

Lueckenotte, A.G. (2000-2nd edition). *Gerontologic Nursing*. St. Louis: Mosby.

Chapter 2

Theories of Aging

www.mosby.com/MERLIN/geront_Lueckenotte

LEARNING OBJECTIVES

On completion of this chapter, the reader will be able to:

1. Define aging from a biologic, sociologic, and psychologic framework.
2. Analyze the prominent biologic, sociologic, and psychologic theories of aging.
3. Discuss the rationale for using an eclectic approach in the development of aging theories.
4. Develop nursing interventions based on the psychosocial issues and biologic changes associated with older adulthood.
5. Discuss several nursing implications for each of the major biologic, sociologic, and psychologic theories of aging.

Western society has been formulating and debating theories of aging since the time of the ancient Greeks. We have sought to embrace a theory that can explain the entire phenomenon. Recently, however, many scholars have concluded this quest to be in vain and that no such "one" definition or theory exists that explains all aspects of aging. Rather, scientists have found that several theories may be combined to explain various aspects of the complex phenomena we call aging (Gerhard, Cristofalo, 1992; Hayflick, 1996).

Theories function to help make sense of a particular phenomenon; they provide a sense of order and give a perspective from which to view the facts. Theories provide a springboard for discussion and research. Some of the theories presented in this chapter are presented because of their historical value; for the most part, they have been abandoned due to lack of empirical evidence. Other theories are the result of ongoing advances made in biotechnology and, as such, provide glimpses into our future.

Human aging is influenced by a composite of biologic, psychologic, social, functional, and spiritual factors. Aging may be viewed as a continuum of events that occur from conception to death (Ignatavicius, Workman, Mishler, 1999). Biologic, social, and psychologic theories of aging attempt to explain and explore the various dimensions of aging. This chapter explores the *prominent theories* of aging as a guide for developing a holistic gerontologic nursing theory for practice application. No single gerontologic

nursing theory has been accepted by this specialty, which requires nurses to use an eclectic approach from other disciplines as the basis of clinical decision making (Comfort, 1970) (Box 2-1).

By incorporating a holistic approach to the care of older adults, nurses can view this ever-increasing portion of the population more comprehensively. Interactions between gerontologic nurses and older adults are not limited to a specific disease or physiologic process, absolute developmental tasks, or psychosocial changes. Nurses have the ability to synthesize various aspects of the different aging theories, and they visualize older adults interfacing with their total environment, including physical, mental/emotional, social, and spiritual aspects. Therefore an eclectic approach provides an excellent foundation when planning quality care for older adults.

Theories of aging attempt to explain this phenomenon of aging as it occurs over the lifespan, which is thought to be a maximum of approximately 120 years (Cetron, Owen, 1998). Several basic assumptions and concepts have been accepted over the years as guiding research and clinical practice related to this phenomenon of aging. Human aging is viewed as a total process that begins at conception. Because individuals have uniquely different genetic, social, psychologic, and economic factors intertwined in their lives, the course of aging varies from individual to individual. *Senescence*, de-



Box 2-1

Theories of Aging**Biologic**

Concerned with answering basic questions regarding physiologic processes that occur in all living organisms over time (Hayflick, 1996).

Sociologic

Focused on the roles and relationships within which individuals engage in later life (Hogstel, 1995).

Psychologic

Influenced by both biology and sociology and address how a person responds to the tasks of their age.

Moral/Spiritual

Examine how an individual seeks to explain and validate their existence (Edelman, Mandel, 1998).

defined as a change in the behavior of an organism with age, leading to a decreased power of survival and adjustment, occurs as well. It is the recognition of the universal truths that we attempt to discover through the theories of aging.

BIOLOGIC THEORIES OF AGING

Biologic theories are concerned with answering basic questions regarding the physiologic processes that occur in all living organisms as they chronologically age. These age-related changes occur independently of any external or pathologic influence. The primary question being addressed relates to the factors that trigger the actual aging process in organisms. These theories generally view aging as occurring from a molecular, cellular, or even a systems point of view. Additionally, biologic theories are not meant to be exclusionary. Theories may be combined to explain phenomena (Hayflick, 1996).

The foci of biologic theories include explanations of the following: (1) deleterious effects leading to decreasing function of the organism; (2) gradually occurring age-related changes that are progressive over time; and (3) intrinsic changes that can affect all members of a species because of chronologic age. The decreasing function of an organism may lead to a complete failure of either an organ or an entire system. (Hayflick, 1996). In addition, according to these theories, all organs in any one organism do not age at the same rate, and any single organ does not necessarily age at the same rate in different individuals of the same species.

The biologic theories can be subdivided into two main divisions, stochastic and nonstochastic. Stochastic theories explain aging as events that occur randomly and accumulate over time, while nonstochastic theories view aging as certain predetermined, timed phenomena (Box 2-2).



Box 2-2

Biologic Theories of Aging**Stochastic Theories***Error Theory*

The error theory is based on the idea that errors can occur in the transcription of the synthesis of DNA. These errors are perpetuated and eventually lead to systems that do not function at the optimal level. The organism's aging and death are attributable to these events (Sonneborn, 1979).

Free Radical Theory

Free radicals are byproducts of metabolism. When these byproducts accumulate, they damage the cell membrane, which decreases its efficiency. The body produces antioxidants that scavenge the free radicals (Hayflick, 1996).

Cross-Linkage Theory

With age, it has been theorized that some proteins in the body become cross-linked. This does not allow for normal metabolic activities, and waste products accumulate in the cells. The end result is that tissues do not function at optimal efficiency (Hayflick, 1996).

Wear and Tear Theory

The wear and tear theory equates man with machine. It hypothesizes that aging is the result of use.

Nonstochastic Theories*Programmed Theory*

Hayflick and Moorehead demonstrated that normal cells divide a limited number of times; therefore it was hypothesized that life expectancy was preprogrammed (Hayflick, 1996).

Immunity Theory

Changes occur in the immune system, most specifically with the T-lymphocytes, as a result of aging. These changes leave the individual more vulnerable to disease (Phipps, Sands, Marek, 1999).

Stochastic Theories*Error Theory*

As a cell ages, various changes occur naturally in its deoxyribonucleic acid (DNA) and ribonucleic acid (RNA), the building blocks of the cell. DNA, found in the nucleus of the cell, contains the fundamental genetic code and forms the genes on all 46 human chromosomes (Black, Matassarini-Jacobs, 1997).

In 1963, Orgel proposed the Error Theory, sometimes called the Error Catastrophe Theory. The hypothesis of this theory is based on the idea that errors can occur in the transcription in any step of protein synthesis of DNA, and this eventually leads to either the aging or the actual death of a cell. The error would cause the reproduction of an enzyme or protein that was not an exact copy of the original. The next transcription would again contain an error. As the effect continued through several generations of

proteins, the end product would not even resemble the original cell and its functional ability would be diminished. (Sonneborn, 1979).

In recent years, the theory has not been supported by research. Although changes do occur in the activity of various enzymes with aging, studies have not found that all aged cells contain altered or misspecified proteins, nor is aging automatically or necessarily accelerated if misspecified proteins or enzymes are introduced to a cell (Hayflick, 1996; Goldstein, 1993; Schneider, 1992).

Free Radical Theory

Free radicals are byproducts of fundamental metabolic activities within the body. Free radical production can increase as a result of environmental pollutants such as ozone, pesticides, and radiation. Normally, they are neutralized by enzymatic activity or natural antioxidants. If, however, they are not neutralized, they may attach to other molecules. These highly reactive free radicals react with molecules in cell membranes, in particular cell membranes of unsaturated lipids such as mitochondria, lysosomes, and nuclear membranes. This action monopolizes the receptor sites on the membrane, thereby inhibiting the interaction with other substances that normally use this site; this chemical reaction is called lipid peroxidation. Therefore the mitochondria, for example, can no longer function as efficiently, and their cell membranes may become damaged, resulting in increased permeability. If excessive fluid is either lost or gained, the internal homeostasis is disrupted and cell death may result.

There are other deleterious results related to free radical molecules in the body. Although these molecules do not contain DNA themselves, they can cause mutations to occur in the DNA-RNA transcription, thereby producing mutations of the original protein. In nervous and muscle tissue, to which free radicals have a high affinity, a substance called lipofuscin has been found and is thought to be indicative of chronologic age.

Lipofuscin, a lipid- and protein-enriched pigmented material, has been found to accumulate in older adults' tissues, and is commonly referred to as "age spots." As the lipofuscin's presence increases, healthy tissue is slowly being deprived of oxygen and nutrient supply. Further degeneration of surrounding tissue eventually leads to the actual death of the tissue. The body does have naturally occurring antioxidants or protective mechanisms. Vitamins C and E are two of these substances that can inhibit the functioning of the free radicals or possibly decrease their production in the body.

Harman (1956) was the first to suggest that the administration of chemicals terminating the propagation of free radicals would extend the lifespan or delay the aging process. Animal research has demonstrated that administration of antioxidants did increase the average length of life, possibly due to the delayed appearance of diseases that may have eventually killed the animals studied. It appears that administration of antioxidants postpones the

appearance of diseases such as cardiovascular disease and cancer, two of the most common causes of death. It appears that antioxidants also have an effect on the decline of the immune system and on degenerative neurologic diseases, both of which affect morbidity and mortality (Hayflick, 1996; Yu, 1998, 1993).

Cross-Linkage Theory

The cross-link theory of aging hypothesizes that with age some proteins become increasingly cross-linked or enmeshed and may impede metabolic processes by obstructing the passage of nutrients and wastes between the intracellular and extracellular compartments. According to this theory, normally separated molecular structures are bound together through chemical reactions. Primarily this involves collagen, which is a relatively inert long-chain macromolecule produced by fibroblasts. As new fibers are created, they become enmeshed with old fibers and form an actual chemical cross-link. The end result of this cross-linkage process is an increase in density of the collagen molecule but a decrease in the capacity to transport nutrients to, and to remove waste products from, the cells. Eventually, this results in a decrease in the function of the structure. An example of this would be the changes associated with aging skin. The skin of a baby is very soft and pliable, whereas the aging skin loses much of its suppleness and elasticity. This aging process is similar to the process of tanning leather, which purposefully creates cross-links (Bjorkstein, 1976; Hayflick, 1996).

Cross-linkage agents have been found in unsaturated fats; in polyvalent metal ions like aluminum, zinc, and magnesium; and in association with excessive radiation exposure. Many of the medications ingested by the older population contain aluminum (antacids and coagulants), as does the common cooking ingredient baking powder. Some research supports a combination of exercise and dietary restrictions in helping to inhibit the cross-linkage process, as well as the use of vitamin C prophylactically as an antioxidant agent (Bjorkstein, 1976).

Cerani has shown that blood sugar reacts with bodily proteins to form cross-links. He has found that the crystallins of the lens of the eye, membranes of the kidney, and blood vessels are especially susceptible to cross-linking under the conditions of increased glucose. Cerani suggests increased levels of blood glucose cause increased amounts of cross-linking which accelerate lens, kidney, and blood vessel diseases (Schneider, 1992).

Cross-linkage theory proposes that as a person ages and the immune system begins to decrease in its efficiency, the body's defense mechanism cannot remove the cross-linking agent before it becomes securely established. Cross linkage has been proposed as a primary cause of arteriosclerosis, a decrease in efficiency of the immune system with age, and the loss of elasticity often seen in older adult skin. The cross-link theory has emerged from deductive reasoning and other than the previous examples, there is little empirical evidence to support its claims (Hayflick, 1996).

Wear and Tear Theory

This theory proposed that cells wear out over time because of continued use. When this theory was first proposed in 1882 by Weisman, death was seen as a result of tissues being worn out because they could not rejuvenate themselves in an endless manner (Hayflick, 1988). Essentially, the theory reflects a belief that organs and tissues have a preprogrammed amount of energy available to them and eventually wear out when the allotted energy is expended. Eventually, this leads to the death of the entire organism.

Under this theory, aging is viewed as almost a preprogrammed process—a process thought to be vulnerable to stress, or an accumulation of injuries or trauma, which may actually accelerate it. “Death,” said Weisman, “occurs because a worn out tissue cannot forever renew itself” (Hayflick, 1996).

Proponents of this theory cite microscopic signs of wear and tear that have been found in striated and smooth muscle tissue and in nerve cells. Researchers question this theory with research demonstrating increased functional abilities in individuals that participate in daily exercise. This effect occurs even in persons with chronic limiting states such as rheumatoid arthritis. If exercise has been found to increase a person’s level of functioning rather than decrease it, critics challenge, how can the wear and tear hypothesis be correct? The time frame for the development of this theory was during the Industrial Revolution, when people were attempting to explain and make sense of events in their world. These people were trying to equate men with the marvelous machines they were producing. It eventually became clearly evident just how different man was from these machines.

Nonstochastic Theories

Programmed Theory or Hayflick Limit Theory

One of the first proposed biologic theories is based on a study completed in 1961 by Hayflick and Moorehead. This particular study included an experiment on fetal fibroblastic cells and their reproductive capabilities. The results of this landmark study changed the way scientists viewed the biologic aging process.

Hayflick and Moorehead’s study showed that there are functional changes that do occur within cells and are responsible for the aging of the cells and the organism. The study further supported the hypothesis that a cumulative effect of improper functioning of cells and eventual loss of cells in organs and tissues is therefore responsible for the “aging phenomenon.” This study contradicted earlier studies by Carrel and Ebeling in which chick embryo cells were able to be kept alive indefinitely in a laboratory setting; the conclusion from this 1912 experiment was that cells do not wear out, but continue to function normally forever. An interesting aspect of the 1961 study was that freezing was found to halt the biologic cellular clock (Hayflick, Moorehead, 1961).

Based on this 1961 study, unlimited cell division was not found to occur; the immortality of individual cells was

found to be more an abnormal than a normal occurrence. Therefore this study seemed to support the Hayflick Limit Theory. Life expectancy was generally seen as preprogrammed, within a species-specific range; this biologic clock for humans was estimated at 110 to 120 years (Gerhard, Cristofalo, 1992; Hayflick, 1996). Based on the conclusions of this experiment, the Hayflick Limit Theory is sometimes called the “Biological Clock,” “Cellular Aging,” or “Genetic Theory.”

Immunity Theory

The immune system is a network of specialized cells, tissues, and organs that provide the body with protection against invading organisms. Its primary role is to differentiate self from non-self, thereby protecting the organism from attack by pathogens. It has been found that as a person ages, the immune system functions less effectively. The term *immunosenescence* has been given to this age-related decrease in function.

Essential components of the immune system are T cells, which are responsible for cell-mediated immunity, and B cells, the antibodies responsible for humoral immunity. Both T and B cells may respond to an invasion of the organism, though one may provide more protection in certain situations. The changes that occur with aging are most apparent in the T-lymphocytes, although changes also occur in the functioning capabilities of B-lymphocytes. Accompanying these changes is a decrease in the body’s defense against foreign pathogens, which manifests itself as an increased incidence of infectious diseases and an increase in the production of autoantibodies, which lead to a propensity to develop autoimmune-related diseases (Hayflick, 1996) (Box 2-3).

The changes occurring in the immune system cannot precisely be explained by an exact cause-and-effect relationship, but they do seem to increase with advancing age. These changes include a decrease in humoral immune



Box 2-3

Changes in Cell-Mediated Immune Function as a Result of Aging

- Increased autoantibodies as a result of altered immune system regulation. This predisposes an individual to autoimmune diseases such as lupus and rheumatoid arthritis.
- Low rate of T-lymphocyte proliferation in response to a stimulus. This causes older adults to respond more slowly to allergic stimulants.
- Reduced response to foreign material, resulting in an increased number of infections. This is a result of a decrease in cytotoxic or killer T cells.
- Generalized T cell dysfunctions, which reduce the response to certain viral antigens, allografts, and tumor cells. This results in an increased incidence of cancer in older adults.

response, often predisposing older adults to: (1) a decreased resistance to a tumor cell challenge and the development of cancer, (2) a decreased ability to initiate the immune process and mobilize the body's defenses in aggressively attacking pathogens, and (3) a heightened production of autoantigens, often leading to an increase in autoimmune-related diseases.

Immunodeficient conditions, such as the human immunodeficiency virus (HIV) and the immune suppression of organ transplant recipients, have demonstrated a relationship between immunocompetence and cancer development. HIV has been associated with several forms of cancer, such as Kaposi's sarcoma. Recipients of organ transplants are 80 times more likely to contract cancer than the rest of the population (Black, Matarassian-Jacobs, 1997).

Emerging Theories

Neuroendocrine Control or Pacemaker Theory

The neuroendocrine theory examines the interrelated role of the neurologic and endocrine systems over the life-span of an individual. The neuroendocrine system regulates and controls many important metabolic activities. It has been observed that there is a decline, or even a cessation, in many of the components of the neuroendocrine system over the lifespan. The reproductive system, and its changes over the life of an individual, provides an interesting model for the functional capability of the neuroendocrine system.

Research has shown that there are complex interactions between the endocrine and the nervous systems. It appears that the female reproductive system is governed not by the ovaries or the pituitary gland but by the hypothalamus. Men do not experience a reproductive event such as a menopause, though they do demonstrate a decline in fertility. The mechanisms that trigger this decline may offer a template for understanding the phenomena of aging (Hayflick, 1996).

Another hormone that has been receiving attention is dehydroepiandrosterone (DHEA). This hormone, secreted by the adrenal glands, diminishes over the lifetime of an individual. Administration of this hormone to laboratory mice showed it increased longevity, bolstered immunity, and made the animals appear younger. These mice also ate less, so there is some question of whether DHEA-fed mice exhibit the effect of calorie restriction (Cupp, 1997; Guardiola-Lemaitre, 1997; Hayflick, 1996; Kendler, 1997).

Melatonin is a hormone that is being investigated for its role as a biologic clock. Melatonin is produced by the pineal gland, the function of which had been a mystery until recent times. Melatonin has been found to be a regulator of biologic rhythms and a powerful antioxidant that may enhance immune function. The level of melatonin production in the body declines dramatically from just after puberty until old age.

The belief that melatonin has a role in aging comes not only from its effect on the immune system and its antiox-

idant capability, but also from studies on rodents that demonstrated an increased lifespan when melatonin was administered to these animals. In this instance as well it was found that rodents fed supplementary melatonin restricted their calorie intake. More research needs to be performed regarding the safety and efficacy of melatonin. However, in the United States melatonin can already be sold as a dietary supplement, so there is little financial benefit in conducting research. In Europe melatonin is considered a neurohormone, so there would be more financial gain to determining its role in the aging process. At this time, no individual should take melatonin without their primary health care provider's knowledge (Guardiola-Lemaitre, 1997; Hayflick, 1996).

Metabolic Theory of Aging/Caloric Restriction

This theory proposes that all organisms have a finite amount of metabolic lifetime and that organisms with a higher metabolic rate have a shorter lifespan. Evidence for this theory comes from research that has shown that certain fish, when the water temperature is lowered, live longer than their warm water counterparts. Extensive experimentation on the effects of caloric restriction on rodents has demonstrated that caloric restriction increases the lifespan and delays the onset of age-dependent diseases (Hayflick, 1996; Schneider, 1992).

DNA-Related Research

Two major developments are occurring at the time of this writing in relation to our understanding of the role DNA plays in the aging process. The first involves the process of mapping, or identification of the human genome, with the hope that this task will be accomplished early in the twenty-first century. It is believed that there may be as many as 200 genes responsible for controlling aging in humans (Schneider, 1992). Investigation into the "aging" genes in select body systems, such as the immune system, may lead to a greater understanding of the process of aging (Fig. 2-1).

The second development that has occurred is in relation to the discovery of telomeres, which are the regions at the ends of chromosomes that may function as biologic clocks. It has been found that with each cell division that takes place in cultured, normal human cells, part of the telomere is lost. This discovery explains why normal cells have a limited capacity to divide. Abnormal cells, such as cancer cells, seem to have found a way to keep from shortening at each division, which confers a type of "immortality" upon them. It has been found that these "abnormal" cells produce an enzyme called telomerase. The enzyme telomerase actually adds telomere sequences to the ends of each chromosome at each cell division. The immediate benefit of this discovery was the development of tests to detect the enzyme telomerase, therefore identifying abnormal cells. Research is proceeding to develop substances that would inhibit the production of telomerase in an effort to prevent cancer cells from continuing

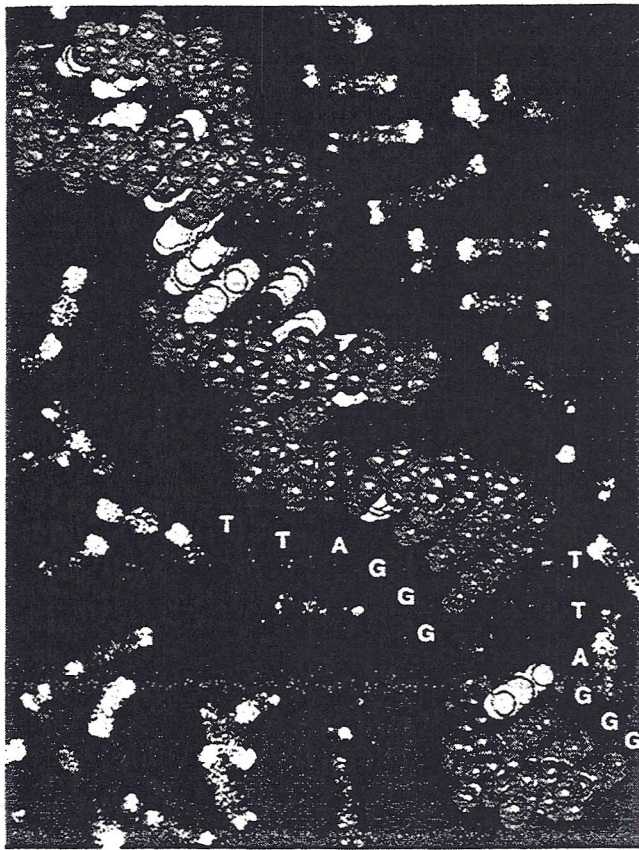


Fig. 2-1 A DNA model against a background of chromosomes. The light ends on the chromosomes are telomeres. (Used with permission from The University of Texas Southwestern Medical Center at Dallas; Office of News and Publications; 5323 Harry Hines Boulevard; Dallas, TX 75235; <http://www.sciam.com/explorations/1998/020298telomere>.)

to multiply (Gupta, Han, 1996; Hayflick, 1996; Keys, Marble, 1998) (Box 2-4).

Implications for Nursing

When interacting with the older population, it is important to relate the key concepts of the biologic theories to the care being provided. Although these theories do not provide *the answer*, they certainly can provide an explanation for some of the changes seen in the aging individual. Aging and disease do not necessarily go hand in hand, and the nurse caring for older adults needs to have a clear understanding of the difference between age-related changes and those that may actually be pathologic. Nurses must remember that scientists are still in the process of discovering what is "normal" aging.

When considering biologic theories of aging, two concepts have gained wide acceptance: (1) there may be a limited replicative capacity for certain cells that causes overexpression of damaged genes and oxidative damage to cells, and (2) free radicals may cause damage to cells over time. Based on these concepts, gerontologic nurses can promote the health of older adult clients in a number of ways. Providing assistance with smoking cessation would be one ex-



Box 2-4

Emerging Theories of Aging

Neuroendocrine Control or Pacemaker Theory

The neuroendocrine system controls many essential activities with regard to growth and development. Scientists are studying the roles that the hypothalamus and the hormones DHEA (dehydroepiandrosterone) and melatonin play in the aging process (Guardiola-Lemaitre, 1997; Hayflick, 1996).

Metabolic Theory of Aging/Caloric Restriction

The role of metabolism with regards to the aging process is being investigated (Hayflick, 1996).

DNA-Related Research

There are two developments that are occurring at this time in relationship to DNA and the aging process. First, as scientists continue to map the human genome, certain genes are being identified as playing a role in the aging process (Schneider, 1992). Second is the discovery of telomeres, located at the ends of chromosomes, which may function as the cells' biologic clocks (Hayflick, 1996).

ample of health promotion. Cigarette smoking causes increased cell turnover in the oral cavity, bronchial tree, and alveoli. Smoking also introduces carcinogens in the body that may result in an increased rate of cell damage that can lead to cancer. Using the same principles, a health promotional activity nurses could develop would be education regarding sun exposure. Excessive exposure to ultraviolet light is yet another example of a substance causing rapid turnover of cells, which may lead to mutations and finally malignancies. In an effort to reduce free radical damage, nurses can also advise clients to ingest a varied, nutritious diet using the food pyramid as a guide, and suggest supplementation with antioxidants such as vitamin C and E (Goldstein, 1993). Activity continues to play an important role in the lives of older adults. Daily routines need to incorporate opportunities that capitalize on existing abilities, strengthen muscles, and prevent further atrophy of muscles related to disuse. Encouraging older adults to participate in activities may prove a challenge to nurses interacting with these clients (Research box, p. 26, on left).

The ability to perform activities of daily living (ADLs) requires functional use of extremities. Daily exercises that enhance upper arm strength and hand dexterity contribute to older adults' ability to successfully perform dressing and grooming activities. Even chair-based activities, like deep breathing, increase the oxygen flow to the brain, thereby promoting clear mental cognition, minimizing dizziness, and promoting stamina with activity.

Encouraging older adults to participate in daily walking, even on a limited basis, facilitates peripheral circulation and promotes the development of collateral circulation. Walking can also help with weight control, which often becomes a problem in older adults. Additional benefits of walking include: (1) replacement of fat with muscle



Research

Ryan M: The relationship between loneliness, support, and decline in cognitive function in the hospitalized elderly, *J Gerontol Nurs* 24(3):19-27, 1998.

Sample/Setting

A nonrandomized study of 145 volunteers, ages 65 and older, who were admitted from the community into an acute care facility.

Methods

The Mini-Mental Status Exam (MMSE) was administered to clients within 48 hours of admission. They were then given the Revised UCLA Loneliness Scale, Personal Resource Questionnaire, and the Beck Depression Inventory Short Form. Five days after initial testing, the MMSE was repeated. MMSE measures the major functions of cognition, orientation, memory, and attention. The Revised UCLA Loneliness Scale detects variations in the loneliness that occurs in everyday life. The Personal Resource Questionnaire measures social support. Client acuity was also measured.

Findings

Those older individuals with high social support on admission experienced significant cognitive decline during hospitalization. The interaction of the variables, loneliness and social support, was not associated with significant cognitive change. Although not statistically significant, clients rated high in loneliness on admission demonstrated improvement in cognitive status during hospitalization.

Implications

If older adults are separated from their social support as a result of hospitalization, they may experience cognitive decline. Acute care nurses need to examine institutional visitation policies and suggest strategies that support social interaction. Consideration for early discharge for clients with adequate social support may be indicated.

Hospital nurses need to be cognizant of the need to provide social supports and examine roommate placement more closely. Nurses need to identify clients at risk and may need to facilitate the discharge of clients designated as "lonely."

tissue, (2) prevention of muscle atrophy, and (3) a generalized increase in the person's sense of well-being (Research box, above right)(see Chapter 10).

The health care delivery system is beginning to turn its focus toward disease prevention and health promotion. Older adults must be included in this focus. Stereotypic views related to older adults being "too old to learn new things" must be replaced with factual knowledge about the cognitive abilities of older adults. It is necessary for client teaching to stress the concept that certain conditions or diseases are not inevitable just because of advancing years. A high level of wellness is needed to help minimize the potential damage caused by disease in later years. Although aging brings with it a decrease in the normal functioning of the immune system, older adults should not suffer needlessly from infections and/or disease.



Research

Duncan H, Travis S: An emergent theoretical model for interventions encouraging physical activity (mall walking) among older adults, *J Appl Gerontol* 14(1):64-78, 1995.

Sample/Setting

Fourteen adults, ages 60 and over, who reported walking at least 30 minutes three times a week at one indoor shopping mall.

Methods

Methods included participant observation, personal conversation, and guided interviews. The interviews were tape-recorded.

Findings

Subjects found mall walking to be a kind of "work" that replaced roles lost to retirement. The authors reported that a community was being created through the roles and rituals. Mall walking established a sense of community for the participants.

Traditional exercise goals of health and wellness had a very small effect on the motivation to participate in this activity.

Implications

Motivational factors for engaging in physical activity have been difficult to ascertain. What this study demonstrates is that older adults may be motivated by things that offer some of the benefits of the workplace, including routines, rituals, and a sense of community. This information will prove valuable for targeting older adults for health promotional activities. Health care providers may structure and market their programs in a different way.

Encouraging preventive measures like an annual influenza vaccine or a one-time inoculation with the pneumococcal vaccine is essential to providing a quality life experience for the older population.

Other applications of biologic theories to practice include the recognition that life stress, both physical and psychologic, has an impact on the aging process. In planning interventions, attention should be paid to the various stress factors in an older person's life. Activities to minimize stress and to promote healthy coping mechanisms must be included in the client teaching plan for older adults.

Teaching the basic techniques of relaxation, guided imagery, visualization, distraction, and music therapy can facilitate a sense of control over potential stress-producing situations. Additional options involving the application of hot or cold, therapeutic touch, and massage therapy might be explored. Being aware of individual cultural preferences and sharing these among other health care professionals will further help promote positive interactions with older adults in all settings.

SOCIOLOGIC THEORIES OF AGING

Sociologic theories focus on changing roles and relationships. In some respects, sociologic theories relate to vari-

ous social adaptations in the lives of older adults. One of the easiest ways to view the sociologic theories is to view them within the context of the societal values at the time in which they were developed. The early research was also carried out largely on institutionalized and ill older persons, skewing the information obtained. Contemporary research is being conducted in a variety of more naturalistic environments, reflecting more accurately the diversity of the aging population.

During the 1960s, sociologists focused on the losses of old age and the manner in which individuals adjusted to these losses in the context of their roles and reference groups. A decade later, society began to have a broader view of aging as reflected in the aging theories proposed during this period. These theories focused on more global, societal, and structural factors that influenced the lives of aging persons. The 1980s and 1990s again brought another change in focus from society. At this point, sociologists began to explore interrelationships, especially those between older adults and the physical, political, environmental, and even socioeconomic milieu in which they lived.

Disengagement Theory

When the disengagement theory was introduced by Cumming and Henry in 1961, the theory sparked immediate controversy. These two theorists viewed aging as a developmental task in and of itself, with its own norms and appropriate patterns of behavior. The identified appropriate patterns of behavior were conceptualized as a mutual agreement between older adults and society on a reciprocal withdrawal. Individuals would change from being centered on society and interacting in the community to being self-centered persons withdrawing from society, by virtue of becoming "old." Therefore social equilibrium would be achieved as the end result (Cumming, Henry, 1961).

The idea that older adults preferred to withdraw from society and to voluntarily decrease their interactions with others was not readily accepted by the general public, much less the older population. Although the theory oversimplified the aging process, the lasting benefit of the theory relates to the controversy it created. The theory itself is no longer supported, but the discussion and the research stemming from its premise continue today.

Activity Theory or Developmental Task Theory

With one group of theorists proposing the concept that older adults need to disengage from society, other sociologists proposed that people needed to stay active if they are to age successfully. In 1953, Havighurst and Albrecht first proposed the idea that aging successfully meant staying active. It was not until 10 years later that the phrase "activity theory" was actually coined by Havighurst and his associates (Havighurst, Neugarten, Tobin, 1963).

Activity is viewed by this theory as necessary to maintain a person's life satisfaction and a positive self-concept. By remaining active, the older person stays young and alive and does not withdraw from society because of an

age parameter. Essentially, the person actively participates in a continuous struggle to remain "middle-aged." This theory is based on three assumptions: (1) it is better to be active than inactive, (2) it is better to be happy than unhappy, and (3) an older individual is the best judge of his or her own success in achieving the first two assumptions (Havighurst, 1972). Within the context of this theory, activity can be viewed very broadly as physical or intellectual. Therefore, even with illness or advancing age, the older person can remain "active" and achieve a sense of life satisfaction (Havighurst, Neugarten, Tobin, 1963).

Continuity Theory

The continuity theory dispels the premises of both the disengagement and activity theories. According to this theory, being active, trying to maintain a sense of being middle-aged, or willingly withdrawing from society does not necessarily bring happiness. Instead, the continuity theory proposes that how a person has been throughout life is how that person will *continue* through the remainder of life (Havighurst, Neugarten, Tobin, 1963).

Old age is not viewed as a terminal or final part of life separated from the rest of life. According to this theory, the latter part of life is a continuation of the earlier part and therefore an integral component of the entire life cycle. When viewed from this perspective, the theory can be seen as a developmental theory. Simply stated, the theory proposes that as persons age, they try to maintain or continue previous habits, preferences, commitments, values, beliefs, and all the factors that have contributed to their personalities (Havighurst, Neugarten, Tobin, 1963).

Age Stratification Theory

Beginning in the 1970s, theorists on aging began to focus more broadly on societal and structural factors that influenced how the older population was being viewed. The age stratification theory is only one example of a theory addressing societal values. The key societal issue being addressed in this theory is the concept of interdependence between the aging person and society at large (Riley, Johnson, Foner, 1972).

This theory views the aging person as an individual element of society and also as a member, with peers, interacting in a social process. The theory attempts to explain the interdependence between older adults and society and how they are constantly influencing each other in a variety of ways.

Riley (1985) identifies the five major concepts of this theory: (1) each individual progresses through society in groups of cohorts that are collectively aging socially, biologically, and psychologically; (2) new cohorts are continually being born, and each of them experiences their own unique sense of history; (3) society itself can be divided into various strata according to the parameters of age and roles; (4) not only are people and roles within every stratum continuously changing, but so is society at large; and (5) the interaction between individual aging people and the entire society is not stagnant but remains dynamic.

Person-Environment Fit Theory

One of the newer aging theories relates to the individual's personal competence within the environment in which he or she interacts. This theory was proposed by Lawton (1982) and examines the concept of interrelationships among the competencies of a group of persons, older adults, and their society or environment.

Everyone, including older persons, has certain personal competencies that help mold and shape them throughout life. Lawton (1982) identified these personal competencies as including ego strength, level of motor skills, individual biologic health, and cognitive and sensory-perceptual capacities. All of these help a person deal with the environment in which one lives.

As a person ages, there may be changes or even decreases in some of these personal competencies. These changes influence the individual's abilities to interrelate with the environment. If a person develops one or more chronic diseases, such as rheumatoid arthritis or cardiovascular disease, then competencies may be impaired and the level of interrelatedness may be limited.

The theory further proposes that, as a person ages, the environment becomes more threatening and one may feel incompetent dealing with it. In a society constantly making rapid technologic advances, this theory helps explain why an older person might feel inhibited and may retreat from society (Box 2-5).

Implications for Nursing

It is important to remember that all older adults cannot be grouped collectively as just *one* segment of the population. There are differences within the aged population. The young-old (ages 65 to 74), the middle-old (ages 75 to 84), the old-old (ages more than 85), and the elite-old (more than 100 years old) are four distinct cohort groups, and the individuals within each of these cohort groups have their own history. There is variation among even the same cohort group based on culture, life experiences, gender, and health and family status. Nurses need to be aware of the fact that whatever similarities exist among the individuals of a cohort, they are just that—individuals. Older adults are not a homogeneous sociologic group, and care needs to be taken not to treat them as if they are.

Older adults respond to current experiences based on their past life encounters, beliefs, and expectations. If their "typical" reaction to stress, challenges, or fear is to disengage from interactions, then current situations often produce the same responses. Because older adults are individuals, their responses must be respected. However, it is within the nurse's scope of practice to identify maladaptive responses and intervene to protect the integrity of the person.

Withdrawal by older adults may be a manifestation of a deeper problem, such as depression. Using assessment skills and specific tools, nurses can further investigate and plan appropriate interventions to help resolve a potentially adverse situation. Older adults may refuse to engage in



Box 2-5

Sociologic Theories of Aging

Disengagement Theory

As individuals age they withdraw from society, and society supports this withdrawal (Cumming, Henry, 1961).

Activity/Developmental Task Theory

Individuals need to remain active to age successfully. Activity is necessary to maintain life satisfaction and a positive self-concept (Havighurst, Neugarten, Tobin, 1963).

Continuity Theory

Individuals will respond to aging in the same way they have responded to previous life events. The same habits, commitments, preferences, and other personality characteristics developed during adulthood are maintained in older adulthood (Havighurst, Neugarten, Tobin, 1963).

Age Stratification Theory

Society consists of groups of cohorts that age collectively. The people and roles in these cohorts change and influence each other, as does society at large. Therefore a high degree of interdependence exists between older adults and society (Riley, 1985).

Person-Environment Fit Theory

Each individual has personal competencies that assist the person in dealing with the environment. These competencies may change with aging, thus affecting the older person's ability to interrelate with the environment (Lawton, 1982).

a particular activity because of "fear of failure" or frustration in not being able to perform the activity. Planning realistic activities for particular client groups is crucial to successful group interaction. The successful completion of a group activity provides an opportunity for increasing an older person's self-confidence, whereas frustration over an impossible task further promotes feelings of inadequacy and uselessness.

By examining the past and being aware of significant events or even beliefs about health and illness, the health care provider can develop a deeper understanding of *why* these particular older adults act or believe the way they do. The health care provider can also gain insight into how a particular group of older adults responds to illness and views healthy aging. This knowledge and insight can certainly assist in helping to plan not only activities but also meaningful client teaching.

Another application of the sociologic theories relates to assisting older adults in adapting to various limitations and securing appropriate living arrangements. Following the passage of the 1990 Americans with Disabilities Act, a majority of buildings are now easily accessible to individuals with special needs. These special needs may include doorways that are wide enough for wheelchairs, ramps instead of stairs, handrails in hallways, and working elevators. While these changes assist younger members of soci-

ety with limited physical capabilities, they also benefit older adults. In addition, older adults might consider the installation of medical alert devices, preprogrammed and/or large-numbered phones, and even special security systems.

Assisting older adults adjust to limitations, while accentuating positive attributes, may aid older persons in remaining independent and may perpetuate a high quality of life during later years. These adaptations may encourage older adults to remain in the community, perhaps even in the family home, instead of being prematurely institutionalized. Older adults continue to feel valued and viewed as active members of society when allowed to maintain a sense of control over the living environment.

In some cities, multigenerational communities are developing, and a sharing of different cultures as well as generations is being fostered. Schools are promoting "adopt a grandparent" programs, day care centers are combining services for children and older adults, and older volunteers visit hospitalized children or phone "latchkey" children after school. All of these are examples of the application of sociologic aging theories in practice. Older adults are continuing to be active, engaging or disengaging as they wish, and continuing to be valued members of society.

PSYCHOLOGIC THEORIES OF AGING

The basic assumption of the psychologic theories of aging is that development does not end when a person reaches adulthood, but remains a dynamic process that occurs over the lifespan. As a person passes from the middle to the later life roles, abilities, perspectives, and belief systems enter a stage of transition. The nurse, by providing holistic care, seeks to employ strategies to enhance clients' quality of life (Hogstel, 1995). The psychologic theories of aging are much broader in scope than the previous theories because they are influenced by both biology and sociology. Therefore psychologic aging cannot readily be separated from biologic and sociologic influences.

As a person ages, various adaptive changes occur that assist the person to cope with or accept some of the biologic changes. Some of the adaptive mechanisms include memory, learning capacity, feelings, intellectual functioning, and motivations to perform or not perform particular activities (Birren, Cunningham, 1985). Psychologic aging, therefore, includes not only behavioral changes but also developmental aspects related to the lives of older adults. How does behavior change in relation to advancing age? Are these behavioral changes consistent in pattern from one individual to another? Theorists are searching for answers to questions such as these.

Maslow's Hierarchy of Human Needs Theory

According to this theory, each individual has an innate internal hierarchy of needs that motivates all human behaviors (Maslow, 1954). These human needs have different orders of priority. When people achieve fulfillment

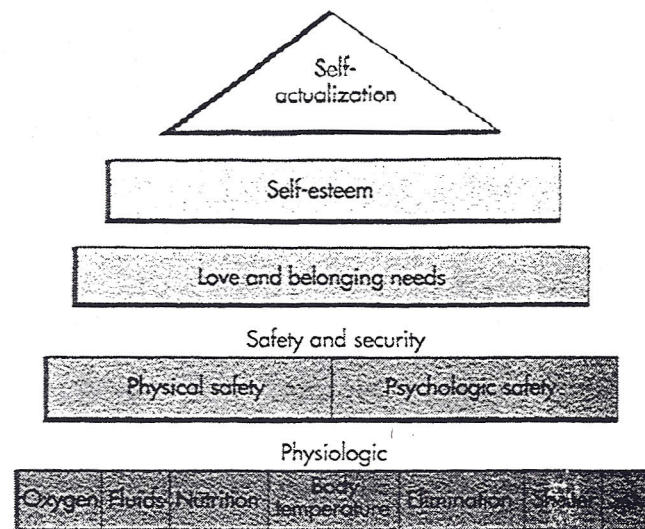


Fig. 2-2 Maslow's Hierarchy of Needs. (From Potter PA, Perry AG: *Basic nursing: a critical thinking approach*, ed 4, St Louis, 1999, Mosby.)

of their elemental needs, they strive to meet those needs on the next level, continuing on until the highest order of needs is reached. These human needs are often depicted as a pyramid, with the most elemental needs at the base.

The initial human needs each person must meet relate to physiologic needs, needs for basic survival. Initially, a starving person worries about obtaining food to survive. Once this need is met, the next concern is about safety and security. These needs must be met, at least to some extent, before the needs for love, acceptance, and a feeling of belonging become concerns. According to Maslow (1968), as each succeeding layer of needs is addressed, the individual is motivated to look to the needs at the next higher step.

Maslow's fully developed, self-actualized person displays high levels of all of the following characteristics: perception of reality; acceptance of self, others, and nature; spontaneity; problem-solving ability; self-direction; detachment and the desire for privacy; freshness of peak experiences; identification with other human beings; satisfying and changing relationships with other people; a democratic character structure; creativity; and a sense of values (Maslow, 1968). Maslow's ideal self-actualized person is probably only attained by about 1% of the population (Thomas, Chess, 1977). Although limited actual achievement of this final level may be true, the person developing in a healthy way is always moving toward more self-fulfilling levels (Fig. 2-2).

Jung's Theory of Individualism

The Swiss psychologist Carl Jung (1960) proposed a theory of personality development throughout life: childhood, youth and young adulthood, middle age, and old age. An individual's personality is composed of the ego, the personal unconsciousness, and the collective

unconsciousness. According to this theory, a person's personality is visualized as oriented either toward the external world (extroverted) or toward subjective, inner experiences (introverted). A balance between these two forces, which are present in every individual, is essential for mental health.

Applying Jung's theory to individuals as they progress through life, it is at the onset of middle age that the person begins to question values, beliefs, and possible dreams left undone. The phrase "midlife crisis" became popular based on this theory and refers to a period of emotional, and sometimes behavioral, turmoil that heralds the onset of middle age. This period may last for several years, with the exact time and duration varying from person to person.

During this period, the individual often searches for answers about reaching goals—questioning whether a part of their personality or "true self" has been neglected and whether time is running out for the completion of these quests. This may be the first time that the individual becomes aware of the effects of the aging process and the fact that the first part of the adult life is over. This realization does not necessarily signal a time of trauma. For many people, it is just another "rite of passage."

As the person ages chronologically, the personality often begins to change from being outwardly focused, concerned about establishing oneself in society, to becoming more inward, as the individual begins to search for answers from within. Successful aging, when viewed from Jung's theory, is when a person looks inward and values oneself for more than just current physical limitations or losses. The individual accepts past accomplishments and limitations (Jung, 1960).

Eight Stages of Life Theory

Erikson (1993) proposed a theory of psychologic development that reflects cultural and societal influences. The major focus of development in this theory is with an individual's ego structure, or sense of self, especially in response to the ways in which society shapes its development. In each of the eight stages identified by Erikson, a "crisis" occurs that impacts the development of the person's ego. The manner in which a person masters any par-

ticular stage influences future success or lack of success in mastering the next stage of development.

When considering older adults, attention needs to be focused on the developmental tasks of both middle and older adulthood. The task of middle adulthood is resolving the conflict between generativity and stagnation. During older adulthood, the developmental task needing resolution is balancing the search for integrity and wholeness with a sense of despair (Table 2-1).

In 1968, Peck expanded Erikson's original theory regarding the eighth stage of older adulthood. Erikson grouped all individuals together into "old age" beginning at age 65 and did not anticipate that a person may potentially live for another 30 to 40 years beyond this identified milestone. Since people were living longer, there became an obvious need to identify additional stages for older adults. Peck (1968) expanded the eighth stage, ego integrity versus despair, into three stages: ego differentiation versus work role preoccupation, body transcendence versus body preoccupation, and ego transcendence versus ego preoccupation (Ignatavicius, Workman, Mishler, 1999).

During the stage of ego differentiation versus work role preoccupation, the task for older adults is to achieve identity and feelings of worth from sources other than the work role. The onset of retirement and termination of the work role may reduce feelings of self-worth. In contrast, a person with a well-differentiated ego, who is defined by many dimensions, can replace the work role as the major defining source for self-esteem.

The second stage of body transcendence versus body preoccupation refers to the older person's view of the physical changes that occur as a result of the aging process. The task is to adjust to or transcend the declines that may occur in order to maintain feelings of well-being. This task can be successfully resolved by focusing on the satisfaction obtained from interpersonal interactions and psychosocial-related activities.

The third and final task of ego transcendence versus ego preoccupation involves acceptance of the individual's eventual death without dwelling on the prospect of it. Remaining actively involved with a future that extends

Table 2-1

Summary of Erikson's Theory: Middle and Older Adulthood

Stages and Ages	Characteristics of Stages	Theory Addendum
Generativity versus self-absorption or stagnation (40 to 65 years old; middle adulthood) Mode: nurturing Virtue: care	Mature adults are concerned with establishing and guiding the next generation. Adults look beyond the self and express concern for the future of the world in general. Older adults can look back with a sense of satisfaction and acceptance of life and death.	Self-absorbed adults will be preoccupied with their personal well-being and material gains. Preoccupation with self leads to stagnation of life. Unsuccessful resolution of this crisis may result in a sense of despair in which individuals view life as a series of misfortunes, disappointments, and failures.
Ego integrity versus despair (65 years to death; older adulthood) Mode: acceptance Virtue: wisdom		

beyond a person's mortality is the adjustment that must be made to achieve ego transcendence.

Selective Optimization with Compensation

Baltes (1987) has conducted a series of studies on the psychologic processes of development and aging from a life-span perspective and formulated a psychologic model of successful aging. The central focus of this theory is that individuals develop certain strategies to manage the losses of function that occur over time. This general process of adaptation consists of three interacting elements. First, there is the element of selection, which refers to an increasing restriction of one's life to fewer domains of functioning because of an age-related loss. The second element, optimization, reflects the view that people engage in behaviors to enrich their lives. The third element, compensation, also results from restrictions due to aging, requiring older adults to literally "compensate" for any losses by developing suitable, alternative adaptations (Schroots, 1996).

The lifelong process of selective optimization with compensation allows people to age successfully. Schroots (1996) used the famous pianist, Rubinstein, to illustrate an application of these elements that the pianist applied in later years. First, Rubinstein said he reduced his repertoire and played a smaller number of pieces (selection); second, he practiced these more often (optimization); and third, he slowed down his speed of playing prior to fast movements, thereby producing a contrast that enhanced the impression of speed in the fast movements (compensation). These concepts of selection, optimization, and compensation can be applied to any aspect of older adult life to demonstrate successful coping with declining functions (Box 2-6).

Implications for Nursing

Integrating the psychologic aging theories into nursing practice becomes increasingly important as the population continues to age. Present and future generations can learn from the past. Older adults should be encouraged to engage in a "life review" process; this can be accomplished using a variety of techniques like reminiscence, oral histories, and story telling. Looking back over life's accomplishments or failures is crucial in assisting older adults to accomplish developmental tasks (as in ego integrity), to promote positive self-esteem, and to acknowledge that one "did not live in vain."

As nurses apply the psychologic theories to the care of older adults in any setting, they help to dispel many of the myths about "being old." If an older person is talking about retirement, worrying about physical living space, or even planning funeral arrangements, these are all part of the developmental tasks appropriate for this age group. Instead of trying to change the topic or attempting to help the person not be so "morbid," the nurse must understand that each stage of life has specific developmental tasks to achieve. Instead of hampering, the nurse should attempt to facilitate their achievement.



Box 2-6

Psychologic Theories of Aging

Maslow's Hierarchy of Human Needs

Human motivation is viewed as a hierarchy of needs that are critical to the growth and development of all people. Individuals are viewed as active participants in life, striving for self-actualization (Carson, Arnold, 1996).

Jung's Theory of Individualism

Development is viewed as occurring throughout adulthood, with self-realization as the goal of personality development. As an individual ages, the individual is capable of transforming into a more spiritual being.

Erikson's Eight Stages of Life

All people experience eight psychosocial stages during the course of a lifetime. Each stage represents a crisis, where the goal is to integrate physical maturation and psychosocial demands. At each stage the person has the opportunity to resolve the crisis. Successful mastery prepares an individual for continued development. Individuals always have within themselves an opportunity to rework a previous psychosocial stage into a more successful outcome (Carson, Arnold, 1996).

Peck's Expansion of Erikson's Theory

Seven developmental tasks are identified as occurring during Erikson's final two stages. The final three of these developmental tasks identified for old age are: (1) ego differentiation versus work role preoccupation, (2) body transcendence versus body preoccupation, and (3) ego transcendence versus ego preoccupation (Ignatavicius, Workman, Mishler, 1999).

Selective Optimization with Compensation

Physical capacity diminishes with age. An individual who ages successfully compensates for these deficits through selection, optimization, and compensation (Schroots, 1996).

Nurses also need to keep in mind that intellectual functioning continues to remain intact in the majority of older adults. A younger person can gain much by observing older persons, listening to how they have coped with life experiences, and discussing their plans for the future with them.

As did other humanistic psychologists, Maslow focused on the human potential, which sets an effective and positive foundation for nurse-client interactions. Maslow's theory also sets priorities for the nurse in relationship to client needs. Employing Maslow's theory, the nurse recognizes that the essential elements such as food, water, oxygen, elimination, and rest must be met prior to self-actualization needs. The nurse recognizes, for example, that client education will be more successful if clients are well rested (Carson, Arnold, 1996).

In planning activities for older adults, nurses need to remember that all individuals enjoy feeling needed and respected and being considered a contributing member of society. Perhaps activities like collecting an oral history,

creating a mural, or quilting a particular event or even an individual's lifetime could be included. Not only would this activity be valuing the individual, but it would also serve to pass on information from one generation to the next; this is an important task that is often forgotten.

Programs promoting interaction between older adults and younger children might prove beneficial to all concerned. For some older adults, caring for small children represented a happy time in their lives. Rocking, cuddling, and playing with children might bring back feelings of being valued and needed. The touching aspects of this activity are also important in relieving stress; many older adults no longer experience any type of meaningful physical contact with others, yet all individuals need this type of contact.

As eyesight and manual dexterity diminish, many older adults enjoy the opportunity to cook or to work in a garden. Often the feel of dirt between the fingers is relaxing and brings back memories of beautiful flowers and prize vegetables. For the older woman in particular, preparing a meal may be an activity she has not been able to do for several years and, with assistance, she may find baking cookies a pleasant activity filled with memories of holidays and loved ones, or prizes at the county fair. Older men may also enjoy cooking and should not be left out of this activity. Preparing muffins for a morning snack would be an activity in which everyone could participate.

MORAL/SPIRITUAL DEVELOPMENT

Human beings seek to explain and validate their existence in the world. For many individuals this occurs through their development as moral and spiritual thinkers. Kolberg has postulated a theory of moral development that is based on interviews with young persons. He has found there to be distinct sequential stages of moral thinking. Though he did not study older adults, parallels could be drawn between his highest stage of moral development, Universal Ethical Principles, and Maslow's highest level of Self-Transcendent Needs. In each instance only a small segment of the population reaches this highest level of development, where their personal needs are sublimated for the greater good of society (Edelman, Mandle, 1998; Levin, Chatters, 1998; Mehta, 1997).

It is important for the nurse to acknowledge the spiritual dimension of a person and support spiritual expression and growth (Hogstel, 1995). *Spirituality* no longer merely denotes religious affiliation; it synthesizes a person's contemplative experience. Illness, a life crisis, or even the recognition that our days on earth are limited may cause a person to contemplate spirituality. The nurse can assist clients in finding meaning in their life crises. Research has begun to explore the relationship between client-centered outcomes and spirituality. A correlation between successful outcomes and spirituality has been demonstrated in some of this research. Regardless of outcomes, nurses need to address spirituality as a component in holistic care (Phipps, Sands, Marek, 1999).

Summary

When interacting with older adults, the nurse often plays a key role as the coordinator of the health care team. Nurses have the background to incorporate information from a variety of sources when planning care for older adults. By using an eclectic approach to aging theories, the nurse will have a broad background from which to draw specific details to provide clarity, explanations, or additional insight into a particular situation.

Biologic theories help the nurse understand how the physical body may change with advancing years and what factors may increase older adults' vulnerability to stress or disease. The nurse will also be able to develop health promotional strategies on behalf of older clients. Understanding sociologic theories broadens the nurse's view of older adults and their interactions with society. Psychologic theories provide an understanding of the values and beliefs an older person may possess. These theories enable a nurse to understand the phases of the lifespan and the developmental tasks faced by the aged population. Through the integration of the various components of these theories, quality care can be planned for older adults. As the population continues to age, nurses with the capability to understand and apply theories of aging from several disciplines will be the leaders of gerontologic nursing in the future. These nurses will contribute to increasingly holistic care and an improved quality of life for older adults.

KEY POINTS

- There is no one theory that explains the biologic, sociologic, or psychologic aging processes.
- An eclectic approach incorporating concepts from biology, sociology, and psychology was used in developing aging theories.
- Biologic theories must address what factors actually trigger the aging process in organisms.
- Humans are thought to have a maximum lifespan of 110 to 120 years.
- A change in the efficiency of immune processes may predispose individuals to disease with advancing age.
- Biologic theories alone *do not* provide a comprehensive explanation of the aging process.
- Reminiscence is supported by sociologic theories and assists older adults in appreciating past memories.
- Each individual is unique, no matter what age. Older adults are not a homogenous population.
- The activity theory remains popular because it reflects current societal beliefs about aging.
- As a person ages, various adaptive changes occur which may assist the person in coping with or accepting some of the biologic changes.
- Human development is a process that occurs over the lifespan.

CRITICAL THINKING EXERCISES

1. Discuss how sociologic theories of aging may be influenced by changing societal values (e.g., advanced technology or a community health care focus) in the next decade.
2. A 62-year-old woman believes that heart disease and poor circulation are inevitable consequences of growing older and is resistant to altering her ADLs and dietary regimen. How would you respond?
3. Think of various programs and institutions in your community that care for older persons. Identify two and discuss the sociologic aging theories exemplified in each example.
4. A 74-year-old man repeatedly talks about how he wishes he were as strong and energetic as he was when he was younger. His family consistently changes the topic or criticizes him for being so grim. How would you intervene in this situation?
5. What health promotion strategies would you recommend to promote successful aging?
6. Imagine yourself at age 75. Describe your appearance, your health issues, and your lifestyle.

References

- Baltes PB: *Life-span development and behavior*, vol 7, 1987, Lawrence Erlbaum.
- Birren JE, Cunningham WR: Research on the psychology of aging. In Birren JE, Scheie KW, editors: *Handbook of the psychology of aging*, New York, 1985, Van Nostrand Reinhold.
- Bjorkstein J: The crosslinkage theory of aging: clinical implications, *Compr Ther* 11:65, 1976.
- Black JM, Matassarin-Jacobs E: *Medical-surgical nursing, clinical management for continuity of care*, ed 5, Philadelphia, 1997, WB Saunders.
- Carson VB, Arnold EN: *Mental health nursing, the nurse-patient journey*, Philadelphia, 1996, WB Saunders.
- Cetron M, Davies O: Extended lifespans: are you ready to live to 120 or more?, *Futurist* 32(3):17-24, 1998.
- Comfort A: Biological theories of aging, *Human Development* 13:127-139, 1970.
- Cumming E, Henry W: *Growing old: the process of disengagement*, New York, 1961, Basic Books.
- Cupp MJ: Melatonin, *American Family Physician* 56(5):1421-1427, 1997.
- Edelman CL, Mandle CL: *Health promotion throughout the lifespan*, ed 4, St Louis, 1998, Mosby.
- Erikson E: *Childhood and society*, ed 35, New York, 1993, WW Norton.
- Gerhard G, Cristofalo V: The limits of biogerontology, *Generations* 16(4):55-60, 1992.
- Goldstein S: The biology of aging: looking to defuse the time bomb, *Geriatrics* 48(9):76-81, 1993.
- Guardiola-Lemaitre B: Toxicology of melatonin, *J Biol Rhythms* 12(6):693-703, 1997.
- Gupta J, Han LP: Development of retinoblastoma in the absence of telomerase activity, *J American Cancer Institute* 8(16):1152-1158, 1996.
- Harman D: Aging: a theory based on free radical and radiation chemistry, *J Gerontol* 11:298-300, 1956.
- Havighurst RJ: *Developmental tasks and education*, ed 3, New York, 1972, David McKay.
- Havighurst RJ, Albrecht R: *Older people*, New York, 1953, Longmans, Green.
- Havighurst RJ, Neugarten BL, Tobin SS: Disengagement, personality and life satisfaction in the later years. In Hansen P, editor: *Age with a future*, Copenhagen, 1963, Munksgaard.
- Hayflick L: *How and why we age*, New York, 1996, Ballantine Books.
- Hayflick L: Why do we live so long? *Geriatrics* 43(10):77-87, 1988.
- Hayflick L, Moorehead PS: The serial cultivation of human diploid cell strains, *Exp Cell Res* 25:585, 1961.
- Hogstel MO: *Geropsychiatric nursing*, ed 2, St Louis, 1995, Mosby.
- Holstein M: Qualitative gerontology, *Res on Aging* 17(1):114-118, 1995.
- Ignatavicius DD, Workman ML, Mishler MA: *Medical-surgical nursing across the health care continuum*, ed 3, St Louis, 1999, WB Saunders.
- Jung C: The stages of life. In *Collected works: volume 8, the structure and dynamics of the psyche*, New York, 1960, Pantheon Books.
- Kendler BS: Melatonin: media hype or therapeutic breakthrough, *Nurs Pract: American Journal of Primary Health Care* 22(2):66-67, 71-72, 71, 1997.
- Keys SW, Marble M: In vivo data demonstrates critical role for telomeres, *Cancer Weekly Plus* 5/04/98:11-13.
- Lawton MP: Competence, environmental press, and the adaptation of older people. In Lawton MP, Windley PG, Byerts TO, editors: *Aging and the environment: theoretical approaches*, New York, 1982, Springer.
- Levin JS, Chatters L M: Religion, health, and psychological well-being in older adults: findings from three national surveys, *J Aging and Health* 10(4):504-532, 1998.
- Maslow A: *Motivation and personality*, New York, 1954, Harper & Row.
- Maslow A: *Toward a psychology of being*, ed 2, Princeton, N.J., 1968, Van Nostrand Reinhold.
- Mehta KK: The impact of religious beliefs and practices on aging: a cross-cultural comparison, *J Aging Studies* 11(2):101-115, 1997.
- Peck R: Psychological development in the second half of life. In Neugarten B, editor: *Middle and aging*, Chicago, 1968, University of Chicago Press.
- Phipps WJ, Sands JK, Marek JF: *Medical-surgical nursing: concepts and clinical practice*, ed 6, St Louis, 1999, Mosby.
- Riley MW: Age strata in social systems. In Binstock RH, Shanas E, editors: *Handbook of aging and social sciences*, New York, 1985, Van Nostrand Reinhold.
- Riley MW, Johnson M, Foner A: *Aging and society: volume 3, a sociology of age stratification*, New York, 1972, Russel Stage Foundation.
- Schneider E: Biological theories of aging, *Generations* 16(4):7-11, 1992.
- Schroots E: Theoretical developments in the psychology of aging, *Gerontologist* 36(6):742-749, 1996.
- Sonneborn T: The origin, evolution, nature and causes of aging. In Behnke J., Finch CE, Moment C, editors: *The biology of aging*, New York, 1979, Plenum Press.
- Thomas A, Chess S: *Temperament and development*, New York, 1977, Brunner/Masel.
- Yu BP: *Methods in aging research*, Boca Raton, Fla, 1998, CRC Press.
- Yu BP: *Free radicals in aging*, Boca Raton, Fla, 1993, CRC Press.