of mental health and mental illness.
2. Discuss the purpose and use of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5)*.
3. Identify important historical landmarks in psychiatric care.
4. Discuss current trends in the treatment of people with mental illness.
5. Discuss the American Nurses Association (ANA) standards of practice for psychiatric–mental health nursing.
6. Describe the common student concerns about psychiatric nursing.

INTRODUCTION

As you begin the study of psychiatric–mental health nursing, you may be excited, uncertain, and even somewhat anxious. The field of mental health often seems a little unfamiliar or mysterious, making it hard to imagine what the experience will be like or what nurses do in this area. This chapter addresses these concerns and others by providing an overview of the history of mental illness, advances in treatment, current issues in mental health, and the role of the psychiatric nurse.

MENTAL HEALTH AND MENTAL ILLNESS

Mental health and **mental illness** are difficult to define precisely. People who can carry out their roles in society and whose behavior is appropriate and adaptive are viewed as healthy. Conversely, those who fail to fulfill roles and carry out responsibilities or whose behavior is inappropriate are viewed as ill. The culture of any society strongly influences its values and beliefs, and this, in turn, affects how that society defines health and illness. What one society may view as acceptable and appropriate, another society may see as maladaptive and inappropriate.

Mental Health

The World Health Organization defines health as a state of complete physical, mental, and social wellness, not merely the absence of disease or infirmity. This definition emphasizes health as a positive state of well-being. People in a state of emotional, physical, and social well-being fulfill life responsibilities, function effectively in daily life, and are satisfied with their interpersonal relationships and themselves.

No single universal definition of mental health exists. Generally, a person's behavior can provide clues to his or her mental health. Because each person can have a different view or interpretation of behavior (depending on his or her values and beliefs), the determination of mental health may be difficult. In most cases, mental health is a state of emotional, psychological, and social wellness evidenced by satisfying interpersonal relationships, effective behavior and coping, positive self-concept, and emotional stability.

Mental health has many components, and a wide variety of factors influence it. These factors interact; thus, a person's mental health is a dynamic, or ever-changing, state. Factors influencing a person's mental health can be categorized as individual, interpersonal, and social/cultural. *Individual*, or personal, factors include a person's biologic makeup, autonomy and independence, self-esteem, capacity for growth, vitality, ability to find meaning in life, emotional resilience or hardiness, sense of belonging, reality orientation, and coping or stress management abilities. *Interpersonal*, or relationship, factors include effective communication, ability to help others, intimacy, and a balance of separateness and connectedness. *Social/cultural*, or environmental, factors include a sense of community, access to adequate resources, intolerance of violence, support of diversity among people, mastery of the environment, and a positive, yet realistic, view of one's world. Individual, interpersonal, and social/cultural factors are discussed further in Chapter 7.

Mental Illness

Mental illness includes disorders that affect mood, behavior, and thinking, such as depression, schizophrenia, anxiety disorders, and addictive disorders. Mental disorders often cause significant distress or impaired functioning or both. Individuals experience dissatisfaction with self, relationships, and ineffective coping. Daily life can seem overwhelming or unbearable. Individuals may believe that their situation is hopeless.

Factors contributing to mental illness can also be viewed within individual, interpersonal, and social/cultural categories. Individual factors include biologic makeup, intolerable or unrealistic worries or fears, inability to distinguish reality from fantasy, intolerance of life's uncertainties, a sense of disharmony in life, and a loss of meaning in one's life. Interpersonal factors include ineffective communication, excessive dependency on or withdrawal from relationships, no sense of belonging, inadequate social support, and loss of emotional control. Social/cultural factors include lack of resources, violence, homelessness, poverty, an unwarranted negative view of the world, and discrimination such as stigma, racism, classism, ageism, and sexism. It is important to note that some of these social/cultural factors can result in isolation, feelings of alienation, and maladaptive, violent, or criminal behavior. This may support a diagnosis of a personality disorder but not necessarily a mental illness with symptoms amenable to treatment with medication. This is an ongoing debate among health care professionals; is it illness or bad behavior? The answers to these questions are not always clear.

DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS

The ***Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5)***, is a taxonomy published by the American Psychiatric Association and revised as needed. The current edition made some major revisions and was released in 2013. The *DSM-5* describes all mental disorders, outlining specific diagnostic criteria for each based on clinical experience and research. All mental health clinicians who diagnose psychiatric disorders use this diagnostic taxonomy.

The *DSM-5* has three purposes:

- To provide a standardized nomenclature and language for all mental health professionals
- To present defining characteristics or symptoms that differentiate specific diagnoses
- To assist in identifying the underlying causes of disorders

The classification system allows the practitioner to identify all the factors that relate to a person's condition:

- All major psychiatric disorders such as depression, schizophrenia, anxiety, and substance-related disorders
- Medical conditions that are potentially relevant to understanding or managing the person's mental disorder as well as medical conditions that might contribute to understanding the person

- Psychosocial and environmental problems that may affect the diagnosis, treatment, and prognosis of mental disorders. Included are problems with the primary support group, the social environment, education, occupation, housing, economics, access to health care, and the legal system.

Although student nurses do not use the *DSM-5* to diagnose clients, they will find it a helpful resource to understand the reason for the admission and to begin building knowledge about the nature of psychiatric illnesses.

HISTORICAL PERSPECTIVES OF THE TREATMENT OF MENTAL ILLNESS

Ancient Times

People of ancient times believed that any sickness indicated displeasure of the gods and, in fact, was a punishment for sins and wrongdoing. Those with mental disorders were viewed as either divine or demonic, depending on their behavior. Individuals seen as divine were worshipped and adored; those seen as demonic were ostracized, punished, and sometimes burned at the stake. Later, Aristotle (382–322 BC) attempted to relate mental disorders to physical disorders and developed his theory that the amounts of blood, water, and yellow and black bile in the body controlled the emotions. These four substances, or humors, corresponded with happiness, calmness, anger, and sadness. Imbalances of the four humors were believed to cause mental disorders; therefore, treatment was aimed at restoring balance through bloodletting, starving, and purging. Such "treatments" persisted well into the 19th century (Baly, 1982).

Possessed by demons

In early Christian times (1–1000 AD), primitive beliefs and superstitions were strong. All diseases were again blamed on demons, and the mentally ill were viewed as possessed. Priests performed exorcisms to rid sufferers of evil spirits. When that failed, they used more severe and brutal measures, such as incarceration in dungeons, flogging, and starving.

In England during the Renaissance (1300–1600), people with mental illness were distinguished from criminals. Those considered harmless were allowed to wander the countryside or live in rural communities, but the more "dangerous lunatics" were thrown in prison, chained, and starved (Rosenblatt, 1984). In 1547, the Hospital of St. Mary of Bethlehem was officially declared a hospital for the insane, the first of its kind. By 1775, visitors at the institution were charged a fee for the privilege of viewing and ridiculing the inmates, who were seen as less than human animals (McMillan, 1997). During this same period in the colonies (later the United States), the mentally ill were considered evil or possessed and were punished. Witch hunts were conducted, and offenders were burned at the stake.

Period of Enlightenment and Creation of Mental Institutions

In the 1790s, a period of enlightenment concerning persons with mental illness began. Philippe Pinel in France and William Tuke in England formulated the concept of **asylum** as a safe refuge or haven offering protection at institutions where people had been whipped, beaten, and starved because they were mentally ill (Gollaher, 1995). With this movement began the moral treatment of the mentally ill. In the United States, Dorothea Dix (1802–1887) began a crusade to reform the treatment of mental illness after a visit to Tuke's institution in England. She was instrumental in opening 32 state hospitals that offered asylum to the suffering. Dix believed that society was obligated to those who were mentally ill; she advocated adequate shelter, nutritious food, and warm clothing (Gollaher, 1995).

The period of enlightenment was short-lived. Within 100 years after the establishment of the first asylum, state hospitals were in trouble. Attendants were accused of abusing the residents, the rural locations of hospitals were viewed as isolating patients from their families and homes, and the phrase *insane asylum* took on a negative connotation.

Sigmund Freud and Treatment of Mental Disorders

The period of scientific study and treatment of mental disorders began with Sigmund Freud (1856–1939) and others, such as Emil Kraepelin (1856–1926) and Eugen

Bleuler (1857–1939). With these men, the study of psychiatry and the diagnosis and treatment of mental illness started in earnest. Freud challenged society to view human beings objectively. He studied the mind, its disorders, and their treatment as no one had done before. Many other theorists built on Freud's pioneering work (see Chapter 3). Kraepelin began classifying mental disorders according to their symptoms, and Bleuler coined the term *schizophrenia*.

Development of Psychopharmacology

A great leap in the treatment of mental illness began in about 1950 with the development of **psychotropic drugs**, or drugs used to treat mental illness. Chlorpromazine (Thorazine), an antipsychotic drug, and lithium, an antimanic agent, were the first drugs to be developed. Over the following 10 years, monoamine oxidase inhibitor antidepressants; haloperidol (Haldol), an antipsychotic; tricyclic antidepressants; and antianxiety agents, called benzodiazepines, were introduced. For the first time, drugs actually reduced agitation, psychotic thinking, and depression. Hospital stays were shortened, and many people became well enough to go home. The level of noise, chaos, and violence greatly diminished in the hospital setting.

Move toward Community Mental Health

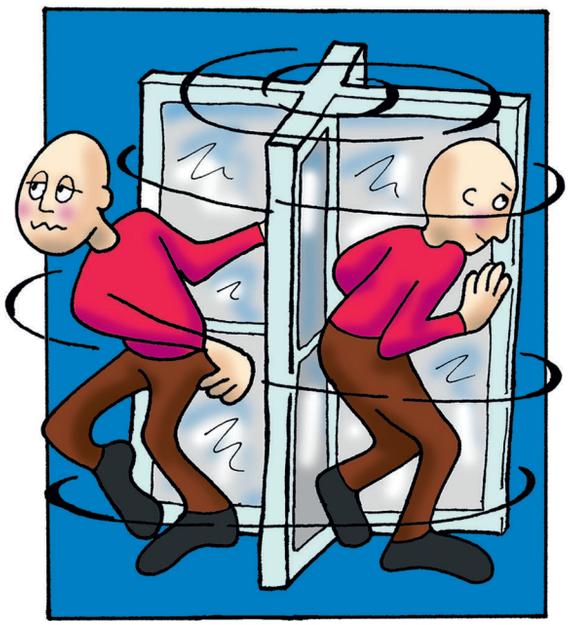
The movement toward treating those with mental illness in less restrictive environments gained momentum in 1963 with the enactment of the Community Mental Health Centers Construction Act. **Deinstitutionalization**, a deliberate shift from institutional care in state hospitals to community facilities, began. Community mental health centers served smaller geographic catchment, or service, areas that provided less restrictive treatment located closer to individuals' homes, families, and friends. These centers provided emergency care, inpatient care, outpatient services, partial hospitalization, screening services, and education. Thus, deinstitutionalization accomplished the release of individuals from long-term stays in state institutions, the decrease in admissions to hospitals, and the development of community-based services as an alternative to hospital care.

In addition to deinstitutionalization, federal legislation was passed to provide an income for disabled persons: supplemental security income (SSI) and Social Security disability income (SSDI). This allowed people with severe and persistent mental illness to be more independent financially and to not rely on family for money. States were able to spend less money on care of the mentally ill than they had spent when these individuals were in state hospitals because this program was federally funded. Also, commitment laws changed in the early 1970s, making it more difficult to commit people for mental health treatment against their will. This further decreased the state hospital populations and, consequently, the money that states spent on them.

MENTAL ILLNESS IN THE 21ST CENTURY

According to the National Institutes of Health (2018), 44.7 million people in the United States have a mental illness, though only 19.2 million received treatment with in the past year. The 18 to 25 age group had the highest prevalence of mental illness as well as the lowest percent of people receiving treatment. Furthermore, mental illness or serious emotional disturbances impair daily activities for an estimated 15 million adults and 4 million children and adolescents. For example, attention-deficit/hyperactivity disorder affects 3% to 5% of school-aged children. More than 10 million children younger than 7 years grow up in homes where at least one parent suffers from significant mental illness or substance abuse, a situation that hinders the readiness of these children to start school. The economic burden of mental illness in the United States, including both health care costs and lost productivity, exceeds the economic burden caused by all kinds of cancer. Mental disorders are the leading cause of disability in the United States and Canada for persons 15 to 44 years of age. Yet, only one in four adults and one in five children and adolescents requiring mental health services get the care they need.

Some believe that deinstitutionalization has had negative as well as positive effects. Although deinstitutionalization reduced the number of public hospital beds by 80%, the number of admissions to those beds correspondingly increased by 90%. Such findings have led to the term *revolving door effect*. Although people with severe and persistent mental illness have shorter hospital stays, they are admitted to hospitals more frequently. The continuous flow of clients being admitted and discharged quickly overwhelms general hospital psychiatric units. In some cities, emergency department (ED) visits for acutely disturbed persons have increased by 400% to 500%. Patients are often boarded or kept in the ED while waiting to see if the crisis deescalates or until an inpatient bed can be located or becomes available. The practice of **boarding** leads to frustration of health care personnel, dissatisfaction with care for clients and their families, and some believe an increase in suicide. Provision of an adequate number of psychiatric inpatient beds could better meet the needs of clients and might even decrease homelessness, incarceration, and violence (Allison et al., 2018).



Revolving door

Shorter unplanned hospital stays further complicate frequent repeated hospital admissions. People with severe and persistent mental illness may show signs of improvement in a few days but are not stabilized. Thus, they are discharged into the community without being able to cope with community living. However, planned or scheduled short hospital stays do not contribute to the revolving door phenomenon and may show promise in dealing with this issue (see Chapter 4). The result frequently is decompensation and rehospitalization. In addition, many people have a dual problem of both severe mental illness and substance abuse. Use of alcohol and drugs exacerbates symptoms of mental illness, again making rehospitalization more likely. Substance abuse issues cannot be dealt within the 3 to 5 days typical for admissions in the current managed care environment.

Homelessness is a major problem in the United States today with 610,000 people, including 140,000 children, homeless on any given night. Approximately 257,300 of the homeless population (33%) have a severe mental illness of a chronic substance use disorder. The segment of the homeless population considered to be chronically homeless numbers 110,000, and 30% of this group has a psychiatric illness and two-thirds have a primary substance abuse disorder or other chronic health condition (Treatment Advocacy Center, 2019). Those who are homeless and mentally ill are found in parks, airport and bus terminals, alleys and stairwells, jails, and other public places. Some use shelters, halfway houses, or board-and-care rooms; others rent cheap hotel rooms when they can afford it. Homelessness worsens psychiatric problems for many people with mental illness who end up on the streets, contributing to a vicious cycle.

Many of the problems of the homeless mentally ill, as well as of those who pass through the revolving door of psychiatric care, stem from the lack of adequate community resources. Money saved by states when state hospitals were closed has not been transferred to community programs and support. Inpatient psychiatric treatment still accounts for most of the spending for mental health in the United States, so community mental health has never been given the financial base it needs to be effective. In addition, mental health services provided in the community must be individualized, available, and culturally relevant to be effective.

Objectives for the Future

More people are being treated for mental illness than in the past. But large numbers of people go untreated, particularly among the homeless population, persons who are incarcerated, and people who experience both mental illness and substance abuse. Statistics like these underlie the *Healthy People 2020* objectives for mental health proposed by the U.S. Department of Health and Human Services (Box 1.1). These objectives, originally developed

BOX 1.1 *Healthy People 2020* Mental Health Objectives

- Reduce the suicide rate.
- Reduce suicide attempts by adolescents.
- Reduce the proportion of adolescents who engage in disordered eating behaviors in an attempt to control their weight.
- Reduce the proportion of persons who experience major depressive episode.
- Increase the proportion of primary care facilities that provide mental health treatment onsite or by paid referral.
- Increase the proportion of juvenile residential facilities that screen admissions for mental health problems.
- Increase the proportion of persons with serious mental illness who are employed.
- Increase the proportion of adults with mental health disorders who receive treatment.
- Increase the proportions of persons with co-occurring substance abuse and mental disorders who receive treatment for both disorders.
- Increase depression screening by primary care providers.
- Increase the number of homeless adults with mental health problems who receive mental health services.

U.S. Department of Health and Human Services. (2010). *Healthy People 2020*. Washington, DC: DHHS.

as *Healthy People 2000*, were revised in January 2000 and again in January 2010 to increase the number of people who are identified, diagnosed, treated, and helped to live healthier lives. The objectives also strive to decrease rates of suicide and homelessness, to increase employment among those with serious mental illnesses, and to provide more services both for juveniles and for adults who are incarcerated and have mental health problems. A framework has been developed for *Healthy People 2030,* which will be available in 2020.

Community-Based Care

After deinstitutionalization, the 2,000 community mental health centers that were supposed to be built by 1980 had not materialized. By 1990, only 1,300 programs provided various types of psychosocial rehabilitation services. Persons with severe and persistent mental illness were either ignored or underserved by community mental health centers. This meant that many people needing services were and still are in the general population with their needs unmet. The Treatment Advocacy Center (2018) reports that about one-half of all persons with severe mental illness have received no treatment of any kind in the previous 12 months. Persons with minor or mild cases are more likely to receive treatment, while those with severe and persistent mental illness are least likely to be treated. Consequences of nontreatment are cited by the Treatment Advocacy Center (2018) as:

- Homelessness
- Psychiatric boarding
- Arrest
- Incarceration
- Victimization
- Suicidality
- Familial violence
- Danger to other

Community support service programs were developed to meet the needs of persons with mental illness outside the walls of an institution. These programs focus on rehabilitation, vocational needs, education, and socialization as well as on management of symptoms and medication. These services are funded by states or counties and some private agencies. Therefore, the availability and quality of services vary in different areas of the country. For example, rural areas may have limited funds to provide mental health services and smaller numbers of people needing them. Large metropolitan areas, though having larger budgets, also have thousands of people in need of service; rarely is there enough money to provide all the services needed by the population. Chapter 4 provides a detailed discussion of community-based programs.

The community-based system did not accurately anticipate the extent of the needs of people with severe and persistent mental illness. Many clients do not have the skills needed to live independently in the community, and teaching these skills is often time-consuming and labor-intensive, requiring a 1:1 staff-to-client ratio. In addition, the nature of some mental illnesses makes learning these skills more difficult. For example, a client who is hallucinating or "hearing voices" can have difficulty listening to or comprehending instructions. Other clients experience drastic shifts in mood, unable to get out of bed one day, and then unable to concentrate or pay attention a few days later.

Despite the flaws in the system, community-based programs have positive aspects that make them preferable for treating many people with mental illnesses. Clients can remain in their communities, maintain contact with family and friends, and enjoy personal freedom that is not possible in an institution. People in institutions often lose motivation and hope as well as functional daily living skills, such as shopping and cooking. Therefore, treatment in the community is a trend that will continue.

Cost Containment and Managed Care

Health care costs spiraled upward throughout the 1970s and 1980s in the United States. **Managed care** is a concept designed to purposely control the balance between the quality of care provided and the cost of that care. In a managed care system, people receive care based on need rather than on request. Those who work for the organization providing the care assess the need for care. Managed care began in the early 1970s in the form of health maintenance organizations, which were successful in some areas with healthier populations of people.

In the 1990s, a new form of managed care was developed by **utilization review firms** or **managed care organizations** to control the expenditure of insurance funds by requiring providers to seek approval before the delivery of care. **Case management**, or management of care on a case-by-case basis, represented an effort to provide necessary services while containing cost. The client is assigned to a case manager, a person who coordinates all types of care needed by the client. In theory, this approach is designed to decrease fragmented care from a variety of sources, eliminate unneeded overlap of services, provide care in the least restrictive environment, and decrease costs for the insurers. In reality, expenditures are often reduced by withholding services deemed unnecessary or by substituting less expensive treatment alternatives for more expensive care, such as hospital admission.

Psychiatric care is costly because of the long-term nature of the disorders. A relatively short, single hospital stay can cost $20,000 to $30,000. Also, there are fewer objective measures of health or illness. For example, when a person is suicidal, the clinician must rely on the person's report of suicidality; no laboratory tests or other diagnostic studies can identify suicidal ideas. Mental health care is

separated from physical health care in terms of insurance coverage; there are often specific dollar limits or permitted numbers of hospital days in a calendar year. When private insurance limits are met, public funds through the state are used to provide care. As states experience economic difficulties, the availability of state funds for mental health care decreases as well.

Mental health care is managed through privately owned behavioral health care firms that often provide the services and manage their costs. Persons without private insurance must rely on their counties of residence to provide funding through tax dollars. These services and the money to fund them often lag far behind the need that exists. In addition, many persons with mental illness do not seek care and in fact avoid treatment. These persons are often homeless or in jail. Two of the greatest challenges for the future are to provide effective treatment to all who need it and to find the resources to pay for this care.

The Health Care Finance Administration administers two insurance programs: Medicare and Medicaid. Medicare covers people 65 years and older, people with permanent kidney failure, and people with certain disabilities. Medicaid is jointly funded by the federal and state governments and covers low-income individuals and families. Medicaid varies depending on the state; each state determines eligibility requirements, scope of services, and rate of payment for services. Medicaid covers people receiving either SSI or SSDI until they reach 65 years of age, though people receiving SSDI are not eligible for 24 months. SSI recipients, however, are eligible immediately. Unfortunately, not all people who are disabled apply for disability benefits and not all people who apply are approved. Thus, many people with severe and persistent mental illness have no benefits at all.

Another funding issue is mental health parity, or equality, in insurance coverage provided for both physical and mental illnesses. In the past, insurers had spending caps for mental illness and substance abuse treatment. Some policies placed an annual dollar limitation for treatment, while others limited the number of days that would be covered annually or in the insured person's lifetime (of the policy). In 1996, the Congress passed the Mental Health Parity Act, which eliminated annual and lifetime dollar amounts for mental health care for companies with more than 50 employees. However, substance abuse was not covered by this law, and companies could still limit the number of days in the hospital or the number of clinic visits per year. Thus, parity did not really exist. Also, mental health parity is only required if mental health is covered, so some insurers choose not to offer any mental health coverage, thus eliminating the need for parity. Insurance is governed by the laws of each state; thus, some states have full parity, while others have "limited" parity for mental health coverage and still others have no parity laws on the books (National Alliance for the Mentally Ill, 2018).

CULTURAL CONSIDERATIONS

The U.S. Census Bureau (2010) reports that increasing numbers of the U.S. residents trace their ancestry to African, Asian, Arab, or Hispanic origins. Nurses must be prepared to care for this culturally diverse population; preparation includes being aware of cultural differences that influence mental health and the treatment of mental illness. See Chapter 7 for a discussion on cultural differences.

Diversity is not limited to culture; the structure of families has changed as well. With a divorce rate of 50% in the United States, single parents head many families, and many blended families are created when divorced persons remarry. Twenty-five percent of households consist of a single person (U.S. Census Bureau, 2010), and many people live together without being married. Gay men and lesbians form partnerships can marry in some states and sometimes adopt children. As the 2020 Census approaches, many expect there to be an increase in diversity in the U.S. households. The face of the family in the United States is varied, providing a challenge to nurses to provide sensitive, competent care.

PSYCHIATRIC NURSING PRACTICE

In 1873, Linda Richards graduated from the New England Hospital for Women and Children in Boston. She went on to improve nursing care in psychiatric hospitals and organized educational programs in state mental hospitals in Illinois. Richards is called the first American psychiatric nurse; she believed that "the mentally sick should be at least as well cared for as the physically sick" (Doona, 1984).

The first training of nurses to work with persons with mental illness was in 1882 at McLean Hospital in Belmont, Massachusetts. The care was primarily custodial and focused on nutrition, hygiene, and activity. Nurses adapted medical–surgical principles to the care of clients with psychiatric disorders and treated them with tolerance and kindness. The role of psychiatric nurses expanded as somatic therapies for the treatment of mental disorders were developed. Treatments, such as insulin shock therapy (1935), psychosurgery (1936), and electroconvulsive therapy (1937), required nurses to use their medical–surgical skills more extensively.

The first psychiatric nursing textbook, *Nursing Mental Diseases* by Harriet Bailey, was published in 1920. In 1913, Johns Hopkins was the first school of nursing to include a course in psychiatric nursing in its curriculum. It was not until 1950 that the National League for Nursing, that accredits nursing programs, required schools to include an experience in psychiatric nursing.

Two early nursing theorists shaped psychiatric nursing practice: Hildegard Peplau and June Mellow. Peplau published *Interpersonal Relations in Nursing* in 1952 and *Interpersonal Techniques: The Crux of Psychiatric Nursing*

in 1962. She described the therapeutic nurse–client relationship with its phases and tasks and wrote extensively about anxiety (see Chapter 14). The interpersonal dimension that was crucial to her beliefs forms the foundations of practice today.

Mellow's 1968 work, *Nursing Therapy*, described her approach of focusing on clients' psychosocial needs and strengths. Mellow (1986) contended that the nurse as a therapist is particularly suited to working with those with severe mental illness in the context of daily activities, focusing on the here and now to meet each person's psychosocial needs. Both Peplau and Mellow substantially contributed to the practice of psychiatric nursing.

BOX 1.2 Psychiatric–Mental Health Nursing Phenomena of Concern

Phenomena of concern for psychiatric–mental health nurses include

- Promotion of optimal mental and physical health and well-being and prevention of mental illness
- Impaired ability to function related to psychiatric, emotional, and physiologic distress
- Alterations in thinking, perceiving, and communicating because of psychiatric disorders or mental health problems
- Behaviors and mental states that indicate potential danger to self or others
- Emotional stress related to illness, pain, disability, and loss
- Symptom management, side effects, or toxicities associated with self-administered drugs, psychopharmacologic intervention, and other treatment modalities
- The barriers to treatment efficacy and recovery posed by alcohol and substance abuse and dependence
- Self-concept and body image changes, developmental issues, life process changes, and end-of-life issues
- Physical symptoms that occur along with altered psychological status
- Psychological symptoms that occur along with altered physiologic status
- Interpersonal, organizational, sociocultural, spiritual, or environmental circumstances or events that have an effect on the mental and emotional well-being of the individual and family or community
- Elements of recovery, including the ability to maintain housing, employment, and social support, that help individuals reengage in seeking meaningful lives
- Societal factors such as violence, poverty, and substance abuse

The American Nurses Association (ANA) develops standards of care, which are revised as needed. **Standards of care** are authoritative statements by professional organizations that describe the responsibilities for which nurses are accountable. They are not legally binding unless they are incorporated into the state nurse practice act or state board rules and regulations. When legal problems or lawsuits arise, these professional standards are used to determine safe and acceptable practice and to assess the quality of care. The standards form the basis for specialty areas to write standards for practice.

The American Psychiatric Nurses Association (APNA) has standards of practice and standards of professional performance. These also outline the areas of practice and phenomena of concern for today's psychiatric–mental health nurse. The **phenomena of concern** describe the 13 areas of concern that mental health nurses focus on when caring for clients (Box 1.2). The standards of care incorporate the phases of the nursing process, including specific types of interventions for nurses in psychiatric settings. They also outline standards for professional performance, quality of care, performance appraisal, education, collegiality, ethics, collaboration, research, and resource utilization (ANA & APNA, 2014). Box 1.3 summarizes specific areas of practice and specific interventions for both basic and advanced nursing practice.

STUDENT CONCERNS

Student nurses beginning their clinical experience in psychiatric–mental health nursing usually find the discipline to be different from any previous experience. As a result, they often have a variety of concerns; these concerns are normal and usually do not persist once the students have initial contacts with clients.

Some common concerns and helpful hints for beginning students follow:

- *What if I say the wrong thing?*
  No one magic phrase can solve a client's problems; likewise, no single statement can significantly worsen them. Listening carefully, showing genuine interest, and caring about the client are extremely important. A nurse who possesses these elements but says something that sounds out of place can simply restate it by saying, "That didn't come out right. What I meant was..."
- *What will I be doing?*
  In the mental health setting, many familiar tasks and responsibilities are minimal. Physical care skills or diagnostic tests and procedures are fewer than those conducted in a busy medical–surgical setting. The idea of "just talking to people" may make the student feel as though he or she is not really doing anything. The student must deal with his or her own anxiety about approaching a stranger to talk about sensitive and

BOX 1.3 Areas of Practice

Basic-Level Functions

- Counseling
  - Interventions and communication techniques
  - Problem-solving
  - Crisis intervention
  - Stress management
  - Behavior modification
- Milieu therapy
  - Maintain therapeutic environment
  - Teach skills
  - Encourage communication between clients and others
  - Promote growth through role modeling
- Self-care activities
  - Encourage independence
  - Increase self-esteem
  - Improve function and health
- Psychobiologic interventions
  - Administer medications
  - Teach
  - Observe
- Health teaching
- Case management
- Health promotion and maintenance

Advanced-Level Functions

- Psychotherapy
- Prescriptive authority for drugs (in many states)
- Consultation and liaison
- Evaluation
- Program development and management
- Clinical supervision

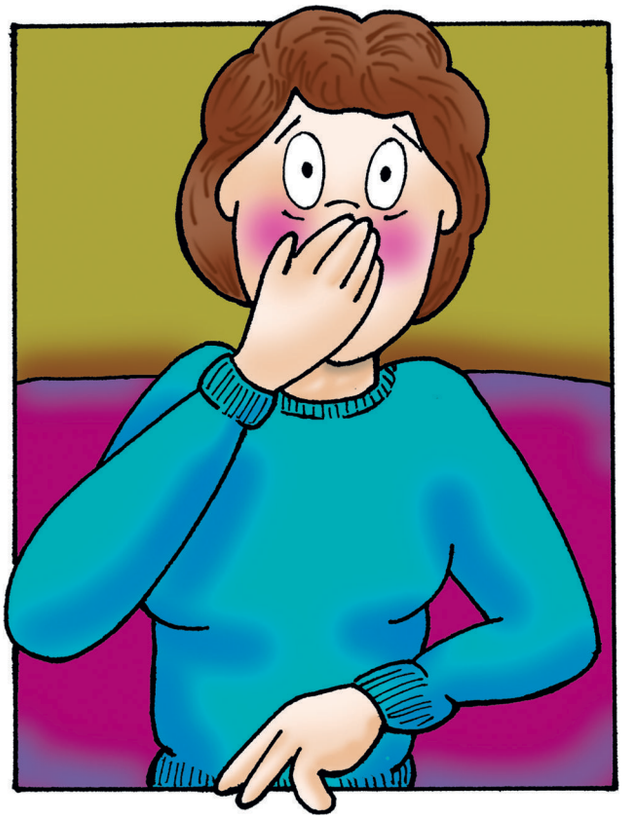
personal issues. Development of the therapeutic nurse–client relationship and trust takes time and patience.

- *What if no one will talk to me?*
  Students sometimes fear that clients will reject them or refuse to have anything to do with student nurses. Some clients may not want to talk or are reclusive, but they may show that same behavior with experienced staff; students should not see such behavior as a personal insult or failure. Generally, many people in emotional distress welcome the opportunity to have someone listen to them and show a genuine interest in their situation. Being available and willing to listen is often all it takes to begin a significant interaction with someone.
- *Am I prying when I ask personal questions?*
  Students often feel awkward as they imagine themselves discussing personal or distressing issues with a client. It is important to remember that questions involving personal matters should not be the first thing a student says to the client. These issues usually arise after some trust and rapport have been established. In addition, clients genuinely are distressed about their situations and often want help resolving issues by talking to the nurse. When these emotional or personal issues are addressed in the context of the nurse–client relationship, asking sincere and necessary questions is not prying but is using therapeutic communication skills to help the client.
- *How will I handle bizarre or inappropriate behavior?*
  The behavior and statements of some clients may be shocking or distressing to the student initially. It is important to monitor one's facial expressions and emotional responses so that clients do not feel rejected or ridiculed. The nursing instructor and staff are always available to assist the student in such situations. Students should never feel as if they will have to handle situations alone.
- *What happens if a client asks me for a date or displays sexually aggressive or inappropriate behavior?*
  Some clients have difficulty recognizing or maintaining interpersonal boundaries. When a client seeks contact of any type outside the nurse–client relationship, it is important for the student (with the assistance of the instructor or staff) to clarify the boundaries of the professional relationship (see Chapter 5). Likewise, setting limits and maintaining boundaries are needed when a client's behavior is sexually inappropriate. Initially, the student might be uncomfortable dealing with such behavior, but with practice and the assistance of the instructor and staff, it becomes easier to manage. It is also important to protect the client's privacy and dignity when he or she cannot do so.
- *Is my physical safety in jeopardy?*
  Often students have had little or no contact with seriously mentally ill people. Media coverage of those with mental illness who commit crimes is widespread, leaving the impression that most clients with psychiatric disorders are violent. Actually, clients hurt themselves more often than they harm others. Staff members usually closely monitor clients with a potential for violence for clues of an impending outburst. When physical aggression does occur, staff members are specially trained to handle aggressive clients in a safe manner. The student should not become involved in the physical restraint of an aggressive client because he or she has not had the training and experience required. When talking to or approaching clients who are potentially aggressive, the student should sit in an open area rather than in a closed room, provide plenty of space for the client, or request that the instructor or a staff person be present.
- *What if I encounter someone I know being treated on the unit?*

In any clinical setting, it is possible that a student nurse might see someone he or she knows. People often have additional fears because of the stigma that is still associated with seeking mental health treatment. It is essential in mental health that the client's identity and treatment be kept confidential. If the student recognizes someone he or she knows, the student should notify the instructor, who can decide how to handle the situation. It is usually best for the student (and sometimes the instructor or staff) to talk with the client and reassure him or her about confidentiality. The client should be reassured that the student will not read the client's record and will not be assigned to work with the client.

- *What if I recognize that I share similar problems or backgrounds with clients?*

Students may discover that some of the problems, family dynamics, or life events of clients are similar to their own or those of their family. It can be a shock for students to discover that sometimes there are as many similarities between clients and staff as there are differences. There is no easy answer for this concern. Many people have stressful lives or abusive childhood experiences; some cope fairly successfully, while others are devastated emotionally. Although we know that coping skills are a key part of mental health, we do not always know why some people have serious emotional problems and others do not. Chapter 7 discusses these factors in more detail.



"What if I say the wrong thing?"

BEST PRACTICE: Reduction of Boarding and/or Need for Hospitalization

The Alameda Model was developed in Alameda County, California, to deal with the growing problem of boarding psychiatric patients in a general ED setting. Typically, boarding occurs while the patient is waiting for an inpatient bed to be located or become available or the patient needs help resolving a crisis. Patients coming to a general ED are immediately transferred to a designated emergency psychiatric facility as soon as they are medically stable. In a 30-day period, only 22% of the patients needed hospitalization; the other 78% went home or to an alternative situation in the community. ED boarding times were reduced by 80% compared with average boarding time.

The next step is the adoption of a similar model by other hospital EDs. The positive results of lower readmission rates, less wait time for services, and provision of needed care, as well as the financial savings, address major problem areas that exist in mental health care today.

Intriguing model significantly reduces boarding of psychiatric patients, need for inpatient hospitalization. (2015). ED Management, 27(1), 1–5.

SELF-AWARENESS ISSUES

Self-awareness is the process by which the nurse gains recognition of his or her own feelings, beliefs, and attitudes. In nursing, being aware of one's feelings, thoughts, and values is a primary focus. Self-awareness is particularly important in mental health nursing. Everyone, including nurses and student nurses, has values, ideas, and beliefs that are unique and different from those of others. At times, a nurse's values and beliefs will conflict with those of the client or with the client's behavior. The nurse must learn to accept these differences among people and view each client as a worthwhile person regardless of that client's opinions and lifestyle. The nurse does not need to condone the client's views and behavior; he or she merely needs to accept them as different from his or her own and not let them interfere with care.

For example, a nurse who believes abortion is wrong may be assigned to care for a client who has had an abortion. If the nurse is going to help the client, he or she must be able to separate his or her own beliefs about abortion from those of the client. The nurse must make sure that personal feelings and beliefs do not interfere with or hinder the client's care.

The nurse can accomplish self-awareness through reflection, spending time consciously focusing on how one feels

and what one values or believes. Although we all have values and beliefs, we may not have really spent time discovering how we feel or what we believe about certain issues, such as suicide or a client's refusal to take needed medications. The nurse needs to discover him or herself and what he or she believes before trying to help others with different views.

Points to Consider When Working on Self-Awareness

- Keep a diary or journal that focuses on experiences and related feelings. Work on identifying feelings and the circumstances from which they arise. Review the diary or journal periodically to look for patterns or changes.
- Talk with someone you trust about your experiences and feelings. This might be a family member, friend, coworker, or nursing instructor. Discuss how he or she might feel in a similar situation or ask how he or she deals with uncomfortable situations or feelings.
- Engage in formal clinical supervision. Even experienced clinicians have a supervisor with whom they discuss personal feelings and challenging client situations to gain insight and new approaches.
- Seek alternative points of view. Put yourself in the client's situation and think about his or her feelings, thoughts, and actions.
- Do not be critical of yourself (or others) for having certain values or beliefs. Accept them as a part of yourself, or work to change those values and beliefs you wish to be different.

CRITICAL THINKING QUESTIONS

1. In your own words, describe mental health. Describe the characteristics, behaviors, and abilities of someone who is mentally healthy.
2. When you think of mental illness, what images or ideas come to mind? Where do these ideas come from—movies, television, personal experience?
3. What personal characteristics do you have that indicate good mental health?

KEY POINTS

- Mental health and mental illness are difficult to define and are influenced by one's culture and society.
- The World Health Organization defines health as a state of complete physical, mental, and social wellness, not merely the absence of disease or infirmity.
- Mental health is influenced by individual factors, including biologic makeup, autonomy and independence, self-esteem, capacity for growth, vitality, ability to find meaning in life, resilience or hardiness, sense of belonging, reality orientation, and coping or stress management abilities; by interpersonal factors, including effective communication, helping others, intimacy, and maintaining a balance of separateness and connectedness; and by social/cultural factors, including sense of community, access to resources, intolerance of violence, support of diversity among people, mastery of the environment, and a positive yet realistic view of the world.
- Historically, mental illness was viewed as demonic possession, sin, or weakness, and people were punished accordingly.
- Today, mental illness is seen as a medical problem with symptoms causing dissatisfaction with one's characteristics, abilities, and accomplishments; ineffective or unsatisfying interpersonal relationships; dissatisfaction with one's place in the world; ineffective coping with life events; and lack of personal growth.
- Factors contributing to mental illness are biologic makeup; anxiety, worries, and fears; ineffective communication; excessive dependence or withdrawal from relationships; loss of emotional control; lack of resources; and violence, homelessness, poverty, and discrimination.
- The *DSM-5* is a taxonomy used to provide a standard nomenclature of mental disorders, define characteristics of disorders, and assist in identifying underlying causes of disorders.
- A significant advance in treating persons with mental illness was the development of psychotropic drugs in the early 1950s.
- The shift from institutional care to care in the community began in the 1960s, allowing many people to leave institutions for the first time in years.
- One result of deinstitutionalization is the revolving door of repetitive hospital admission without adequate community follow-up.
- It is estimated that one-third of the homeless population have a mental illness and one-half have substance abuse problems.
- Treatment rates for children and adults are 68% and 57%, respectively, but only 37% for homeless individuals and 3% for persons with a dual diagnosis of mental illness and substance abuse.
- Community-based programs are the trend of the future, but they are underfunded and too few in number.
- Managed care, in an effort to contain costs, has resulted in withholding of services or approval of less expensive alternatives for mental health care.
- The population in the United States is becoming increasingly diverse in terms of culture, race, ethnicity, and family structure.
- Psychiatric nursing was recognized in the late 1800s, though it was not required in nursing education programs until 1950.
- Psychiatric nursing practice has been profoundly influenced by Hildegard Peplau and June Mellow,

who wrote about the nurse–client relationship, anxiety, nurse therapy, and interpersonal nursing theory.

- The ANA has published standards of care that guide psychiatric–mental health nursing clinical practice.
- Common concerns of nursing students beginning a psychiatric clinical rotation include fear of saying the wrong thing, not knowing what to do, being rejected by clients, being physically threatened, recognizing someone they know as a client, and sharing similar problems or backgrounds with clients.
- Awareness of one's feelings, beliefs, attitudes, values, and thoughts, called self-awareness, is essential to the practice of psychiatric nursing.
- The goal of self-awareness is to know oneself so that one's values, attitudes, and beliefs are not projected to the client, interfering with nursing care. Self-awareness does not mean having to change one's values or beliefs, unless one desires to do so.

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Chapter Study Guide

MULTIPLE CHOICE QUESTIONS

Select the best answer for each.

1. The primary purpose of the Community Mental Health Center Act of 1963 was to
   a. get better treatment in larger, more urban areas.
   b. move patients to their home communities for treatment.
   c. provide former patients with employment opportunities.
   d. remove the stigma of living in an institution.
2. Managed care is designed to
   a. control health care costs by limiting access to care.
   b. keep health care costs from increasing over time.
   c. limit the amount of money paid to physicians and hospitals.
   d. maintain a balance between the quality and costs of health care.
3. Hospitals established by Dorothea Dix were designed to provide
   a. asylum.
   b. confinement.
   c. therapeutic milieu.
   d. public safety.
4. Hildegard Peplau is best known for her writing about
   a. community-based care.
   b. humane treatment.
   c. psychopharmacology.
   d. therapeutic nurse–client relationship.
5. Mental health parity laws ensure
   a. better quality mental health treatment.
   b. equality in insurance coverage for mental illness.
   c. mental health treatment without stigma.
   d. that persons receiving treatment really need it.

FILL-IN-THE-BLANK QUESTIONS

Identify the person associated with the following.

1. _____
   first American psychiatric nurse
2. _____
   moral treatment of the mentally ill
3. _____
   therapeutic nurse–client relationship
4. _____
   asylum as a safe refuge
5. _____
   classification of mental disorders according to symptoms

SHORT ANSWER QUESTIONS

1. Discuss ideas for increasing the number of people receiving treatment for mental illness.

2. Discuss three trends of mental health care in the United States.

3. Provide three different concerns nursing students might have as they begin psychiatric nursing clinical experiences.

CHAPTER 2

Neurobiologic Theories and Psychopharmacology

KEY TERMS

- akathisia
- anticholinergic side effects
- antidepressant drugs
- antipsychotic drugs
- anxiolytic drugs
- black box warning
- computed tomography (CT)
- depot injection
- dopamine
- dystonia
- efficacy
- epinephrine
- extrapyramidal symptoms (EPSs)
- half-life
- kindling process
- limbic system
- magnetic resonance imaging (MRI)
- mood-stabilizing drugs
- neuroleptic malignant syndrome (NMS)
- neurotransmitters
- norepinephrine
- off-label use
- positron emission tomography (PET)
- postinjection delirium/sedation syndrome
- potency
- pseudoparkinsonism
- psychoimmunology
- psychopharmacology
- rebound
- serotonin
- serotonin syndrome
- single-photon emission computed tomography (SPECT)
- stimulant drugs
- tardive dyskinesia (TD)
- withdrawal

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

1. Discuss the structures, processes, and functions of the brain.
2. Identify pertinent teaching for clients and families about brain imaging techniques.
3. Describe the current neurobiologic research and theories that are the basis for current psychopharmacologic treatment of mental disorders.
4. Discuss the nurse's role in educating clients and families about current neurobiologic theories and medication management.
5. Discuss the categories of drugs used to treat mental illness and their mechanisms of action, side effects, and special nursing considerations.
6. Identify client responses that indicate treatment effectiveness.
7. Discuss common barriers to maintaining the medication regimen.
8. Develop a teaching plan for clients and families for implementation of the prescribed therapeutic regimen.

INTRODUCTION

Although much remains unknown about what causes mental illness, science in the past 30 years has made great strides in helping us understand how the brain works and in presenting possible causes of why some brains work differently from others. Such advances in neurobiologic research are continually expanding the knowledge base in the field of psychiatry and are greatly influencing clinical practice. The psychiatric–mental health nurse must have a basic understanding of how the brain functions and of the current theories regarding mental illness. This chapter includes an overview of the major anatomic structures of the nervous system and how they work—the neurotransmission process. It presents the major current neurobiologic theories regarding what causes

mental illness, including genetics and heredity, stress and the immune system, and infectious agents.

The use of medications to treat mental illness (**psychopharmacology**) is related to these neurobiologic theories. These medications directly affect the central nervous system (CNS) and subsequently behavior, perceptions, thinking, and emotions. This chapter discusses five categories of drugs used to treat mental illness, including their mechanisms of action, their side effects, and the roles of the nurses in administration and client teaching. Although pharmacologic interventions are the most effective treatment for many psychiatric disorders, adjunctive therapies, such as cognitive and behavioral therapies, family therapy, and psychotherapy, can greatly enhance the success of treatment and the client's outcome. Chapter 3 discusses these psychosocial modalities.

THE NERVOUS SYSTEM AND HOW IT WORKS

Central Nervous System

The CNS comprises the brain, the spinal cord, and associated nerves that control voluntary acts. Structurally, the brain consists of the cerebrum, cerebellum, brain stem, and limbic system. Figures 2.1 and 2.2 show the locations of brain structures.

Cerebrum

The cerebrum is divided into two hemispheres; all lobes and structures are found in both halves except for the pineal body, or gland, which is located between the hemispheres. The pineal body is an endocrine gland that influences the activities of the pituitary gland, islets of Langerhans,

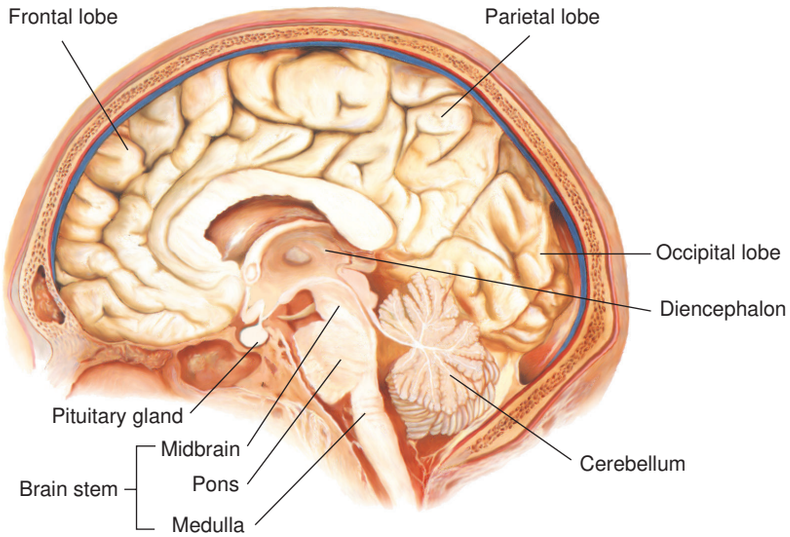


FIGURE 2.1. Anatomy of the brain.

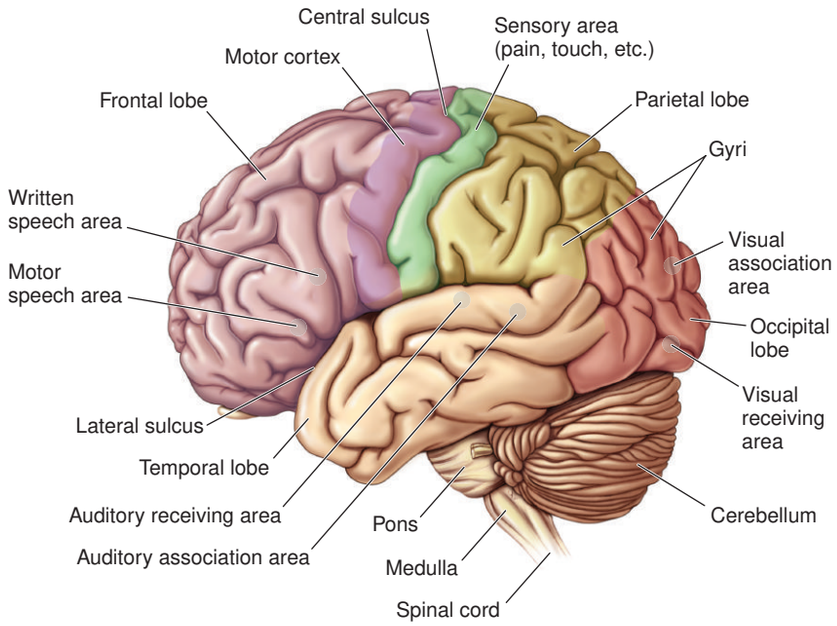


FIGURE 2.2. The brain and its structures.

parathyroids, adrenals, and gonads. The corpus callosum is a pathway connecting the two hemispheres and coordinating their functions. The left hemisphere controls the right side of the body and is the center for logical reasoning and analytic functions such as reading, writing, and mathematical tasks. The right hemisphere controls the left side of the body and is the center for creative thinking, intuition, and artistic abilities.

The cerebral hemispheres are divided into four lobes: frontal, parietal, temporal, and occipital. Some functions of the lobes are distinct; others are integrated. The frontal lobes control the organization of thought, body movement, memories, emotions, and moral behavior. The integration of all this information regulates arousal, focuses attention, and enables problem-solving and decision-making. Abnormalities in the frontal lobes are associated with schizophrenia, attention-deficit/hyperactivity disorder (ADHD), and dementia. The parietal lobes interpret sensations of taste and touch and assist in spatial orientation. The temporal lobes are centers for the senses of smell and hearing and for memory and emotional expression. The occipital lobes assist in coordinating language generation and visual interpretation, such as depth perception.

Cerebellum

The cerebellum is located below the cerebrum and is the center for coordination of movements and postural adjustments. It receives and integrates information from all areas of the body, such as the muscles, joints, organs, and other components of the CNS. Research has shown that inhibited transmission of dopamine, a neurotransmitter, in this area is associated with the lack of smooth coordinated movements in diseases such as Parkinson disease and dementia.

Brain Stem

The brain stem includes the midbrain, pons, and medulla oblongata and the nuclei for cranial nerves III through XII. The medulla, located at the top of the spinal cord, contains vital centers for respiration and cardiovascular functions. Above the medulla and in front of the cerebrum, the pons bridges the gap both structurally and functionally, serving as a primary motor pathway. The midbrain connects the pons and cerebellum with the cerebrum. It measures only 0.8 in (2 cm) length and includes most of the reticular activating system and the extrapyramidal system. The reticular activating system influences motor activity, sleep, consciousness, and awareness. The extrapyramidal system relays information about movement and coordination from the brain to the spinal nerves. The locus coeruleus, a small group of norepinephrine-producing neurons in the brain stem, is associated with stress, anxiety, and impulsive behavior.

Limbic System

The **limbic system** is an area of the brain located above the brain stem that includes the thalamus, hypothalamus, hippocampus, and amygdala (although some sources differ regarding the structures this system includes). The thalamus regulates activity, sensation, and emotion. The hypothalamus is involved in temperature regulation, appetite control, endocrine function, sexual drive, and impulsive behavior associated with feelings of anger, rage, or excitement. The hippocampus and amygdala are involved in emotional arousal and memory. Disturbances in the limbic system have been implicated in a variety of mental illnesses, such as the memory loss that accompanies dementia and the poorly controlled emotions and impulses seen with psychotic or manic behavior.

Neurotransmitters

Approximately 100 billion brain cells form groups of neurons, or nerve cells, that are arranged in networks. These neurons communicate information with one another by sending electrochemical messages from neuron to neuron, a process called *neurotransmission*. These electrochemical messages pass from the dendrites (projections from the cell body), through the soma or cell body, down the axon (long extended structures), and across the synapses (gaps between cells) to the dendrites of the next neuron. In the nervous system, the electrochemical messages cross the synapses between neural cells by way of special chemical messengers called neurotransmitters.

Neurotransmitters are the chemical substances manufactured in the neuron that aid in the transmission of information throughout the body. They either excite or stimulate an action in the cells (excitatory) or inhibit or stop an action (inhibitory). These neurotransmitters fit into specific receptor cells embedded in the membrane of the dendrite, just like a certain key shape fits into a lock. After neurotransmitters are released into the synapse and relay the message to the receptor cells, they are either transported back from the synapse to the axon to be stored for later use (reuptake) or metabolized and inactivated by enzymes, primarily monoamine oxidase (MAO) (Fig. 2.3).

These neurotransmitters are necessary in just the right proportions to relay messages across the synapses. Studies are beginning to show differences in the amount of some neurotransmitters available in the brains of people with certain mental disorders compared with those who have no signs of mental illness (Fig. 2.4).

Concept Mastery Alert

Neurotransmission

Neurotransmitters fit into specific receptor cells embedded in the membrane of the dendrite, similar to a lock-and-key mechanism. After neurotransmitters are released into the synapse and relay the message to the receptor cells, they are either transported back from the synapse to the axon to be stored for later use (reuptake) or metabolized and inactivated by enzymes, primarily monoamine oxidase (MAO).

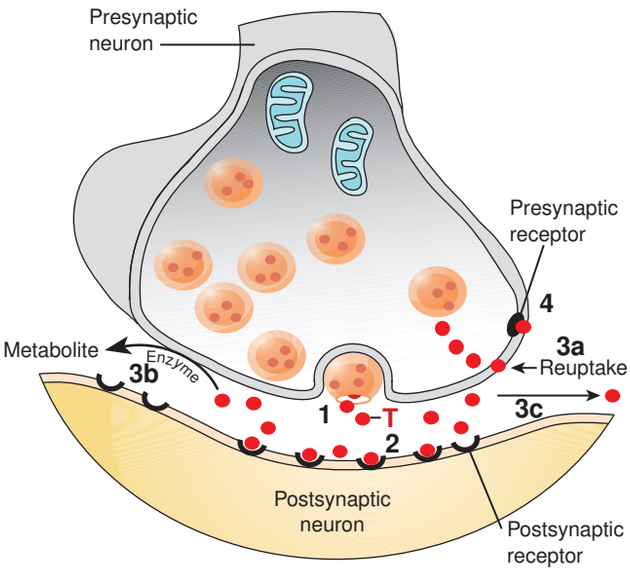


FIGURE 2.3. Schematic illustration of (*1*) neurotransmitter (*T*) release; (*2*) binding of transmitter to postsynaptic receptor; termination of transmitter action by (*3a*) reuptake of transmitter into the presynaptic terminal, (*3b*) enzymatic degradation, or (*3c*) diffusion away from the synapse; and (*4*) binding of transmitter to presynaptic receptors for feedback regulation of transmitter release.

Major neurotransmitters have been found to play a role in psychiatric illnesses as well as in the actions and side effects of psychotropic drugs. Table 2.1 lists the major neurotransmitters and their actions and effects. Dopamine and serotonin have received the most attention in terms of the study and treatment of psychiatric disorders. The following sections discuss the major neurotransmitters associated with mental disorders.

Dopamine

Dopamine, a neurotransmitter located primarily in the brain stem, has been found to be involved in the control of complex movements, motivation, cognition, and regulation of emotional responses. It is generally excitatory and is synthesized from tyrosine, a dietary amino acid. Dopamine is implicated in schizophrenia and other psychoses as well as in movement disorders such as Parkinson disease. Antipsychotic medications work by blocking dopamine receptors and reducing dopamine activity.

Norepinephrine and Epinephrine

Norepinephrine, the most prevalent neurotransmitter in the nervous system, is located primarily in the brain stem and plays a role in changes in attention, learning and memory, sleep and wakefulness, and mood regulation. Norepinephrine and its derivative, **epinephrine**, are also known as noradrenaline and adrenaline, respectively. Excess norepinephrine has been implicated in several anxiety disorders; deficits may contribute to memory loss, social withdrawal, and depression. Some antidepressants block the reuptake of norepinephrine, while others inhibit MAO from metabolizing it. Epinephrine has limited distribution in the brain but controls the fight or flight response in the peripheral nervous system.

Serotonin

Serotonin is derived from tryptophan, a dietary amino acid. The function of serotonin is mostly inhibitory, and it is involved in the control of food intake, sleep and wakefulness, temperature regulation, pain control, sexual behavior, and

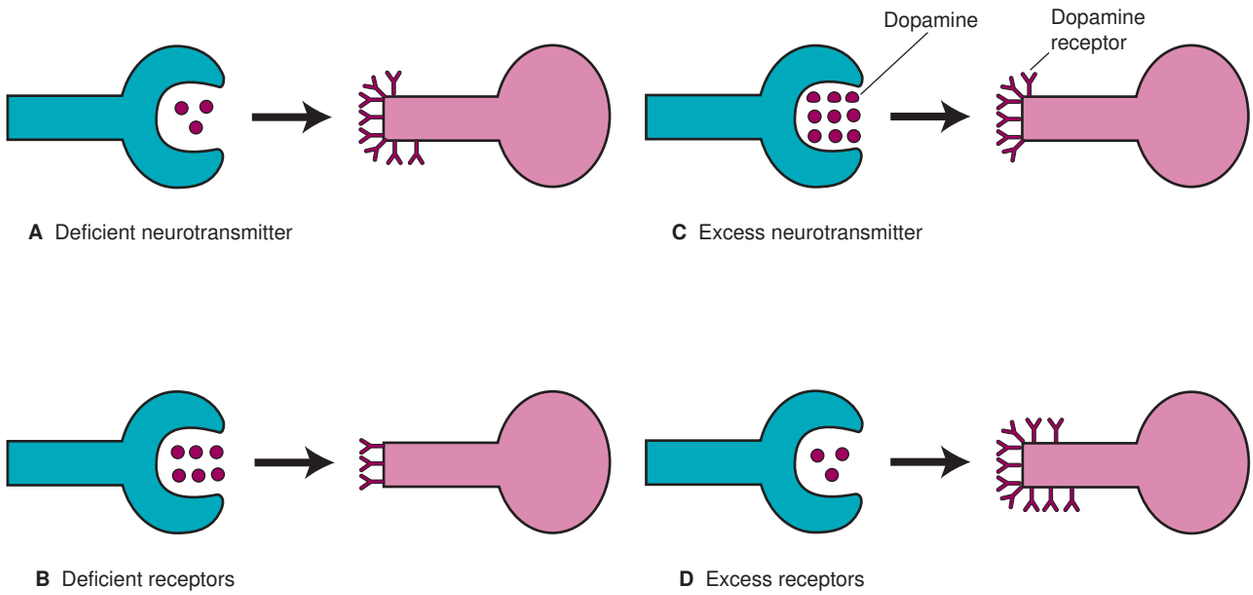


FIGURE 2.4. Abnormal neurotransmission causing some mental disorders because of excess transmission or excess responsiveness of receptors.

TABLE 2.1 Major Neurotransmitters

Type	Mechanism of Action	Physiologic Effects
Dopamine	Excitatory	Controls complex movements, motivation, cognition; regulates emotional response
Norepinephrine (noradrenaline)	Excitatory	Causes changes in attention, learning and memory, sleep and wakefulness, mood
Epinephrine (adrenaline)	Excitatory	Controls fight or flight response
Serotonin	Inhibitory	Controls food intake, sleep and wakefulness, temperature regulation, pain control, sexual behaviors, regulation of emotions
Histamine	Neuromodulator	Controls alertness, gastric secretions, cardiac stimulation, peripheral allergic responses
Acetylcholine	Excitatory or inhibitory	Controls sleep and wakefulness cycle; signals muscles to become alert
Neuropeptides	Neuromodulators	Enhance, prolong, inhibit, or limit the effects of principal neurotransmitters
Glutamate	Excitatory	Results in neurotoxicity if levels are too high
γ-Aminobutyric acid	Inhibitory	Modulates other neurotransmitters

regulation of emotions. Serotonin plays an important role in anxiety, mood disorders, and schizophrenia. It has been found to contribute to the delusions, hallucinations, and withdrawn behavior seen in schizophrenia. Some antidepressants block serotonin reuptake, thus leaving it available longer in the synapse, which results in improved mood.

Histamine

The role of histamine in mental illness is under investigation. It is involved in peripheral allergic responses, control of gastric secretions, cardiac stimulation, and alertness. Some psychotropic drugs block histamine, resulting in weight gain, sedation, and hypotension.

Acetylcholine

Acetylcholine is a neurotransmitter found in the brain, spinal cord, and peripheral nervous system, particularly at the neuromuscular junction of skeletal muscle. It can be excitatory or inhibitory. It is synthesized from dietary choline found in red meat and vegetables and has been found to affect the sleep–wake cycle and to signal muscles to become active. Studies have shown that people with Alzheimer disease have decreased acetylcholine-secreting neurons, and people with myasthenia gravis (a muscular disorder in which impulses fail to pass the myoneural junction, which causes muscle weakness) have reduced acetylcholine receptors.

Glutamate

Glutamate is an excitatory amino acid that can have major neurotoxic effects at high levels. It has been implicated in the brain damage caused by stroke, hypoglycemia, sustained hypoxia or ischemia, and some degenerative diseases such as Huntington or Alzheimer.

Gamma-Aminobutyric Acid

Gamma-aminobutyric acid (γ-aminobutyric acid, or GABA), an amino acid, is the major inhibitory neurotransmitter in the brain and has been found to modulate other neurotransmitter systems rather than to provide a direct stimulus. Drugs that increase GABA function, such as benzodiazepines, are used to treat anxiety and to induce sleep.

BRAIN IMAGING TECHNIQUES

At one time, the brain could be studied only through surgery or autopsy. During the past 25 years, however, several brain imaging techniques have been developed that now allow visualization of the brain's structure and function. These techniques are useful for diagnosing some disorders of the brain and have helped correlate certain areas of the brain with specific functions. Brain imaging techniques are also useful in research to find the causes of mental disorders. Table 2.2 describes and compares several of these diagnostic techniques.

Types of Brain Imaging Techniques

Computed tomography (CT), also called computed axial tomography, is a procedure in which a precise x-ray beam takes cross-sectional images (slices) layer by layer. A computer reconstructs the images on a monitor and also stores the images on magnetic tape or film. CT can visualize the brain's soft tissues, so it is used to diagnose primary tumors, metastases, and effusions and to determine the size of the ventricles of the brain. Some people with schizophrenia have been shown to have enlarged ventricles; this finding is associated with a poorer prognosis and marked negative symptoms (Fig. 2.5; see Chapter 16). The person undergoing CT must lie motionless on a stretcher-like table for about 20 to 40 minutes as the stretcher passes through a tunnel-like "ring" while the serial x-rays are taken.

TABLE 2.2 Brain Imaging Technology

Procedure	Imaging Method	Results	Duration
Computed tomography (CT)	Serial x-rays of brain	Structural image	20–40 minutes
Magnetic resonance imaging (MRI)	Radio waves from brain detected from magnet	Structural image	45 minutes
Positron emission tomography (PET)	Radioactive tracer injected into bloodstream and monitored as client performs activities	Functional	2–3 hours
Single-photon emission computed tomography (SPECT)	Same as PET	Functional	1–2 hours

In **magnetic resonance imaging (MRI)**, a type of body scan, an energy field is created with a huge magnet and radio waves. The energy field is converted to a visual image or scan. MRI produces more tissue detail and contrast than CT and can show blood flow patterns and tissue changes such as edema. It can also be used to measure the size and thickness of brain structures; persons with schizophrenia can have as much as 7% reduction in cortical thickness. The person undergoing an MRI must lie in a small, closed chamber and remain motionless during the procedure, which takes about 45 minutes. Those who feel claustrophobic or have increased anxiety may require sedation before the procedure. Clients with pacemakers or metal implants, such as heart valves or orthopedic devices, cannot undergo MRI.

More advanced imaging techniques, such as **positron emission tomography (PET)** and **single-photon emission computed tomography (SPECT)**, are used to examine the function of the brain. Radioactive substances are injected into the blood; the flow of those substances in the brain is monitored as the client performs cognitive activities as instructed by the operator. PET uses two photons simultaneously; SPECT uses a single photon. PET provides better resolution with sharper and clearer pictures and takes about 2 to 3 hours; SPECT takes 1 to 2 hours. PET and SPECT are used primarily for research, not for the diagnosis and treatment of clients with mental disorders (Gur & Gur, 2017) (Fig. 2.6). A recent breakthrough is the use of the chemical marker FDDNP with PET to identify the amyloid plaques and tangles of Alzheimer disease in living clients; these conditions previously could be diagnosed only through autopsy. These scans have shown that clients with Alzheimer disease have decreased glucose metabolism in the brain and decreased cerebral blood flow. Some persons with schizophrenia also demonstrate decreased cerebral blood flow.

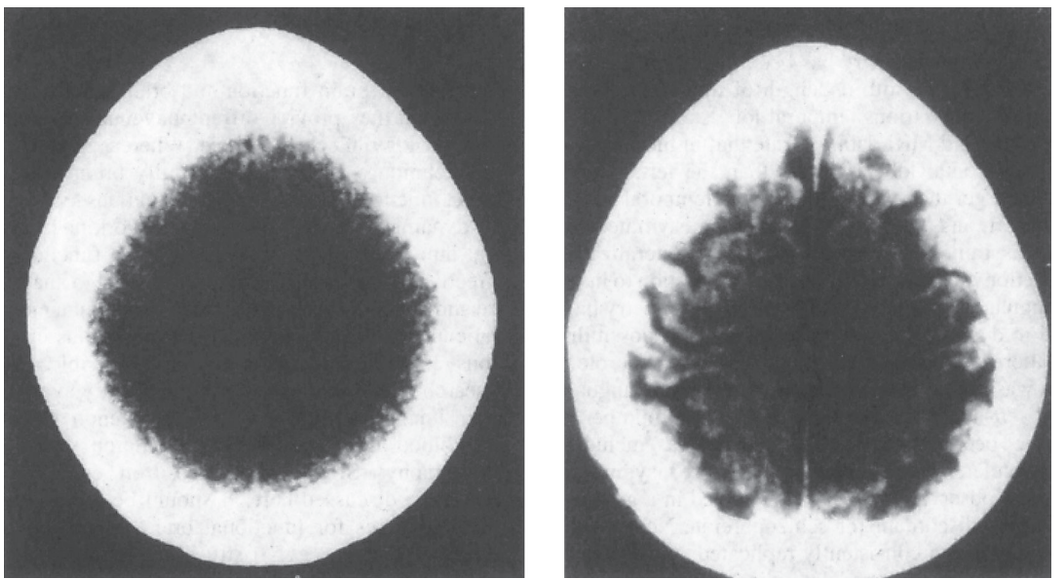


FIGURE 2.5. Example of computed tomography of the brain of a patient with schizophrenia **(right)** compared with a normal control **(left)**.

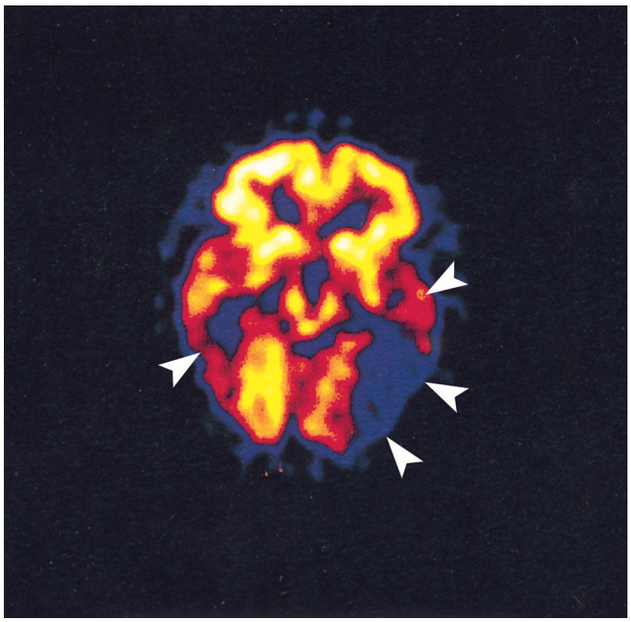


FIGURE 2.6. Example of axial (horizontal) positron emission tomography of a male patient with Alzheimer disease, showing defects (*arrowheads*) in metabolism in the regions of the cerebral cortex of brain.

Limitations of Brain Imaging Techniques

Although imaging techniques such as PET and SPECT have helped bring about tremendous advances in the study of brain diseases, they have some limitations:

- The use of radioactive substances in PET and SPECT limits the number of times a person can undergo these tests. There is the risk that the client will have an allergic reaction to the substances. Some clients may find receiving intravenous doses of radioactive material frightening or unacceptable.
- Imaging equipment is expensive to purchase and maintain, so availability can be limited. A PET camera costs about $2.5 million; a PET scanning facility may take up to $6 million to establish.
- Some persons cannot tolerate these procedures because of fear or claustrophobia.
- Researchers are finding that many of the changes in disorders such as schizophrenia are at the molecular and chemical levels and cannot be detected with current imaging techniques (Gur & Gur, 2017).

NEUROBIOLOGIC CAUSES OF MENTAL ILLNESS

Genetics and Heredity

Unlike many physical illnesses that have been found to be hereditary, such as cystic fibrosis, Huntington disease, and Duchenne muscular dystrophy, the origins of mental disorders do not seem to be simple. Current theories and studies indicate that several mental disorders may be linked to a specific gene or combination of genes but that the source is not solely genetic; nongenetic factors also play important roles.

To date, one of the most promising discoveries is the identification in 2007 of variations in the gene *SORL1* that may be a factor in late-onset Alzheimer disease. Research is continuing in an attempt to find genetic links to other diseases such as schizophrenia and mood disorders. This is the focus of the ongoing research of the National Human Genome Research Institute, funded by the National Institutes of Health and the U.S. Department of Energy. This international research project, started in 1988, is the largest of its kind. It has identified all human DNA and continues with research to discover the human characteristics and diseases to which each gene is related (encoding). In addition, the project also addresses the ethical, legal, and social implications of human genetics research. This program (known as Ethical, Legal, and Social Implications, or ELSI) focuses on privacy and fairness in the use and interpretation of genetic information, clinical integration of new genetic technologies, issues surrounding genetics research, and professional and public education.

Three types of studies are commonly conducted to investigate the genetic basis of mental illness:

1. *Twin studies* are used to compare the rates of certain mental illnesses or traits in monozygotic (identical) twins, who have an identical genetic makeup, and dizygotic (fraternal) twins, who have a different genetic makeup. Fraternal twins have the same genetic similarities and differences as nontwin siblings.
2. *Adoption studies* are used to determine a trait among biologic versus adoptive family members.
3. *Family studies* are used to compare whether a trait is more common among first-degree relatives (parents, siblings, and children) than among more distant relatives or the general population.

Although some genetic links have been found in certain mental disorders, studies have not shown that these illnesses are solely genetically linked. Investigation continues about the influence of inherited traits versus the influence of the environment—the "nature versus nurture" debate. The influence of environmental or psychosocial factors is discussed in Chapter 3.

Stress and the Immune System (Psychoimmunology)

Researchers are following many avenues to discover possible causes of mental illness. **Psychoimmunology**, a relatively new field of study, examines the effect of psychosocial stressors on the body's immune system. A compromised immune system could contribute to the

development of a variety of illnesses, particularly in populations already genetically at risk. So far, efforts to link a specific stressor with a specific disease have been unsuccessful. However, the immune system and the brain can influence neurotransmitters. When the inflammatory response is critically involved in illnesses such as multiple sclerosis or lupus erythematosus, mood dysregulation and even depression are common (Raison & Miller, 2017).

Infection as a Possible Cause

Some researchers are focusing on infection as a cause of mental illness. Most studies involving viral theories have focused on schizophrenia, but so far, none has provided specific or conclusive evidence. Theories that are being developed and tested include the existence of a virus that has an affinity for tissues of the CNS, the possibility that a virus may actually alter human genes, and maternal exposure to a virus during critical fetal development of the nervous system. Prenatal infections may impact the developing brain of the fetus, giving rise to a proposed theory that inflammation may causally contribute to the pathology of schizophrenia (DeBost et al., 2017).

THE NURSE'S ROLE IN RESEARCH AND EDUCATION

Amid all the reports of research in these areas of neurobiology, genetics, and heredity, the implications for clients and their families are still not clear or specific. Often, reports in the media regarding new research and studies are confusing, contradictory, or difficult for clients and their families to understand. The nurse must ensure that clients and families are well informed about progress in these areas and must also help them to distinguish between facts and hypotheses. The nurse can explain if or how new research may affect a client's treatment or prognosis. The nurse is a good resource for providing information and answering questions.

PSYCHOPHARMACOLOGY

Medication management is a crucial issue that greatly influences the outcomes of treatment for many clients with mental disorders. The following sections discuss several categories of drugs used to treat mental disorders (psychotropic drugs): antipsychotics, antidepressants, mood stabilizers, anxiolytics, and stimulants. Nurses should understand how these drugs work; their side effects, contraindications, and interactions; and the nursing interventions required to help clients manage medication regimens.

Several terms used in discussions of drugs and drug therapy are important for nurses to know. **Efficacy** refers to the maximal therapeutic effect that a drug can achieve. **Potency** describes the amount of the drug needed to achieve that maximum effect; low-potency drugs require higher dosages to achieve efficacy, while high-potency drugs achieve efficacy at lower dosages. **Half-life** is the time it takes for half of the drug to be removed from the bloodstream. Drugs with a shorter half-life may need to be given three or four times a day, but drugs with a longer half-life may be given once a day. The time that a drug needs to leave the body completely after it has been discontinued is about five times its half-life.

Keeping clients informed

The U.S. Food and Drug Administration (FDA) is responsible for supervising the testing and marketing of medications for public safety. These activities include clinical drug trials for new drugs and monitoring the effectiveness and side effects of medications. The FDA approves each drug for use in a particular population and for specific diseases. At times, a drug will prove effective for a disease that differs from the one involved in original testing and FDA approval. This is called **off-label use**. An example is some anticonvulsant drugs (approved to prevent seizures) that are prescribed for their effects in stabilizing the moods of clients with bipolar disorder (off-label use). The FDA also monitors the occurrence and severity of drug side effects. When a drug is found to have serious or life-threatening side effects, even if such side effects are rare, the FDA may issue a **black box warning**. This means that package inserts must have a highlighted box, separate from the text, which contains a warning about

the serious or life-threatening side effects. Several psychotropic medications discussed later in this chapter carry black box warnings.

Principles that Guide Pharmacologic Treatment

The following are several principles that guide the use of medications to treat psychiatric disorders:

- A medication is selected based on its effect on the client's target symptoms such as delusional thinking, panic attacks, or hallucinations. The medication's effectiveness is evaluated largely by its ability to diminish or eliminate the target symptoms.
- Many psychotropic drugs must be given in adequate dosages for some time before their full effects are realized. For example, tricyclic antidepressants can require 4 to 6 weeks before the client experiences optimal therapeutic benefit.
- The dosage of medication is often adjusted to the lowest effective dosage for the client. Sometimes a client may need higher dosages to stabilize his or her target symptoms, while lower dosages can be used to sustain those effects over time.
- As a rule, older adults require lower dosages of medications than do younger clients to experience therapeutic effects. It may also take longer for a drug to achieve its full therapeutic effect in older adults.
- Psychotropic medications are often decreased gradually (tapering) rather than abruptly. This is because of potential problems with **rebound** (temporary return of symptoms), recurrence (of the original symptoms), or **withdrawal** (new symptoms resulting from discontinuation of the drug).
- Follow-up care is essential to ensure compliance with the medication regimen, to make needed adjustments in dosage, and to manage side effects.
- Compliance with the medication regimen is often enhanced when the regimen is as simple as possible in terms of both the number of medications prescribed and the number of daily doses.

Antipsychotic Drugs

Antipsychotic drugs, formerly known as *neuroleptics*, are used to treat the symptoms of psychosis, such as the delusions and hallucinations seen in schizophrenia, schizoaffective disorder, and the manic phase of bipolar disorder. Off-label uses of antipsychotics include treatment of anxiety and insomnia; aggressive behavior; and delusions, hallucinations, and other disruptive behaviors that sometimes accompany Alzheimer disease. Antipsychotic drugs work by blocking receptors of the neurotransmitter dopamine. They have been in clinical use since the 1950s. They are the primary medical treatment for schizophrenia and are also used in psychotic episodes of acute mania, psychotic depression, and drug-induced psychosis. Clients with dementia who have psychotic symptoms sometimes respond to low dosages of conventional antipsychotics. Second-generation antipsychotics can increase mortality rates in elderly clients with dementia-related psychosis. Short-term therapy with antipsychotics may be useful for transient psychotic symptoms such as those seen in some clients with borderline personality disorder.

Table 2.3 lists available dosage forms, usual daily oral dosages, and extreme dosage ranges for conventional and atypical antipsychotic drugs. The low end of the extreme range is typically used with older adults or children with psychoses, aggression, or extreme behavior management problems.

Mechanism of Action

The major action of all antipsychotics in the nervous system is to block receptors for the neurotransmitter dopamine; however, the therapeutic mechanism of action is only partially understood. Dopamine receptors are classified into subcategories (D_1, D_2, D_3, D_4, and D_5), and D_2, D_3, and D_4 have been associated with mental illness. The conventional, or first-generation, antipsychotic drugs are potent antagonists (blockers) of D_2, D_3, and D_4. This not only makes them effective in treating target symptoms but also produces many extrapyramidal side effects (discussion to follow) because of the blocking of the D_2 receptors. Newer, atypical or second-generation antipsychotic drugs, such as clozapine (Clozaril), are relatively weak blockers of D_2, which may account for the lower incidence of extrapyramidal side effects. In addition, second-generation antipsychotics inhibit the reuptake of serotonin, as do some of the antidepressants, increasing their effectiveness in treating the depressive aspects of schizophrenia. Paliperidone (Invega), iloperidone (Fanapt), asenapine (Saphris), and lurasidone (Latuda) are the newest second-generation agents. Paliperidone (Invega) is chemically similar to risperidone (Risperdal); however, it is an extended-release preparation. This means the client can take one daily dose in most cases, which may be a factor in increased compliance. Asenapine (Saphris) is a sublingual tablet, so clients must avoid food or drink for 10 to 15 minutes after the medication dissolves.

The third generation of antipsychotics, called dopamine system stabilizers, is being developed. These drugs are thought to stabilize dopamine output; that is, they preserve or enhance dopaminergic transmission when it is too low and reduce it when it is too high. This results in control of symptoms without some of the side effects of other antipsychotic medications. Aripiprazole (Abilify), the first drug of this type, was approved for use in 2002. Cariprazine (Vraylar) and brexpiprazole (Rexulti) are newer third-generation antipsychotics. These drugs are used for schizophrenia, manic episodes, and as adjunct medication in both bipolar disorder and depression. The most common side effects are sedation, weight gain, akathisia, headache, anxiety, and nausea (Stahl, 2017).

TABLE 2.3 Antipsychotic Drugs

Generic (Trade) Name	Forms	Daily Dosage*	Extreme Dosage Ranges*
Conventional or first-generation antipsychotics			
Phenothiazines			
Chlorpromazine (Thorazine)	T, L, INJ	200–1,600	25–2,000
Perphenazine (Trilafon)	T, L, INJ	16–32	4–64
Fluphenazine (Prolixin)	T, L, INJ	2.5–20	1–60
Thioridazine (Mellaril)	T, L	200–600	40–800
Mesoridazine (Serentil)	T, L, INJ	75–300	30–400
Trifluoperazine (Stelazine)	T, L, INJ	6–50	2–80
Thioxanthene			
Thiothixene (Navane)	C, L, INJ	6–30	6–60
Butyrophenones			
Haloperidol (Haldol)	T, L, INJ	2–20	1–100
Droperidol (Inapsine)	INJ	2.5	
Dibenzazepine			
Loxapine (Loxitane)	C, L, INJ	60–100	30–250
Dihydroindolone			
Molindone (Moban)	T, L	50–100	15–250
Atypical or second-generation antipsychotics			
Clozapine (Clozaril)	T	150–500	75–700
Fazaclo (clozapine)	DT	150–500	75–700
Risperidone (Risperdal)	T, L, DT	2–8	1–16
Olanzapine (Zyprexa)	T	5–15	5–20
Quetiapine (Seroquel)	T	300–600	200–750
Ziprasidone (Geodon)	C, INJ	40–160	20–200
Paliperidone (Invega)	T	6	3–12
Iloperidone (Fanapt)	T	12–24	2–24
Asenapine (Saphris)	T (SL)	10–20	10–20
Lurasidone (Latuda)	T	40–80	20–160
Third-generation antipsychotics			
Aripiprazole (Abilify)	T	15–30	10–40
Cariprazine (Vraylar)	C	3–6	1.5–6
Brexpiprazole (Rexulti)	T	1–3	5–4

*Values are in milligrams per day for oral doses only.
C, capsule; DT, orally disintegrating tablet; INJ, injection for IM (usually prn) use; L, liquid for oral use; SL, sublingual; T, tablet.

Six antipsychotics are available in **depot injection**, a time-release form of intramuscular medication for maintenance therapy. Two first-generation antipsychotics use sesame oil as the vehicle for these injections, so the medication is absorbed slowly over time; thus, less frequent administration is needed to maintain the desired therapeutic effects. Decanoate fluphenazine (Prolixin) has a duration of 7 to 28 days, and decanoate haloperidol (Haldol) has a duration of 4 weeks. After the client's condition is stabilized with oral doses of these medications, administration by depot injection is required every 2 to 4 weeks to maintain the therapeutic effect. Risperidone (Risperdal Consta), paliperidone (Invega Sustenna), and olanzapine pamoate (Zyprexa Relprevv), second-generation antipsychotics, encapsulate active medication into polymer-based microspheres that degrade slowly in the body, gradually releasing the drug at a controlled rate. Risperdal Consta, 25 mg, is given every 2 weeks. Invega Sustenna, 117 mg, is given every 4 weeks. Zyprexa Relprevv can be given 210 mg every 2 weeks or 405 mg every 4 weeks. Zyprexa Relprevv has the potential to cause **postinjection delirium/sedation syndrome**, including sedation, confusion, disorientation, agitation, and cognitive impairment that can progress to ataxia, convulsions, weakness, and hypertension, which can lead to arrest. For that reason, the client must be directly observed by a health care professional for 3 hours after the injection and must be alert, oriented, and symptom-free before he or she can be released (Meyers et al., 2017). Aripiprazole (Abilify Maintena), a third-generation antipsychotic, is slowly absorbed into the bloodstream because of insolubility of aripiprazole particles (Otsuka America Pharmaceuticals, 2018). After initiation with oral medication, Abilify Maintena 400 mg is given monthly.

➔ WARNING - Atypical Antipsychotics

Elderly patients with dementia-related psychosis treated with atypical antipsychotic drugs are at an increased risk for death. Causes of death are varied, but most appear to be either cardiovascular or infectious in nature.

Side Effects

Extrapyramidal Side Effects. Extrapyramidal symptoms (EPSs), serious neurologic symptoms, are the major side effects of antipsychotic drugs. They include acute dystonia, pseudoparkinsonism, and akathisia. Although often collectively referred to as EPSs, each of these reactions has distinct features. One client can experience all the reactions in the same course of therapy, which makes distinguishing among them difficult. Blockade of D_2 receptors in the midbrain region of the brain stem is responsible for the development of EPSs. First-generation antipsychotic drugs cause a greater incidence of EPSs than do second-generation antipsychotic drugs, with ziprasidone (Geodon) rarely causing EPSs (Virani, Bezchlibnyk-Butler, & Jeffries, 2017).

➔ WARNING - Geodon

Contraindicated in patients with a known history of QT prolongation, recent myocardial infarction, or uncompensated heart failure, it should not be used with other QT-prolonging drugs.

Therapies for acute dystonia, pseudoparkinsonism, and akathisia are similar and include lowering the dosage of the antipsychotic, changing to a different antipsychotic, or administering anticholinergic medication (discussion to follow). While anticholinergic drugs also produce side effects, atypical antipsychotic medications are often prescribed because the incidence of EPSs associated with them is decreased.

Acute **dystonia** includes acute muscular rigidity and cramping, a stiff or thick tongue with difficulty swallowing, and, in severe cases, laryngospasm and respiratory difficulties. Dystonia is most likely to occur in the first week of treatment, in clients younger than 40 years, in males, and in those receiving high-potency drugs such as haloperidol and thiothixene. Spasms or stiffness in muscle groups can produce *torticollis* (twisted head and neck), *opisthotonus* (tightness in the entire body with the head back and an arched neck), or *oculogyric crisis* (eyes rolled back in a locked position). Acute dystonic reactions can be painful and frightening for the client. Immediate treatment with anticholinergic drugs, such as intramuscular benztropine mesylate (Cogentin) or intramuscular or intravenous diphenhydramine (Benadryl), usually brings rapid relief.

Table 2.4 lists the drugs and their routes and dosages used to treat EPSs. The addition of a regularly scheduled oral anticholinergic, such as benztropine, may allow the client to continue taking the antipsychotic drug with no further dystonia. Recurrent dystonic reactions would necessitate a lower dosage or a change in the antipsychotic drug. Assessment of EPSs using the Simpson–Angus rating scale is discussed further in Chapter 16.

Drug-induced parkinsonism, or **pseudoparkinsonism**, is often referred to by the generic label of EPS. Symptoms resemble those of Parkinson disease and include a stiff, stooped posture; masklike facies; decreased arm swing; a shuffling, festinating gait (with small steps); cogwheel rigidity (ratchet-like movements of joints); drooling; tremor; bradycardia; and coarse pill-rolling movements of the thumb and fingers while at rest. Parkinsonism is treated by changing to an antipsychotic medication that has a lower incidence of EPS or by adding an oral anticholinergic agent or amantadine, which is a dopamine agonist that increases transmission of dopamine blocked by the antipsychotic drug.

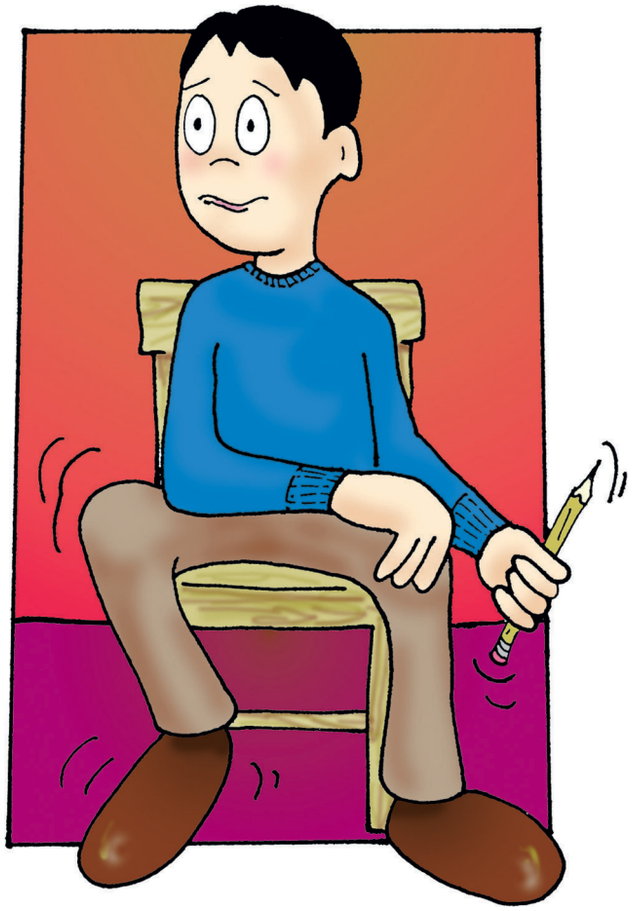
Akathisia is reported by the client as an intense need to move about. The client appears restless or anxious and agitated, often with a rigid posture or gait and a lack of spontaneous gestures. This feeling of internal restlessness

TABLE 2.4 Drugs Used to Treat Extrapyramidal Side Effects

Generic (Trade) Name	Oral Dosages (mg)	IM/IV Doses (mg)	Drug Class
Amantadine (Symmetrel)	100 bid or tid	–	Dopaminergic agonist
Benztropine (Cogentin)	1–3 bid	1–2	Anticholinergic
Biperiden (Akineton)	2 tid–qid	2	Anticholinergic
Diazepam (Valium)	5 tid	5–10	Benzodiazepine
Diphenhydramine (Benadryl)	25–50 tid or qid	25–50	Antihistamine
Lorazepam (Ativan)	1–2 tid	–	Benzodiazepine
Procyclidine (Kemadrin)	2.5–5 tid	–	Anticholinergic
Propranolol (Inderal)	10–20 tid; up to 40 qid	–	Beta-Blocker
Trihexyphenidyl (Artane)	2–5 tid	–	Anticholinergic

bid, two times a day; IM, intramuscularly; IV, intravenous; qid, four times a day; tid, three times a day.

and the inability to sit still or rest often leads clients to discontinue their antipsychotic medication. Akathisia can be treated by a change in antipsychotic medication or by the addition of an oral agent such as a beta-blocker, anticholinergic, or benzodiazepine.



Akathisia

Neuroleptic Malignant Syndrome. Neuroleptic malignant syndrome (NMS) is a potentially fatal idiosyncratic reaction to an antipsychotic (or neuroleptic) drug. The major symptoms of NMS are rigidity; high fever; autonomic instability such as unstable blood pressure, diaphoresis, and pallor; delirium; and elevated levels of enzymes, particularly creatine phosphokinase. Clients with NMS are usually confused and often mute; they may fluctuate from agitation to stupor. All antipsychotics seem to have the potential to cause NMS, but high dosages of high-potency drugs increase the risk. NMS most often occurs in the first 2 weeks of therapy or after an increase in dosage, but it can occur at any time.

Dehydration, poor nutrition, and concurrent medical illness all increase the risk for NMS. Treatment includes immediate discontinuance of all antipsychotic medications and the institution of supportive medical care to treat dehydration and hyperthermia until the client's physical condition stabilizes. After NMS, the decision to treat the client with other antipsychotic drugs requires full discussion between the client and the physician to weigh the relative risks against the potential benefits of therapy.

Tardive Dyskinesia. Tardive dyskinesia (TD), a syndrome of permanent involuntary movements, is most commonly caused by the long-term use of conventional antipsychotic drugs. About 20% to 30% of patients on long-term treatment develop symptoms of TD, and the pathophysiology is still unclear. The symptoms of TD include involuntary movements of the tongue, facial and neck muscles, upper and lower extremities, and truncal musculature. Tongue thrusting and protruding, lip smacking, blinking, grimacing, and other excessive unnecessary facial movements are characteristic. After it has developed, TD is irreversible, although decreasing or discontinuing antipsychotic medications can arrest its progression. Unfortunately, antipsychotic medications can mask the beginning symptoms of TD; that is, increased dosages of the antipsychotic medication cause the initial symptoms to disappear temporarily. As the symptoms of TD worsen, however, they "break through" the effect of the antipsychotic drug.

In 2017, the FDA approved valbenazine (Ingrezza) and deutetrabenazine (Austedo, Teva) as the first drugs to treat TD. These drugs are vesicular monoamine transporter 2 (VMAT2) inhibitors. It is believed that these drugs decrease activity of monoamines, such as dopamine, serotonin, and norepinephrine, thereby decreasing the abnormal movements associated with Huntington chorea and TD. Valbenazine has a dosage range of 40 to 80 mg daily, and deutetrabenazine ranges from 12 to 48 mg daily. Both drugs cause somnolence, QT prolongation, akathisia, and restlessness. In addition, valbenazine can cause nausea, vomiting, headache, and balance disturbances. Deutetrabenazine can also cause NMS and increased depression and suicidality in patients with Huntington chorea (Kim, Baker, & Levien, 2018).

Preventing TD is the primary goal when administering antipsychotics. This can be done by keeping maintenance dosages as low as possible, changing medications, and monitoring the client periodically for initial signs of TD using a standardized assessment tool such as the Abnormal Involuntary Movement Scale (see Chapter 16). Clients who have already developed signs of TD but still need to take an antipsychotic medication are often given one of the atypical antipsychotic drugs that have not yet been found to cause or therefore worsen TD.

Anticholinergic Side Effects. Anticholinergic side effects often occur with the use of antipsychotics and include orthostatic hypotension, dry mouth, constipation, urinary hesitance or retention, blurred near vision, dry eyes, photophobia, nasal congestion, and decreased memory. These side effects usually decrease within 3 to 4 weeks but do not entirely remit. The client taking anticholinergic agents

for EPSs may have increased problems with anticholinergic side effects. Using calorie-free beverages or hard candy may alleviate dry mouth, and stool softeners, adequate fluid intake, and the inclusion of grains and fruit in the diet may prevent constipation.

Other Side Effects. Antipsychotic drugs also increase blood prolactin levels. Elevated prolactin may cause breast enlargement and tenderness in men and women; diminished libido, erectile and orgasmic dysfunction, and menstrual irregularities; and increased risk for breast cancer. It can also contribute to weight gain.

Weight gain can accompany most antipsychotic medications, but it is most likely with the second-generation antipsychotic drugs, with ziprasidone (Geodon) being the exception. Weight increases are most significant with clozapine (Clozaril) and olanzapine (Zyprexa). Since 2004, the FDA has made it mandatory for drug manufacturers that atypical antipsychotics carry a warning of the increased risk for hyperglycemia and diabetes. Though the exact mechanism of this weight gain is unknown, it is associated with increased appetite, binge eating, carbohydrate craving, food preference changes, and decreased satiety in some clients. Prolactin elevation may stimulate feeding centers, histamine antagonism stimulates appetite, and there may be an as yet undetermined interplay of multiple neurotransmitter and receptor interactions with resultant changes in appetite, energy intake, and feeding behavior. Penninx and Lange (2018) found that genetics can also make clients more prone to weight gain and metabolic syndrome.

Metabolic syndrome is a cluster of conditions that increase the risk for heart disease, diabetes, and stroke. The syndrome is diagnosed when three or more of the following are present:

- Obesity—excess weight, increased body mass index (BMI), and increased abdominal girth because of fat deposits
- Increased blood pressure
- High blood sugar level
- High cholesterol—with at least 150 mg/dL of triglyceride; less than 40 mg/dL of high-density lipoprotein for women and 50 mg/dL for men

Obesity is common in clients with schizophrenia, further increasing the risk for type 2 diabetes mellitus and cardiovascular disease. In addition, clients with severe, persistent mental illness are less likely to exercise or eat low-fat nutritionally balanced diets; this pattern decreases the likelihood that they can minimize potential weight gain or lose excess weight. The increased risk of heart disease results in a shorter life expectancy (Penninx & Lange, 2018).

It is recommended that clients taking antipsychotics be involved in an educational program to control weight and decrease BMI. However, it can be a difficult task. Gill, Zechner, Zambo, Swarbrick, and Murphy (2016) found that clients had greater success when staff provided information and practical support when it was needed. Information about healthy eating and the need for physical activity was modified to account for the client's cognitive difficulties where they existed. Community-based social support was provided to help clients make necessary changes over time in their home environments.

Most antipsychotic drugs cause relatively minor cardiovascular adverse effects such as postural hypotension, palpitations, and tachycardia. Certain antipsychotic drugs, such as thioridazine (Mellaril), droperidol (Inapsine), and mesoridazine (Serentil), can also cause a lengthening of the QT interval. A QT interval longer than 500 ms is considered dangerous and is associated with life-threatening dysrhythmias and sudden death. Although rare, the lengthened QT interval can cause torsade de pointes, a rapid heart rhythm of 150 to 250 beats/minute, resulting in a "twisted" appearance on the electrocardiogram (hence the name "torsade de pointes"). Thioridazine and mesoridazine are used to treat psychosis; droperidol is most often used as an adjunct to anesthesia or to produce sedation. Sertindole (Serlect) was never approved in the United States to treat psychosis but was used in Europe and was subsequently withdrawn from the market because of the number of cardiac dysrhythmias and deaths that it caused.

➔ WARNING - Droperidol, Thioridazine, and Mesoridazine

May lengthen the QT interval, leading to potentially life-threatening cardiac dysrhythmias or cardiac arrest.

Clozapine produces fewer traditional side effects than do most antipsychotic drugs, but it has the potentially fatal side effect of agranulocytosis. This develops suddenly and is characterized by fever, malaise, ulcerative sore throat, and leukopenia. This side effect may not manifest immediately and can occur up to 24 weeks after the initiation of therapy. Initially, clients needed to have a weekly white blood cell (WBC) count above 3,500/mm^3 to obtain the next week's supply of clozapine. Currently, all clients must have weekly WBCs drawn for the first 6 months. If the WBC is 3,500/mm^3 and the absolute neutrophil count (ANC) is 2,000/mm^3, the client may have these labs monitored every 2 weeks for 6 months and then every 4 weeks. This decreased monitoring is dependent on continuous therapy with clozapine. Any interruption in therapy requires a return to more frequent monitoring for a specified period of time. After clozapine has been discontinued, weekly monitoring of the WBC and ANC is required for 4 weeks.

➔ WARNING - Clozapine

May cause agranulocytosis, a potentially life-threatening event. Clients who are being treated with clozapine must have a baseline WBC count and differential before initiation of treatment and a WBC count every week throughout treatment and for 4 weeks after discontinuation of clozapine.

Client Teaching

The nurse informs clients taking antipsychotic medication about the types of side effects that may occur and encourages clients to report such problems to the physician instead of discontinuing the medication. The nurse teaches the client methods of managing or avoiding unpleasant side effects and maintaining the medication regimen. Drinking sugar-free fluids and eating sugar-free hard candy ease dry mouth. The client should avoid calorie-laden beverages and candy because they promote dental caries, contribute to weight gain, and do little to relieve dry mouth. Methods to prevent or relieve constipation include exercising and increasing water and bulk-forming foods in the diet. Stool softeners are permissible, but the client should avoid laxatives. The use of sunscreen is recommended because photosensitivity can cause the client to sunburn easily.

Clients should monitor the amount of sleepiness or drowsiness they feel. They should avoid driving and performing other potentially dangerous activities until their response times and reflexes seem normal.

If the client forgets a dose of antipsychotic medication, he or she can take the missed dose if it is only 3 or 4 hours late. If the dose is more than 4 hours overdue or the next dose is due, the client can omit the forgotten dose. The nurse encourages clients who have difficulty remembering to take their medication to use a chart and to record doses when taken or to use a pillbox that can be prefilled with accurate doses for the day or week.

Antidepressant Drugs

Antidepressant drugs are primarily used in the treatment of major depressive illness, anxiety disorders, the depressed phase of bipolar disorder, and psychotic depression. Off-label uses of antidepressants include the treatment of chronic pain, migraine headaches, peripheral and diabetic neuropathies, sleep apnea, dermatologic disorders, panic disorder, and eating disorders. Although the mechanism of action is not completely understood, antidepressants somehow interact with the two neurotransmitters, norepinephrine and serotonin, that regulate mood, arousal, attention, sensory processing, and appetite.

Antidepressants are divided into four groups:

1. Tricyclic and the related cyclic antidepressants
2. Selective serotonin reuptake inhibitors (SSRIs)
3. MAO inhibitors (MAOIs)
4. Other antidepressants such as desvenlafaxine (Pristiq), venlafaxine (Effexor), bupropion (Wellbutrin), duloxetine (Cymbalta), trazodone (Desyrel), and nefazodone (Serzone)

Table 2.5 lists the dosage forms, usual daily dosages, and extreme dosage ranges.

The cyclic compounds became available in the 1950s and for years were the first choice of drugs to treat depression even though they cause varying degrees of sedation, orthostatic hypotension (drop in blood pressure on rising), and anticholinergic side effects. In addition, cyclic antidepressants are potentially lethal if taken in an overdose.

During that same period, the MAOIs were discovered to have a positive effect on people with depression. Although the MAOIs have a low incidence of sedation and anticholinergic effects, they must be used with extreme caution for several reasons:

- A life-threatening side effect, hypertensive crisis, may occur if the client ingests foods containing tyramine (an amino acid) while taking MAOIs.
- Because of the risk of potentially fatal drug interactions, MAOIs cannot be given in combination with other MAOIs, tricyclic antidepressants, meperidine (Demerol), CNS depressants, many antihypertensives, or general anesthetics.
- MAOIs are potentially lethal in overdose and pose a potential risk in clients with depression who may be considering suicide.

The selective serotonin reuptake inhibitors (SSRIs), first available in 1987 with the release of fluoxetine (Prozac), have replaced the cyclic drugs as the first choice in treating depression because they are equal in efficacy and produce fewer troublesome side effects. The SSRIs and clomipramine are effective in the treatment of *obsessive-compulsive disorder* (OCD) as well. Prozac Weekly is the first and only medication that can be given once a week as maintenance therapy for depression after the client has been stabilized on fluoxetine. It contains 90 mg of fluoxetine with an enteric coating that delays release into the bloodstream.

Preferred Drugs for Clients at High Risk for Suicide

Suicide is always a primary consideration when treating clients with depression. SSRIs, venlafaxine, nefazodone, and bupropion are often better choices for those who are potentially suicidal or highly impulsive because they carry no risk of lethal overdose in contrast to the cyclic compounds and the MAOIs. However, SSRIs are effective only for mild and moderate depression. Evaluation of the risk for suicide must continue even after treatment with antidepressants is initiated. The client may feel more energized but still have suicidal thoughts, which increases the likelihood of a suicide attempt. Also, because it often takes weeks before the medications have a full therapeutic effect, clients may become discouraged and tired of waiting to feel better, which can result in suicidal behavior. There is an FDA-required warning for SSRIs and increased suicidal risk in children and adolescents.

Mechanism of Action

The precise mechanism by which antidepressants produce their therapeutic effects is not known, but much is known about their action on the CNS. The major interaction is with the monoamine neurotransmitter systems in the brain, particularly norepinephrine and serotonin. Both of these neurotransmitters are released throughout the brain and help regulate arousal, vigilance, attention, mood, sensory processing, and appetite. Norepinephrine, serotonin, and dopamine are removed from the synapses

TABLE 2.5 Antidepressant Drugs

Generic (Trade) Name	Forms	Usual Daily Dosages*	Extreme Dosage Ranges*
Selective serotonin reuptake inhibitors			
Fluoxetine (Prozac)	C, L	20–60	10–80
Fluvoxamine (Luvox)	T	150–200	50–300
Paroxetine (Paxil)	T	20–40	10–50
Sertraline (Zoloft)	T	100–150	50–200
Citalopram (Celexa)	T, L	20–40	20–60
Escitalopram (Lexapro)	T	10–20	5–30
Cyclic compounds			
Imipramine (Tofranil)	T, C, INJ	150–200	50–300
Desipramine (Norpramin)	T, C	150–200	50–300
Amitriptyline (Elavil)	T, INJ	150–200	50–300
Nortriptyline (Pamelor)	C, L	75–100	25–150
Doxepin (Sinequan)	C, L	150–200	25–300
Trimipramine (Surmontil)	C	150–200	50–300
Protriptyline (Vivactil)	T	15–40	10–60
Maprotiline (Ludiomil)	T	100–150	50–200
Mirtazapine (Remeron)	T	15–45	15–60
Amoxapine (Asendin)	T	150–200	50–250
Clomipramine (Anafranil)	C, INJ	150–200	50–250
Other compounds			
Bupropion (Wellbutrin)	T	200–300	100–450
Venlafaxine (Effexor)	T, C	75–225	75–375
Desvenlafaxine (Pristiq)	T	50–100	50 every other day–400
Trazodone (Desyrel)	T	200–300	100–600
Nefazodone (Serzone)	T	300–600	100–600
Duloxetine (Cymbalta)	C	60	30–90
Vilazodone (Viibryd)	T	20–4	10–40
Monoamine oxidase inhibitors			
Phenelzine (Nardil)	T	45–60	15–90
Tranylcypromine (Parnate)	T	30–50	10–90
Isocarboxazid (Marplan)	T	20–40	10–60

*Values are in milligrams per day for oral doses only.

C, capsule; INJ, injection for IM use; L, liquid; T, tablet.

after release by reuptake into presynaptic neurons. After reuptake, these three neurotransmitters are reloaded for subsequent release or metabolized by the enzyme MAO. The SSRIs block the reuptake of serotonin, the cyclic antidepressants and venlafaxine block the reuptake of norepinephrine primarily and block serotonin to some degree, and the MAOIs interfere with enzyme metabolism. This is not the complete explanation, however; the blockade of serotonin and norepinephrine reuptake and the inhibition of MAO occur in a matter of hours, while antidepressants are rarely effective until taken for several weeks. The cyclic compounds may take 4 to 6 weeks to be effective, MAOIs need 2 to 4 weeks for effectiveness, and SSRIs may be effective in 2 to 3 weeks. Researchers believe that the actions of these drugs are an "initiating event" and that eventual therapeutic effectiveness results when neurons respond more slowly, making serotonin available at the synapses (Burchum & Rosenthal, 2018).

Side Effects of Selective Serotonin Reuptake Inhibitors

SSRIs have fewer side effects compared to the cyclic compounds. Enhanced serotonin transmission can lead to several common side effects such as anxiety, agitation, akathisia (motor restlessness), nausea, insomnia, and sexual dysfunction, specifically diminished sexual drive or difficulty achieving an erection or orgasm. In addition, weight gain is both an initial and ongoing problem during antidepressant therapy, although SSRIs cause less weight gain than other antidepressants. Taking medications with food usually can minimize nausea. Akathisia is usually treated with a beta-blocker, such as propranolol (Inderal) or a benzodiazepine. Insomnia may continue to be a problem even if the client takes the medication in the morning; a sedative–hypnotic or low-dosage trazodone may be needed.

Less common side effects include sedation (particularly with paroxetine [Paxil]), sweating, diarrhea, hand tremor,

and headaches. Diarrhea and headaches can usually be managed with symptomatic treatment. Sweating and continued sedation most likely indicate the need for a change to another antidepressant.

Side Effects of Cyclic Antidepressants

Cyclic compounds have more side effects than do SSRIs and the newer miscellaneous compounds. The individual medications in this category vary in terms of the intensity of side effects, but generally side effects fall into the same categories. The cyclic antidepressants block cholinergic receptors, resulting in anticholinergic effects such as dry mouth, constipation, urinary hesitancy or retention, dry nasal passages, and blurred near vision. More severe anticholinergic effects such as agitation, delirium, and ileus may occur, particularly in older adults. Other common side effects include orthostatic hypotension, sedation, weight gain, and tachycardia. Clients may develop tolerance to anticholinergic effects, but these side effects are common reasons that clients discontinue drug therapy. Clients taking cyclic compounds frequently report sexual dysfunction similar to problems experienced with SSRIs. Both weight gain and sexual dysfunction are cited as common reasons for noncompliance (Stahl, 2017).

Side Effects of Monoamine Oxidase Inhibitors

The most common side effects of MAOIs include daytime sedation, insomnia, weight gain, dry mouth, orthostatic hypotension, and sexual dysfunction. The sedation and insomnia are difficult to treat and may necessitate a change in medication. Of particular concern with MAOIs is the potential for a life-threatening hypertensive crisis if the client ingests food that contains tyramine or takes sympathomimetic drugs. Because the enzyme MAO is necessary to break down the tyramine in certain foods, its inhibition results in increased serum tyramine levels, causing severe hypertension, hyperpyrexia, tachycardia, diaphoresis, tremulousness, and cardiac dysrhythmias. Drugs that may cause potentially fatal interactions with MAOIs include SSRIs, certain cyclic compounds, buspirone (BuSpar), dextromethorphan, and opiate derivatives such as meperidine. The client must be able to follow a tyramine-free diet; Box 2.1 lists the foods to avoid. Studies are currently underway to determine whether a selegiline transdermal patch would be effective in treating depression without the risks of dietary tyramine and orally ingested MAOIs.

Side Effects of Other Antidepressants

Of the other or novel antidepressant medications, nefazodone, trazodone, and mirtazapine commonly cause sedation. Both nefazodone and trazodone commonly cause headaches. Nefazodone can also cause dry mouth and nausea. Bupropion, venlafaxine, and desvenlafaxine may cause loss of appetite, nausea, agitation, and insomnia. Venlafaxine may also cause dizziness, sweating, or sedation. Sexual dysfunction is much less common with the novel antidepressants, with one notable exception: Trazodone can cause priapism (a sustained and painful erection that necessitates immediate treatment and discontinuation of the drug). Priapism may also result in impotence.

BOX 2.1 Foods (Containing Tyramine) to Avoid When Taking Monoamine Oxidase Inhibitors

- Mature or aged cheeses or dishes made with cheese, such as lasagna or pizza. All cheese is considered aged except cottage cheese, cream cheese, ricotta cheese, and processed cheese slices.
- Aged meats such as pepperoni, salami, mortadella, summer sausage, beef logs, meat extracts, and similar products. Make sure meat and chicken are fresh and have been properly refrigerated.
- Italian broad beans (fava), bean curd (tofu), banana peel, overripe fruit, and avocado.
- All tap beers and microbrewery beer. Drink no more than two cans or bottles of beer (including nonalcoholic beer) or 4 oz of wine per day.
- Sauerkraut, soy sauce or soybean condiments, or marmite (concentrated yeast).
- Yogurt, sour cream, peanuts, brewer's yeast, and monosodium glutamate (MSG).

Adapted from Ohio State University Wexner Medical Center, Columbus, OH (2018)

→ WARNING - Nefazodone

May cause rare but potentially life-threatening liver damage, which could lead to liver failure.

→ WARNING - Bupropion

Can cause seizures at a rate four times that of other antidepressants. The risk for seizures increases when doses exceed 450 mg/day (400 mg SR); dose increases are sudden or in large increments; the client has a history of seizures, cranial trauma, excessive use of or withdrawal from alcohol, or addiction to opiates, cocaine, or stimulants; the client uses over-the-counter (OTC) stimulants or anorectics; or the client has diabetes being treated with oral hypoglycemics or insulin.

Drug Interactions

An uncommon but potentially serious drug interaction called **serotonin syndrome** (or serotonergic syndrome) can result from taking an MAOI and an SSRI at the same time. It can also occur if the client takes one of these drugs too close to the end of therapy with the other. In other words, one drug must clear the person's system before initiation of therapy with the other. Symptoms include

agitation, sweating, fever, tachycardia, hypotension, rigidity, hyperreflexia, and, in extreme reactions, even coma and death (Burchum & Rosenthal, 2018). These symptoms are similar to those seen with an SSRI overdose.

Client Teaching

Clients should take SSRIs first thing in the morning unless sedation is a problem; generally, paroxetine most often causes sedation. If the client forgets a dose of an SSRI, he or she can take it up to 8 hours after the missed dose. To minimize side effects, clients generally should take cyclic compounds at night in a single daily dose when possible. If the client forgets a dose of a cyclic compound, he or she should take it within 3 hours of the missed dose or omit the dose for that day. Clients should exercise caution when driving or performing activities requiring sharp, alert reflexes until sedative effects can be determined.

Clients taking MAOIs need to be aware that a life-threatening hyperadrenergic crisis can occur if they do not observe certain dietary restrictions. They should receive a written list of foods to avoid while taking MAOIs. The nurse should make clients aware of the risk for serious or even fatal drug interactions when taking MAOIs and instruct them not to take any additional medication, including OTC preparations, without checking with the physician or pharmacist.

Mood-Stabilizing Drugs

Mood-stabilizing drugs are used to treat bipolar disorder by stabilizing the client's mood, preventing or minimizing the highs and lows that characterize bipolar illness, and treating acute episodes of mania. Lithium is the most established mood stabilizer; some anticonvulsant drugs, particularly carbamazepine (Tegretol) and valproic acid (Depakote, Depakene), are effective mood stabilizers. Other anticonvulsants, such as gabapentin (Neurontin), topiramate (Topamax), oxcarbazepine (Trileptal), and lamotrigine (Lamictal), are also used for mood stabilization. Occasionally, clonazepam (Klonopin) is also used to treat acute mania. Clonazepam is included in the discussion of antianxiety agents.

→ WARNING - Lamotrigine

Can cause serious rashes requiring hospitalization, including Stevens-Johnson syndrome and, rarely, life-threatening toxic epidermal necrolysis. The risk for serious rashes is greater in children younger than 16 years.

Mechanism of Action

Although lithium has many neurobiologic effects, its mechanism of action in bipolar illness is poorly understood. Lithium normalizes the reuptake of certain neurotransmitters such as serotonin, norepinephrine, acetylcholine, and dopamine. It also reduces the release of norepinephrine through competition with calcium and produces its effects intracellularly rather than within neuronal synapses; it acts directly on G-proteins and certain enzyme subsystems such as cyclic adenosine monophosphates and phosphatidylinositol. Lithium is considered a first-line agent in the treatment of bipolar disorder (Stahl, 2017).

The mechanism of action for anticonvulsants is not clear because it relates to their off-label use as mood stabilizers. Valproic acid and topiramate are known to increase the levels of the inhibitory neurotransmitter GABA. Both valproic acid and carbamazepine are thought to stabilize mood by inhibiting the **kindling process**. This can be described as the snowball-like effect seen when minor seizure activity seems to build up into more frequent and severe seizures. In seizure management, anticonvulsants raise the level of the threshold to prevent these minor seizures. It is suspected that this same kindling process may also occur in the development of full-blown mania with stimulation by more frequent minor episodes. This may explain why anticonvulsants are effective in the treatment and prevention of mania as well.

Dosage

Lithium is available in tablet, capsule, liquid, and sustained-release forms; no parenteral forms are available. The effective dosage of lithium is determined by monitoring serum lithium levels and assessing the client's clinical response to the drug. Daily dosages generally range from 900 to 3,600 mg; more importantly, the serum lithium level should be about 1 mEq/L. Serum lithium levels of less than 0.5 mEq/L are rarely therapeutic, and levels of more than 1.5 mEq/L are usually considered toxic. The lithium level should be monitored every 2 to 3 days while the therapeutic dosage is being determined; then, it should be monitored weekly. When the client's condition is stable, the level may need to be checked once a month or less frequently.

→ WARNING - Lithium

Toxicity is closely related to serum lithium levels and can occur at therapeutic doses. Facilities for serum lithium determinations are required to monitor therapy.

Carbamazepine is available in liquid, tablet, and chewable tablet forms. Dosages usually range from 800 to 1,200 mg/day; the extreme dosage range is 200 to 2,000 mg/day. Valproic acid is available in liquid, tablet, and capsule forms and as sprinkles with dosages ranging from 1,000 to 1,500 mg/day; the extreme dosage range is 750 to 3,000 mg/day. Serum drug levels, obtained 12 hours after the last dose of the medication, are monitored for therapeutic levels of both these anticonvulsants.

Side Effects

Common side effects of lithium therapy include mild nausea or diarrhea, anorexia, fine hand tremor, polydipsia,

polyuria, a metallic taste in the mouth, and fatigue or lethargy. Weight gain and acne are side effects that occur later in lithium therapy; both are distressing for clients. Taking the medication with food may help with nausea, and the use of propranolol often improves the fine tremor. Lethargy and weight gain are difficult to manage or minimize and frequently lead to noncompliance.

Toxic effects of lithium are severe diarrhea, vomiting, drowsiness, muscle weakness, and lack of coordination. Untreated, these symptoms worsen and can lead to renal failure, coma, and death. When toxic signs occur, the drug should be discontinued immediately. If lithium levels exceed 3 mEq/L, dialysis may be indicated.

Side effects of carbamazepine and valproic acid include drowsiness, sedation, dry mouth, and blurred vision. In addition, carbamazepine may cause rashes and orthostatic hypotension, and valproic acid may cause weight gain, alopecia, and hand tremor. Topiramate causes dizziness, sedation, weight loss (rather than gain), and increased incidence of renal calculi (Burchum & Rosenthal, 2018).

➔ WARNING - Valproic Acid and Its Derivatives

Can cause hepatic failure, resulting in fatality. Liver function tests should be performed before therapy and at frequent intervals thereafter, especially for the first 6 months. Can produce teratogenic effects such as neural tube defects (e.g., spina bifida). Can cause life-threatening pancreatitis in both children and adults. Can occur shortly after initiation or after years of therapy.

➔ WARNING - Carbamazepine

Can cause aplastic anemia and agranulocytosis at a rate five to eight times greater than the general population. Pretreatment hematologic baseline data should be obtained and monitored periodically throughout therapy to discover lowered WBC or platelet counts.

Client Teaching

For clients taking lithium and the anticonvulsants, monitoring blood levels periodically is important. The time of the last dose must be accurate so that plasma levels can be checked 12 hours after the last dose has been taken. Taking these medications with meals minimizes nausea. The client should not attempt to drive until dizziness, lethargy, fatigue, or blurred vision has subsided.

Antianxiety Drugs (Anxiolytics)

Antianxiety drugs, or **anxiolytic drugs**, are used to treat anxiety and anxiety disorders, insomnia, obsessive-compulsive disorder (OCD), depression, posttraumatic stress disorder, and alcohol withdrawal. Antianxiety drugs are among the most widely prescribed medications today. A wide variety of drugs from different classifications have been used in the treatment of anxiety and insomnia. Benzodiazepines have proved to be the most effective in relieving anxiety and are the drugs most frequently prescribed. Benzodiazepines may also be prescribed for their anticonvulsant and muscle relaxant effects. Buspirone is a nonbenzodiazepine often used for the relief of anxiety and therefore is included in this section. Other drugs such as propranolol, clonidine (Catapres), and hydroxyzine (Vistaril) that may be used to relieve anxiety are much less effective and are not included in this discussion.

Periodic blood levels

Mechanism of Action

Benzodiazepines mediate the actions of the amino acid GABA, the major inhibitory neurotransmitter in the brain. Because GABA receptor channels selectively admit the anion chloride into neurons, activation of GABA receptors hyperpolarizes neurons and thus is inhibitory. Benzodiazepines produce their effects by binding to a specific site on the GABA receptor. Buspirone is believed to exert its anxiolytic effect by acting as a partial agonist at serotonin receptors, which decreases serotonin turnover (Stahl, 2017).

The benzodiazepines vary in terms of their half-lives, the means by which they are metabolized, and their effectiveness

TABLE 2.6 Antianxiety (Anxiolytic) Drugs

Generic (Trade) Name	Daily Dosage Range	Half-Life (h)	Speed of Onset
Benzodiazepines			
Alprazolam (Xanax)	0.75–1.5	12–15	Intermediate
Chlordiazepoxide (Librium)	15–100	50–100	Intermediate
Clonazepam (Klonopin)	1.5–20	18–50	Intermediate
Clorazepate (Tranxene)	15–60	30–200	Fast
Diazepam (Valium)	4–40	30–100	Very fast
Flurazepam (Dalmane)	15–30	47–100	Fast
Lorazepam (Ativan)	2–8	10–20	Moderately slow
Oxazepam (Serax)	30–120	3–21	Moderately slow
Temazepam (Restoril)	15–30	9.5–20	Moderately fast
Triazolam (Halcion)	0.25–0.5	2–4	Fast
Nonbenzodiazepine			
Buspirone (BuSpar)	15–30	3–11	Very slow

in treating anxiety and insomnia. Table 2.6 lists dosages, half-lives, and speed of onset after a single dose. Drugs with a longer half-life require less frequent dosing and produce fewer rebound effects between doses; however, they can accumulate in the body and produce "next-day sedation" effects. Conversely, drugs with shorter half-lives do not accumulate in the body or cause next-day sedation, but they do have rebound effects and require more frequent dosing.

Temazepam (Restoril), triazolam (Halcion), and flurazepam (Dalmane) are most often prescribed for sleep rather than for relief of anxiety. Diazepam (Valium), chlordiazepoxide (Librium), and clonazepam are often used to manage alcohol withdrawal as well as to relieve anxiety.

Side Effects

Although not a side effect in the true sense, one chief problem encountered with the use of benzodiazepines is their tendency to cause physical dependence. Significant discontinuation symptoms occur when the drug is stopped; these symptoms often resemble the original symptoms for which the client sought treatment. This is especially a problem for clients with long-term benzodiazepine use, such as those with panic disorder or generalized anxiety disorder. Psychological dependence on benzodiazepines is common; clients fear the return of anxiety symptoms or believe they are incapable of handling anxiety without the drugs. This can lead to overuse or abuse of these drugs. Buspirone does not cause this type of physical dependence.

The side effects most commonly reported with benzodiazepines are those associated with CNS depression, such as drowsiness, sedation, poor coordination, and impaired memory or clouded sensorium. When used for sleep, clients may complain of next-day sedation or a hangover effect. Clients often develop a tolerance to these symptoms, and they generally decrease in intensity. Common side effects from buspirone include dizziness, sedation, nausea, and headache (Stahl, 2017). Elderly clients may have more difficulty managing the effects of CNS depression. They may be more prone to falls from the effects on coordination and sedation. They may also have more pronounced memory deficits and may have problems with urinary incontinence, particularly at night.

Client Teaching

Clients need to know that antianxiety agents are aimed at relieving symptoms such as anxiety or insomnia but do not treat the underlying problems that cause the anxiety. Benzodiazepines strongly potentiate the effects of alcohol; one drink while on a benzodiazepine may have the effect of three drinks. Therefore, clients should not drink alcohol while taking benzodiazepines. Clients should be aware of decreased response time, slower reflexes, and possible sedative effects of these drugs when attempting activities such as driving or going to work.

Benzodiazepine withdrawal can be fatal. After the client has started a course of therapy, he or she should never discontinue benzodiazepines abruptly or without the supervision of the physician (Burchum & Rosenthal, 2018).

Stimulants

Stimulant drugs, specifically amphetamines, were first used to treat psychiatric disorders in the 1930s for their pronounced effects on CNS stimulation. In the past, they were used to treat depression and obesity, but those uses are uncommon in current practice. Dextroamphetamine (Dexedrine) has been widely abused to produce a high or to remain awake for long periods. Today, the primary use of stimulants is for ADHD in children and adolescents, residual attention-deficit disorder in adults, and narcolepsy (attacks of unwanted but irresistible daytime sleepiness that disrupt the person's life).

➔ WARNING - Amphetamines

Potential for abuse is high. Administration for prolonged periods may lead to drug dependence.

No alcohol with psychotropic drugs

The primary stimulant drugs used to treat ADHD are methylphenidate (Ritalin), amphetamine (Adderall), and dextroamphetamine (Dexedrine). Pemoline (Cylert) is infrequently used for ADHD because of the potential for liver problems. Of these drugs, methylphenidate accounts for 90% of the stimulant medication given to children for ADHD (Stahl, 2017). About 10% to 30% of clients with ADHD who do not respond adequately to the stimulant medications have been treated with antidepressants. In 2003, atomoxetine (Strattera), a selective norepinephrine reuptake inhibitor, was approved for the treatment of ADHD, becoming the first nonstimulant medication specifically designed and tested for ADHD.

➔ WARNING - Methylphenidate

Use with caution in emotionally unstable clients such as those with alcohol or drug dependence because they may increase the dosage on their own. Chronic abuse can lead to marked tolerance and psychic dependence.

➔ WARNING - Pemoline

Can cause life-threatening liver failure, which can result in death or require liver transplantation in 4 weeks from the onset of symptoms. The physician should obtain written consent before the initiation of this drug.

Mechanism of Action

Amphetamines and methylphenidate are often termed *indirectly acting amines* because they act by causing release of the neurotransmitters (norepinephrine, dopamine, and serotonin) from presynaptic nerve terminals as opposed to having direct agonist effects on the postsynaptic receptors. They also block the reuptake of these neurotransmitters. Methylphenidate produces milder CNS stimulation than amphetamines; pemoline primarily affects dopamine and therefore has less effect on the sympathetic nervous system. It was originally thought that the use of methylphenidate and pemoline to treat ADHD in children produced the reverse effect of most stimulants—a calming or slowing of activity in the brain. However, this is not the case; the inhibitory centers in the brain are stimulated, so the child has greater abilities to filter out distractions and manage his or her own behavior. Atomoxetine helps block the reuptake of norepinephrine into neurons, thereby leaving more of the neurotransmitter in the synapse to help convey electrical impulses in the brain.

Dosage

For the treatment of narcolepsy in adults, both dextroamphetamine and methylphenidate are given in divided doses totaling 20 to 200 mg/day. The higher dosages may be needed because adults with narcolepsy develop tolerance to the stimulants and so require more medication to sustain improvement. Stimulant medications are also available in sustained-release preparations so that once-a-day dosing is possible. Tolerance is not seen in persons with ADHD.

The dosages used to treat ADHD in children vary widely depending on the physician; the age, weight, and behavior of the child; and the tolerance of the family for the child's behavior. Table 2.7 lists the usual dosage ranges for these stimulants. Arrangements must be made for the school nurse or another authorized adult to administer the stimulants to the child at school. Sustained-release preparations eliminate the need for additional dosing at school.

Side Effects

The most common side effects of stimulants are anorexia, weight loss, nausea, and irritability. The client should avoid caffeine, sugar, and chocolate, which may worsen these symptoms. Less common side effects include dizziness, dry mouth, blurred vision, and palpitations. The most common long-term problem with stimulants is the growth and weight suppression that occurs in some children. This can usually be prevented by taking "drug holidays" on weekends and holidays or during summer vacation, which helps restore normal eating and growth patterns. Atomoxetine can cause decreased appetite, nausea, vomiting, fatigue, or upset stomach.

Client Teaching

The potential for abuse exists with stimulants, but this is seldom a problem in children. Taking doses of stimulants after meals may minimize anorexia and nausea.

TABLE 2.7 Drugs Used to Treat Attention-Deficit/Hyperactivity Disorder

Generic (Trade) Name	Dosage
Stimulants	
Methylphenidate (Ritalin)	Adults: 20–200 mg/day, orally, in divided doses Children: 10–60 mg/day, orally, in 2–4 divided doses
Sustained release (Ritalin-SR, Concerta, Metadate-CD)	20–60 mg/day, orally, single dose
Transdermal patch (Daytrana)	Adults and children: 15 mg patch worn for 9 hours/day
Dextroamphetamine (Dexedrine)	Adults: 20–200 mg/day, orally, in divided doses Children: 5–40 mg/day, orally, in 2 or 3 divided doses
Sustained release (Dexedrine-SR)	10–30 mg/day, orally, single dose
Amphetamine (Adderall)	5–40 mg/day, orally, in divided doses
Sustained release (Adderall-SR)	10–30 mg/day, orally, single dose
Pemoline (Cylert)	Children: 37.5–112.5 mg/day, orally, single dose in the morning
Selective norepinephrine reuptake inhibitor	
Atomoxetine (Strattera)	0.5–1.5 mg/kg/day, orally, single dose

Caffeine-free beverages are suggested; clients should avoid chocolate and excessive sugar. Most important is to keep the medication out of the child's reach because as little as a 10-day supply can be fatal.

Disulfiram (Antabuse)

Disulfiram is a sensitizing agent that causes an adverse reaction when mixed with alcohol in the body. This agent's only use is as a deterrent to drinking alcohol in persons receiving treatment for alcoholism. It is useful for persons who are motivated to abstain from drinking and who are not impulsive. Five to 10 minutes after a person taking disulfiram ingests alcohol, symptoms begin to appear: facial and body flushing from vasodilation, a throbbing headache, sweating, dry mouth, nausea, vomiting, dizziness, and weakness. In severe cases, there may be chest pain, dyspnea, severe hypotension, confusion, and even death. Symptoms progress rapidly and last from 30 minutes to 2 hours. Because the liver metabolizes disulfiram, it is most effective in persons whose liver enzyme levels are within or close to normal range.

Disulfiram inhibits the enzyme aldehyde dehydrogenase, which is involved in the metabolism of ethanol. Acetaldehyde levels are then increased from five to 10 times higher than normal, resulting in the disulfiram–alcohol reaction. This reaction is potentiated by decreased levels of epinephrine and norepinephrine in the sympathetic nervous system caused by inhibition of dopamine β-hydroxylase (Virani et al., 2017). Education is extremely important for the client taking disulfiram. Many common products such as shaving cream, aftershave lotion, cologne, deodorant, and OTC medications such as cough preparations contain alcohol; when used by the client taking disulfiram, these products can produce the same reaction as drinking alcohol. The client must read product labels carefully and select items that are alcohol free.

→ WARNING - Disulfiram

Never give to a client in a state of alcohol intoxication or without the client's full knowledge. Instruct the client's relatives accordingly.

Other side effects reported by persons taking disulfiram include fatigue, drowsiness, halitosis, tremor, and impotence. Disulfiram can also interfere with the metabolism of other drugs the client is taking, such as phenytoin (Dilantin), isoniazid, warfarin (Coumadin), barbiturates, and long-acting benzodiazepines such as diazepam and chlordiazepoxide.

Acamprosate (Campral) is sometimes prescribed for persons in recovery from alcohol abuse or dependence. It helps reduce the physical and emotional discomfort encountered during the first weeks or months of sobriety, such as sweating, anxiety, and sleep disturbances. The dosage is two tablets (333 mg each) three times a day. Persons with renal impairments cannot take this drug. Side effects are reported as mild and include diarrhea, nausea, flatulence, and pruritus.

CULTURAL CONSIDERATIONS

Studies from a few years ago have shown that people from different ethnic backgrounds respond differently to certain drugs used to treat mental disorders. For example, African Americans responded more rapidly to antipsychotic medications and tricyclic antidepressants than did white people and had a greater risk for developing side effects from both these classes of drugs. Asians metabolized antipsychotics and tricyclic antidepressants more slowly than did white people and therefore required lower dosages to achieve the same effects. Although these findings may be true for some of the various racial or ethnic groups, race or ethnicity may not be primarily responsible for differing

responses. Genetic differences are more likely to provide the explanation for slower drug metabolism rather than race. As the science progresses, it may be that a person's genes can be linked with the most efficacious treatment, much like advances in cancer treatment.

As the population becomes more blended, perhaps it is not wise to rely on past data or experiences. Asking the client about past responses and experiences and being open to the possibility of differing responses may be the best approach so that nurses avoid stereotyping their expectations of clients.

Herbal medicines have been used for hundreds of years in many countries and are now being used with increasing frequency in the United States. St. John's Wort is used to treat depression and is a commonly purchased herbal product in the United States. Kava is used to treat anxiety and can potentiate the effects of alcohol, benzodiazepines, and other sedative–hypnotic agents. Valerian helps produce sleep and is sometimes used to relieve stress and anxiety. Ginkgo biloba is primarily used to improve memory but is also taken for fatigue, anxiety, and depression.

It is essential for the nurse to ask clients specifically if they use any herbal preparations. Clients may not consider these products "medicine" or may be reluctant to admit their use for fear of censure by health professionals. Herbal medicines are often chemically complex and are not standardized or regulated for use in treating illnesses. Combining herbal preparations with other medicines can lead to unwanted interactions, so it is essential to assess all clients' use of these products.

BEST PRACTICE: Metabolic Syndrome Severity Screening Bundle

Second-generation antipsychotics are known to have increased risks associated with metabolic syndrome. Although screening for metabolic syndrome has improved, there is no standard way to assess severity. Development of a tool and formula to gauge the severity of metabolic syndrome has been piloted and validated. The next step is to include the use of the tool to assess severity of metabolic syndrome in order to guide more effective treatment for clients.

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SELF-AWARENESS ISSUES

Nurses must examine their own beliefs and feelings about mental disorders as illnesses and the role of drugs in treating mental disorders. Some nurses may be skeptical about some mental disorders and may believe that clients could gain control of their lives if they would just put forth enough effort. Nurses who work with clients with mental disorders come to understand that many disorders are similar to chronic physical illnesses such as asthma or diabetes, which require lifelong medication to maintain health. Without proper medication management, clients with certain mental disorders, such as schizophrenia or bipolar affective disorder, cannot survive in and cope with the world around them. The nurse must explain to the client and family that this is an illness that requires continuous medication management and follow-up, just like a chronic physical illness.

It is also important for the nurse to know about current biologic theories and treatments. Many clients and their families will have questions about reports in the news about research or discoveries. The nurse can help them distinguish between what is factual and what is experimental. Also, it is important to keep discoveries and theories in perspective.

Clients and families need more than factual information to deal with mental illness and its effects on their lives. Many clients do not understand the nature of their illness and ask, "Why is this happening to me?" They need simple but thorough explanations about the nature of the illness and how they can manage it. The nurse must learn to give out enough information about the illness while providing the care and support needed by all those confronting mental illness.

Points to Consider When Working on Self-Awareness

- Chronic mental illness has periods of remission and exacerbation just like chronic physical illness. A recurrence of symptoms is not the client's fault, nor is it a failure of treatment or nursing care.
- Research regarding the neurobiologic causes of mental disorders is still in its infancy. Do not dismiss new ideas just because they may not yet help in the treatment of these illnesses.
- Often, when clients stop taking medication or take medication improperly, it is not because they intend to; rather, it is the result of faulty thinking and reasoning, which is part of the illness.

CRITICAL THINKING QUESTIONS

1. It is possible to identify a gene associated with increased risk for the late onset of Alzheimer disease. Should this test be available to anyone who requests it? Why or why not? What dilemmas might arise from having such knowledge?
2. What types of programs or services are needed to address the physical health of clients with mental illness? What would be an effective plan to help clients avoid metabolic syndrome?

3. How would the nurse respond to client or family questions about the cause of the client's mental illness? How will the nurse explain this information in a meaningful way?

KEY POINTS

- Neurobiologic research is constantly expanding our knowledge in the field of psychiatry and is significantly affecting clinical practice.
- The cerebrum is the center for coordination and integration of all information needed to interpret and respond to the environment.
- The cerebellum is the center for coordination of movements and postural adjustments.
- The brain stem contains centers that control cardiovascular and respiratory functions, sleep, consciousness, and impulses.
- The limbic system regulates body temperature, appetite, sensations, memory, and emotional arousal.
- Neurotransmitters are the chemical substances manufactured in the neuron that aid in the transmission of information from the brain throughout the body. Several important neurotransmitters including dopamine, norepinephrine, serotonin, histamine, acetylcholine, GABA, and glutamate have been found to play a role in mental disorders and are targets of pharmacologic treatment.
- Researchers continue to examine the roles of genetics, heredity, and viruses in the development of mental illness.
- Pharmacologic treatment is based on the ability of medications to eliminate or minimize identified target symptoms.
- The following factors must be considered in the selection of medications to treat mental disorders: the efficacy, potency, and half-life of the drug; the age and race of the client; other medications the client is taking; and the side effects of the drugs.
- Antipsychotic drugs are the primary treatment for psychotic disorders such as schizophrenia, but they produce a host of side effects that may also require pharmacologic intervention. Neurologic side effects, which can be treated with anticholinergic medications, are called EPSs and include acute dystonia, akathisia, and pseudoparkinsonism. Some of the more serious neurologic side effects include TD (permanent involuntary movements) and NMS, which can be fatal.
- Because of the serious side effects of antipsychotic medications, clients must be well educated regarding their medications, medication compliance, and side effects. Health care professionals must closely supervise the regimen.
- Antidepressant medications include cyclic compounds, SSRIs, MAOIs, and a group of newer drugs.
- The nurse must carefully instruct clients receiving MAOIs to avoid foods containing tyramine because the combination produces a hypertensive crisis that can become life-threatening.
- The risk for suicide may increase as clients begin taking antidepressants. Although suicidal thoughts are still present, the medication may increase the client's energy, which may allow the client to carry out a suicide plan.
- Lithium and selected anticonvulsants are used to stabilize mood, particularly in bipolar affective disorder.
- The nurse must monitor serum lithium levels regularly to ensure the level is in the therapeutic range and to avoid lithium toxicity. Symptoms of toxicity include severe diarrhea and vomiting, drowsiness, muscle weakness, and loss of coordination. Untreated, lithium toxicity leads to coma and death.
- Benzodiazepines are used to treat a wide variety of problems related to anxiety and insomnia. Clients taking them should avoid alcohol, which increases the effects of benzodiazepines.
- The primary use of stimulants such as methylphenidate (Ritalin) is the treatment of children with ADHD. Methylphenidate has proved successful in allowing these children to slow down their activity and focus on the tasks at hand and their school work. Its exact mechanism of action is unknown.
- Clients from various cultures may metabolize medications at different rates and therefore require alterations in standard dosages.
- Assessing use of herbal preparations is essential for all clients.

Unfolding Patient Stories: D.C. • Part 1

D.C., is a 28-year-old male with schizophrenia. He became violent and was brought to the emergency room with paranoid delusions and auditory hallucinations. During admission, he was alternately agitated and withdrawn. Medications ordered include: olanzapine 10 mg orally daily, venlafaxine 75 mg XR orally daily, lorazepam 2 mg orally every 8 hours as needed for agitation, and haloperidol 5 mg orally every 8 hours as needed for agitation. Describe the classification, action, dosing, and side effects for each medication. What monitoring should the nurse consider for each medication and when administering the as needed medications? What client teaching should the nurse provide when administering the medications while considering D.C. alternate states of agitation and withdrawal?

Care for D.C. and other patients in a realistic virtual environment: ***vSim*** *for Nursing* (http://thepoint.lww.com/vSimMentalHealth). Practice documenting these patients' care in DocuCare (thepoint.lww.com/DocuCareEHR).

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Chapter Study Guide

MULTIPLE CHOICE QUESTIONS

Select the best answer for each.

1. The nurse is teaching a client taking an MAOI about foods with tyramine that he or she should avoid. Which statement indicates that the client needs further teaching?
   a. "I'm so glad I can have pizza as long as I don't order pepperoni."
   b. "I will be able to eat cottage cheese without worrying."
   c. "I will have to avoid drinking nonalcoholic beer."
   d. "I can eat green beans on this diet."

2. A client who has been depressed and suicidal started taking a tricyclic antidepressant 2 weeks ago and is now ready to leave the hospital to go home. Which is a concern for the nurse as discharge plans are finalized?
   a. The client may need a prescription for diphenhydramine (Benadryl) to use for side effects.
   b. The nurse will evaluate the risk for suicide by overdose of the tricyclic antidepressant.
   c. The nurse will need to include teaching regarding the signs of neuroleptic malignant syndrome.
   d. The client will need regular laboratory work to monitor therapeutic drug levels.

3. The signs of lithium toxicity include which?
   a. Sedation, fever, and restlessness
   b. Psychomotor agitation, insomnia, and increased thirst
   c. Elevated WBC count, sweating, and confusion
   d. Severe vomiting, diarrhea, and weakness

4. Which is a concern for children taking stimulants for ADHD for several years?
   a. Dependence on the drug
   b. Insomnia
   c. Growth suppression
   d. Weight gain

5. The nurse is caring for a client with schizophrenia who is taking haloperidol (Haldol). The client complains of restlessness, cannot sit still, and has muscle stiffness. Of the following prn medications, which would the nurse administer?
   a. Haloperidol (Haldol), 5 mg PO
   b. Benztropine (Cogentin), 2 mg PO
   c. Propranolol (Inderal), 20 mg PO
   d. Trazodone, 50 mg PO

6. Client teaching for lamotrigine (Lamictal) should include which instructions?
   a. Eat a well-balanced diet to avoid weight gain.
   b. Report any rashes to your doctor immediately.
   c. Take each dose with food to avoid nausea.
   d. This drug may cause psychological dependence.

7. Which physician order would the nurse question for a client who has stated, "I'm allergic to phenothiazines?"
   a. Haldol, 5 mg PO bid
   b. Navane, 10 mg PO bid
   c. Prolixin, 5 mg PO tid
   d. Risperdal, 2 mg bid

8. Clients taking which type of psychotropic medications need close monitoring of their cardiac status?
   a. Antidepressants
   b. Antipsychotics
   c. Mood stabilizers
   d. Stimulants

FILL-IN-THE-BLANK QUESTIONS

Identify the drug classification for each medication.

1. _____ Clozapine (Clozaril)
2. _____ Fluoxetine (Prozac)
3. _____ Amitriptyline (Elavil)
4. _____ Benztropine (Cogentin)

5. _____Methylphenidate (Ritalin)
6. _____Carbamazepine (Tegretol)
7. _____ Clonazepam (Klonopin)
8. _____ Quetiapine (Seroquel)

SHORT ANSWER QUESTIONS

1. Explain the rationale for tapering psychotropic medication doses before the client discontinues the drug.

2. Describe the teaching needed for a client who is scheduled for PET.

3. Explain the kindling process as it relates to the manic episodes of bipolar affective disorder.

CHAPTER 3
Psychosocial Theories and Therapy

KEY TERMS

- alternative medicine
- behavior modification
- behaviorism
- client-centered therapy
- closed groups
- cognitive therapy
- complementary medicine
- countertransference
- crisis
- crisis intervention
- dream analysis
- education group
- ego
- ego defense mechanisms
- family therapy
- free association
- group therapy
- hierarchy of needs
- humanism
- id
- individual psychotherapy
- integrative medicine
- milieu therapy
- negative reinforcement
- open groups
- operant conditioning
- parataxic mode
- participant observer
- positive reinforcement
- prototaxic mode
- psychiatric rehabilitation
- psychoanalysis
- psychosocial interventions
- psychotherapy group
- self-actualization
- self-help group
- subconscious
- superego
- support groups
- syntaxic mode
- systematic desensitization
- therapeutic community or milieu
- therapeutic nurse–patient relationship
- transference

LEARNING OBJECTIVES

After reading this chapter, you should be able to:

1. Explain the basic beliefs and approaches of the following psychosocial theories: psychoanalytic, developmental, interpersonal, humanistic, behavioral, existential, and crisis intervention.
2. Describe the following psychosocial treatment modalities: individual psychotherapy, group psychotherapy, family therapy, behavior modification, systematic desensitization, token economy, self-help groups, support groups, education groups, cognitive therapy, milieu therapy, and psychiatric rehabilitation.
3. Identify the psychosocial theory on which each treatment strategy is based.
4. Identify how several of the theoretical perspectives have influenced current nursing practice.

INTRODUCTION

Today's mental health treatment has an eclectic approach, meaning one that incorporates concepts and strategies from a variety of sources. This chapter presents an overview of major psychosocial theories, highlights the ideas and concepts in current practice, and explains the various psychosocial treatment modalities. The psychosocial theories have produced many models currently used in individual and group therapy and various treatment settings. The medical model of treatment is based on the neurobiologic theories discussed in Chapter 2.

PSYCHOSOCIAL THEORIES

Many theories attempt to explain human behavior, health, and mental illness. Each theory suggests how normal

development occurs based on the theorist's beliefs, assumptions, and view of the world. These theories suggest strategies that the clinician can use to work with clients. Many theories discussed in this chapter were not based on empirical or research evidence; rather, they evolved from individual experiences and might more appropriately be called conceptual models or frameworks.

This chapter discusses the following types of psychosocial theories:

- Psychoanalytic
- Developmental
- Interpersonal
- Humanistic
- Behavioral
- Existential

Psychoanalytic Theories

Sigmund Freud: The Father of Psychoanalysis

Sigmund Freud (1856–1939; Fig. 3.1) developed psychoanalytic theory in the late 19th and early 20th centuries in Vienna, where he spent most of his life. Several other noted psychoanalysts and theorists have contributed to this body of knowledge, but Freud is its undisputed founder. Many clinicians and theorists did not agree with much of Freud's psychoanalytic theory and later developed their own theories and styles of treatment.

Psychoanalytic theory supports the notion that all human behavior is caused and can be explained (deterministic theory). Freud believed that *repressed* (driven from conscious awareness) sexual impulses and desires motivate much human behavior. He developed his initial ideas and explanations of human behavior from his experiences with a few clients, all of them women who displayed unusual behaviors such as disturbances of sight and speech, inability to eat, and paralysis of limbs. These symptoms had no diagnosed physiologic basis, so Freud considered them to be "hysterical" or neurotic behaviors of women. After several years of working with these women, Freud concluded that many of their problems resulted from childhood trauma or failure to complete tasks of psychosexual development. These women repressed their unmet needs and sexual feelings as well as traumatic events. The "hysterical" or neurotic behaviors resulted from these unresolved conflicts.

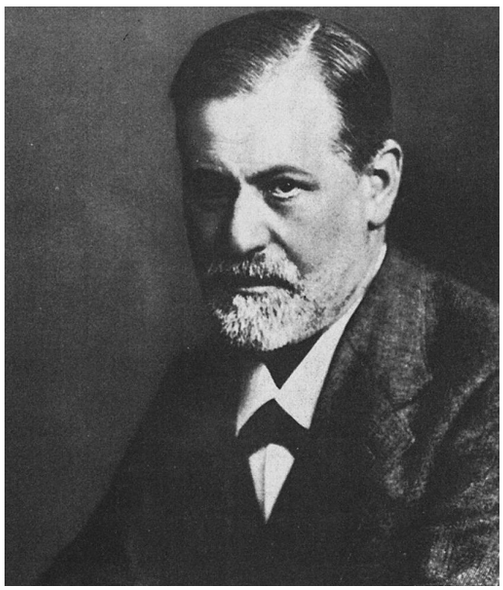
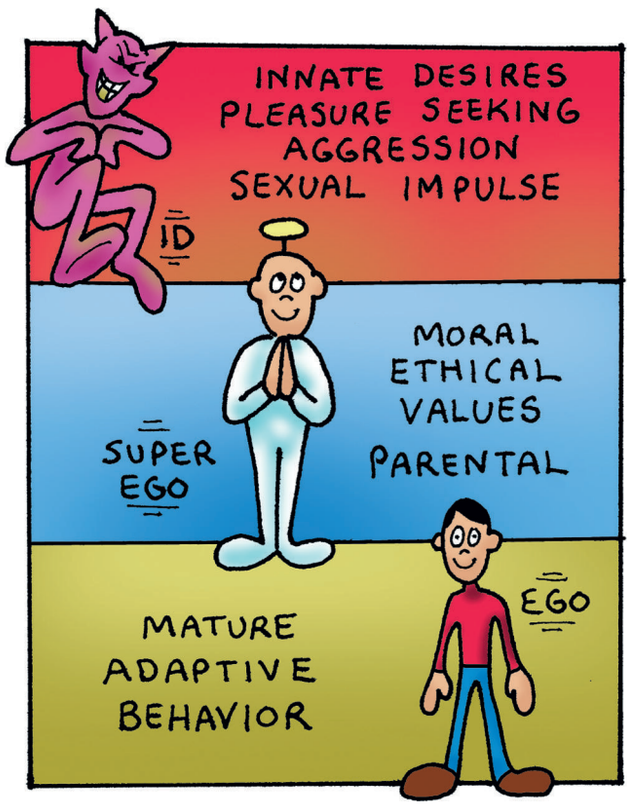


FIGURE 3.1. Sigmund Freud—the father of psychoanalysis.

Personality Components: Id, Ego, and Superego. Freud conceptualized personality structure as having three components: the id, ego, and superego (Freud, 1923, 1962). The **id** is the part of one's nature that reflects basic or innate desires such as pleasure-seeking behavior, aggression, and sexual impulses. The id seeks instant gratification, causes impulsive unthinking behavior, and has no regard for rules or social convention. The **superego** is the part of a person's nature that reflects moral and ethical concepts, values, and parental and social expectations; therefore, it is in direct opposition to the id. The third component, the **ego**, is the balancing or mediating force between the id and the superego. The ego represents mature and adaptive behavior that allows a person to function successfully in the world. Freud believed that anxiety resulted from the ego's attempts to balance the impulsive instincts of the id with the stringent rules of the superego.



Freud's components of personality