Recall from Parts 2 and 3 Sherman “Red” Yoder, an 80-year-old male with insulin-dependent diabetes and a foot wound. During the assessment the home health nurse discovers that he is having urgency incontinence and often avoids fluids, especially before driving 20 miles to have coffee with friends. How can urinary incontinence affect Red’s quality of life? What age-related changes and conditions can increase the potential for urinary incontinence? What further assessments and interventions can be incorporated in the nursing plan of care to promote urinary wellness?

Care for Red and other patients in a realistic virtual environment: vSim for Nursing (thepoint.lww.com/vSimGerontology). Practice documenting these patients’ care in DocuCare (thepoint.lww.com/DocuCareEHR).

Henry Williams, age 69, is a retired rail system engineer who has chronic obstructive pulmonary disease (COPD), which is exacerbated by frequent respiratory infections. In addition to COPD, what age-related alterations and risk factors can affect his respiratory function? What nursing interventions and education can promote Henry’s respiratory wellness? What resources could the nurse suggest to Henry to improve self-management of COPD? (Henry Williams’ story continues in Part 5.)

Care for Henry and other patients in a realistic virtual environment: vSim for Nursing (thepoint.lww.com/vSimGerontology). Practice documenting these patients’ care in DocuCare (thepoint.lww.com/DocuCareEHR).
Hearing

LEARNING OBJECTIVES

After reading this chapter, you will be able to:
1. Describe age-related changes that affect hearing.
2. Identify risk factors that affect hearing wellness.
3. Discuss the functional consequences that affect hearing wellness.
4. Conduct a nursing assessment of hearing, with emphasis on identifying opportunities for health promotion.
5. Identify nursing interventions to promote hearing wellness for older adults by addressing risk factors that interfere with hearing.

AGE-RELATED CHANGES THAT AFFECT HEARING

Auditory function depends on a sequence of processes, beginning in the three compartments of the ear and ending with the processing of information in the auditory cortex of the brain. Sounds are coded according to intensity and frequency. Intensity, or amplitude, reflects the loudness or softness of the sound and is measured in decibels (dB). Frequency, which is measured in cycles per second, or hertz (Hz), determines whether the pitch is high or low. Sound intensity and frequency may be altered if certain risk factors come into play. Even in the absence of risk factors, normal age-related changes affect frequency, causing hearing problems for many older adults.

External Ear

Hearing begins in the external or outer ear, which consists of the pinna and the external auditory canal (Figure 16-1). These cartilaginous structures localize sounds so the source can be identified. The auditory canal is covered by skin and lined with hair follicles and cerumen-producing glands. The function of cerumen, or earwax, is to cleanse, protect, and lubricate the ear canal. Age-related processes that interfere with the normal processes of expelling cerumen include an increased concentration of keratin, the growth of longer and thicker hair (especially in men), and thinning and drying of the skin lining the canal. These changes cause cerumen to be drier and more difficult to expel, thereby increasing the potential for cerumen to accumulate and block the canal.

Middle Ear

The tympanic membrane is a transparent, pearl-gray, slightly cone-shaped layer of flexible tissue that separates the outer and middle ear. Its primary functions are to transmit sound...
energy and protect the middle and inner ear. With increased age, collagenous tissue replaces the elastic tissue, resulting in a thinner and stiffer ear drum. Sound vibrations pass through the tympanic membrane to the three auditory ossicles: the malleus, incus, and stapes. These bones act as a lever and transmit sound vibrations across the air-filled middle ear, through the oval window, and into the fluid-filled inner ear. Sound transmission depends on the frequency of each sound and is best for the middle-frequency range of normal voices and less effective for low- and high-frequency sounds.

Age-related calcification of the ossicles can interfere with the transfer of sound vibrations from the tympanic membrane to the oval window.

The middle ear muscles and ligaments respond to loud noises to protect the delicate inner ear and filter out auditory distractions originating from one’s own voice and body movements. With increased age, degenerative changes in the middle ear muscles and ligaments interfere with this protective response and diminish the elasticity of the tympanic membrane.
Researchers also are exploring potential interrelationship between two or more risk factors. For example, people who are genetically predisposed to hearing loss may be more susceptible to the damaging effects of noise exposure or ototoxic medications. Because age-related changes increase the risk for hearing loss, it is especially important to identify modifiable risk factors in older adults so that those risks can be addressed. Most likely, some hearing loss attributed to age-related changes actually results from risk factors, such as exposure to noise or ototoxic substances. Box 16-1 summarizes some factors that interfere with hearing wellness, either alone or in combination.

**Inner Ear**

In the inner ear, vibrations are transmitted to the cochlea, where they are converted to nerve impulses and coded for intensity and frequency. Nerve impulses stimulate the eighth cranial nerve and send the auditory message to the brain. Age-related changes of the inner ear include loss of sensory hair cells, reduction of blood supply, diminution of endolymph production, decreased basilar membrane flexibility, degeneration of spiral ganglion cells, and loss of neurons in the cochlear nuclei.

**Auditory Nervous System**

Functions of the auditory nervous system include localizing sound direction, fine-tuning auditory stimuli, and transferring information from the primary auditory cortex to the auditory association area. The auditory nervous system is affected by all the following age-related changes: degenerative changes in the inner ear, narrowing of the auditory meatus from bone apposition, diminished blood supply, and central nervous system changes.

**Exposure to Noise**

A commonly occurring risk factor for hearing loss is prolonged or intermittent exposure to noise, which can be viewed as both a lifestyle choice and an environmental factor. Although age-related changes account for a greater amount of hearing loss than occupational noise exposure, *noise-induced hearing loss* (NIHL) is an important preventable type of hearing loss. Short-term exposure to noise causes temporary hearing loss, and prolonged exposure causes permanent hearing loss due to gradual destruction of sensory cells in the inner ear. Many occupational and leisure activities are associated with an increased risk for NIHL, with several of the most common ones identified in Box 16-1. Exposure to toxic chemicals in the workplace or the environment is another risk factor for hearing loss that has been under investigation since the 1990s, with current research focusing on metals, solvents, asphyxiants, and pesticides/herbicides. Although the National Institute for Occupational Safety and Health enforces safety standards for workplace
Impacted cerumen (also called impacted wax) is common in older adults as a leading cause of hearing loss, particularly in nursing home residents. Age-related changes, which make the cerumen dryer and more concentrated, increase the risk of impaction. In addition to causing hearing loss, impacted cerumen can cause pain, otitis, tinnitus, dizziness, fullness, or coughing. Cerumen accumulation is preventable and treatable and, most important, it is readily amenable to nursing interventions (as discussed later in this chapter in the section on Impacted Cerumen), which lead to improved hearing.

Adverse Effects of Medications and Treatments

Ototoxic effects of quinine and salicylates were first observed more than a century ago. More recently, health care conditions that pose risks for hearing loss, it is important to consider that many older adults were exposed to harmful work environments before these standards were established. Because the effects of NIHL and age-related changes are cumulative, the hearing loss may not be noticed until later adulthood. For US military veterans, tinnitus and hearing loss are the two most prevalent causes of service-connected disability, affecting veterans of all ages and sometimes not occurring until years after active service (National Academy of Sciences, Engineering, & Medicine, 2016). Figure 16-2 illustrates the noise levels of various activities. Sounds louder than 80 to 85 dB are considered potentially ototoxic.

**Box 16-1 Risk Factors for Impaired Hearing**

- Genetic predisposition
- Increased age
- Male gender
- White race
- Impacted cerumen
- Occupational exposure to noise—examples of occupations:
  - Military workers
  - Farmers
  - Miners
  - Construction workers
  - Musicians
- Recreational exposure to noise—examples:
  - Listening to music using earphones or sound systems at high volumes
  - Hunting or target shooting
  - Riding all-terrain vehicles or motorcycles
  - Operating power tools (e.g., chain saws, leaf blowers, drills)
- Exposure to toxic chemicals in the workplace or the environment—examples:
  - Heavy metals (e.g., lead, mercury)
  - Solvents
  - Asphyxiates
  - Pesticides/herbicides
  - Carbon monoxide
  - Fuels
  - Smoking of nicotine products
  - Otoxic medications
  - Aminoglycosides (e.g., gentamicin, neomycin)
  - Aspirin and other salicylates
  - Cisplatin and other chemotherapeutic agents
  - Hydroxychloroquine
  - Loop diuretics (e.g., bumetanide, furosemide)
  - Macrolides (e.g., erythromycin, clarithromycin)
  - Quinine
  - Quinolones (e.g., ciprofloxacin, ofloxacin)
- Medical conditions—examples:
  - Diabetes
  - Hypertension
  - Cardiovascular disease
  - Ménière disease

**Figure 16-2** Noise levels associated with common activities are measured in decibels (dB). Sounds louder than 80 dB are potentially harmful to ears.

**Impacted Cerumen**

Impacted cerumen (also called impacted wax) is common in older adults as a leading cause of hearing loss, particularly in nursing home residents. Age-related changes, which make the cerumen dryer and more concentrated, increase the risk of impaction. In addition to causing hearing loss, impacted cerumen can cause pain, otitis, tinnitus, dizziness, fullness, or coughing. Cerumen accumulation is preventable and treatable and, most important, it is readily amenable to nursing interventions (as discussed later in this chapter in the section on Impacted Cerumen), which lead to improved hearing.

**Adverse Effects of Medications and Treatments**

Ototoxic effects of quinine and salicylates were first observed more than a century ago. More recently, health care
professionals have recognized the ototoxic effects of certain medications, such as the ones listed in Box 16-1. In addition, hearing loss is being addressed as an adverse effect of cancer treatments, including platinum-based chemotherapy, radiation for head and neck cancers, and surgery involving the ear and auditory nerve (Landier, 2016; Waissbluth, Peleva, & Daniel, 2016). Although age alone does not increase the risk for ototoxicity, older adults are more likely to have conditions that increase the risk for medication-related ototoxicity, such as renal failure, dehydration, and potentiation between two ototoxic medications, such as furosemide and aminoglycoside antibiotics. Although ototoxicity is potentially reversible, medications may be overlooked as a causative factor if the hearing loss is mistakenly ascribed to inevitable and irreversible degenerative changes.

**Disease Processes**

**Otosclerosis** is a hereditary disease of the auditory ossicles that causes ankylosis of the footplate of the stapes to the oval window. Although otosclerosis usually begins in youth or early adulthood, the hearing loss may not be detected until middle or later adulthood when age-related changes compound the disease-related changes. Otosclerosis primarily causes a conductive hearing loss, but older adults are likely to also experience significant sensorineural hearing loss that is beyond the expected age-related changes (Ishai, Halpin, Shin, et al., 2016). Ménière disease and acoustic neuromas are auditory system diseases that commonly cause hearing impairment.

Medical conditions and systemic diseases that can cause or contribute to hearing impairment include diabetes, hypertension, meningitis, hypothyroidism, lipid disorders, head injury, high fevers, Paget disease, renal failure, cardiovascular disease, and viral infections (e.g., measles and mumps).
Presbycusis typically begins in the fourth decade, but the sharpest increase in prevalence occurs after the tenth decade (Wattamwar, Qian, Otter, et al., 2016). Presbycusis usually occurs in both ears, but the degree of impairment in each ear can vary. An early functional consequence of presbycusis is the loss of ability to hear high-pitched sounds and sibilant consonants. When high-pitched sounds are filtered out, words become distorted and jumbled and sentences become incoherent. For example, someone with presbycusis might interpret a sentence like "I think she should go to the store" as "I wish we could go to the show." This characteristic, known as diminished speech discrimination, is influenced by the speaker's rate of speech: rapid, slow, or slurred speech patterns make it increasingly difficult for the older person to discern words. As the hearing loss progresses, explosive consonants, such as \(b, d, k, p,\) and \(t,\) also become distorted.

Background noise and environmental conditions, such as echoing or poor acoustics, interfere with the ability of older adults to understand speech, even in the absence of a significant hearing loss (Vermeire, Knoop, Boel, et al., 2016). Thus, older adults in a hospital or long-term care facility, for example, may be particularly sensitive to background noises to which the staff may have become accustomed.

A conductive hearing loss is characterized by a reduced intensity of sounds and difficulty hearing vowels and low-pitched tones. In contrast to presbycusis, all sound frequencies are heard equally once the sound threshold is reached.
and background noise does not interfere as much with speech comprehension. Often there is a history of otosclerosis, perforated eardrum, or other ear diseases. In older adults, impacted cerumen is a common contributing factor. Depending on the causative factor, conductive hearing loss occurs in one or both ears (see Table 16-1 for a summary of the functional consequences of age-related changes affecting hearing).

See ONLINE LEARNING ACTIVITY 16-2: THROUGH THE EARS OF OLDER ADULTS at http://thepoint.lww.com/Miller8e

Effects of Hearing Loss on Overall Wellness

Adequate hearing is a primary component of communication that enables people to enjoy humor, appreciate music, obtain information, relate to others, and respond to threats. Thus, hearing deficits inevitably affect safety, functioning, and quality of life in many ways. Reviews of studies have identified all the following functional consequences of hearing loss in older adults:

- Diminished cognitive function
- Functional decline
- Loneliness, isolation, and diminished participation in social activities
- Diminished emotional vitality, defined as a high level of happiness and sense of personal mastery and low levels of anxiety and depressive symptoms
- Increased prevalence of depression
- Decreased autonomy
- Increased dependence on others

(Cardin, 2016; Fortunato, Forli, Guglielmi, et al., 2016; Sung, Li, Blake, et al., 2016).

It is important to consider the effects of hearing loss on cognitive function because reduced auditory input may affect performance on mental status evaluations (Hume & Young, 2016). Nurses also need to consider that people with hearing loss may refrain from answering questions or give inaccurate responses because they are unable to comprehend the questions. Poor performance on tests of cognitive abilities can mistakenly lead to a perception that the person has cognitive impairments or dementia when, in fact, the person has a hearing loss.

In addition to having a negative influence on the quality of life, hearing deficits can affect the safety and functioning of older adults. For example, people with hearing impairments are likely to be less responsive when warning signals are sounded for fires, ambulances, and other emergencies. Besides creating actual safety hazards, the hearing deficit can lead to fear and anxiety about personal safety.

Negative societal attitudes about aging and hearing loss can result in a doubly negative effect on the person who is old as well as hard of hearing. The older person may be reluctant to acknowledge a hearing deficit, choosing to limit opportunities for communication rather than face the stigma associated with hearing impairments. These attitudes and accompanying behaviors can contribute to additional psychological consequences such as loneliness, depression, and even more social isolation.

Wellness Opportunity

Nurses can initiate conversations that reflect positive and nonjudgmental attitudes about aging and hearing loss.

Unfolding Case Study

Part 2: Mr. H. at 69 Years of Age

Mr. H. is now 69 years old and has been retired for several years. He spends several days a week hunting and fishing seasonally. He also spends time in his basement making small pieces of furniture and doing other woodworking. He continues to smoke but has cut down to one pack per day. His wife and he attend the weekly “lunch bunch” group at the local senior center where you are the nurse. They make an appointment to talk with you because Mrs. H. is concerned about her husband’s hearing. Mr. H., who blames his problem on “old age,” refuses to have an evaluation for a hearing aid because he does not think an aid would do any good and “besides, it would stick out like a sore thumb.”
Hearing

Impact of any hearing deficits on safety and quality of life
Opportunities for improving hearing wellness
Barriers to implementing interventions

Each of these factors is important in helping older adults and their caregivers compensate for hearing deficits. Assessment is accomplished through interviewing, observing behavioral cues, and administering hearing tests.

Interviewing About Hearing Changes

Use interview questions, such as the ones in Box 16-2, to acquire information about (1) present and past risk factors, (2) the person’s awareness and acknowledgment of a hearing impairment, (3) the psychosocial impact of any hearing deficit, and (4) attitudes that might influence health promotion interventions. Begin with questions about family history of hearing impairments and a personal history of prolonged exposure to loud noises. Identification of ototoxic medications as a risk factor can be included as part of the hearing assessment or as part of the medication history.

If the older adult does not initiate a discussion of hearing problems, ask direct questions, such as “Do you think you have a hearing loss?” If the nursing assessment identifies behavioral cues indicative of a hearing deficit but the person denies having a hearing problem, attempt to elicit further information by asking questions such as “I notice you turn your left ear toward me. Is your hearing better in that ear?” If a hearing loss is present, assess related functional consequences by asking about changes in social activities or ability to function independently because of difficulty hearing.

PATHOLOGIC CONDITION AFFECTING HEARING: TINNITUS

Tinnitus is the persistent sensation of ringing, roaring, blowing, buzzing, or other types of noise that do not originate in the external environment. In the United States, 14.3% of adults aged 60 to 69 years experience tinnitus, and about 90% of people with tinnitus also have hearing loss (Al-Swiahb & Park, 2016). Tinnitus is a symptom of an underlying condition, such as impacted cerumen, otosclerosis, or Ménière disease. Most often, it occurs in conjunction with sensorineural hearing loss.

A primary responsibility of nurses is to encourage people who have tinnitus to discuss this symptom with their primary care practitioners to identify reversible or serious causes. A referral to a specialist is especially important if tinnitus is unilateral, bothersome, or accompanied by hearing loss.

See ONLINE LEARNING ACTIVITY 16-3: THROUGH THE EARS OF SOMEONE WHO HAS TINNITUS at http://thepoint.lww.com/Miller8e

Wellness Opportunity
Nurses can teach people who have tinnitus about the exacerbating effects of conditions—such as smoking cigarettes and drinking alcoholic or caffeinated beverages—that can be addressed through self-care actions.

QSEN APPLICATION

QSEN Competency Knowledge/Skill/Attitude Application to Mr. H. When He Is 69 Years Old
Patient-centered care (K) Integrate understanding of multiple dimensions of patient-centered care Identify Mr. H.’s misunderstandings about hearing loss and hearing aids and use a nonjudgmental approach to provide correct information
(K) Discuss principles of effective communication Encourage Mrs. H. to verbalize her concerns directly to Mr. H. during your meeting so these can be addressed and misinformation can be corrected
(S) Elicit patient values, preferences, and expressed needs
(A) Value seeing health care situations “through patients’ eyes”
Questions to Identify Risk Factors for Hearing Loss
- Do you have a family history of hearing loss or deafness?
- Have you been exposed to loud noises in your job or leisure activities?
- Do you have a history of any of the following: diabetes, hypothyroidism, Ménière disease, or Paget disease?
- What medications do you take? (Refer to Box 16-1 to identify potentially ototoxic medications)
- Have you ever had impacted wax in your ears?

Questions to Assess Awareness and Presence of Hearing Deficit
- Do you have any trouble with your hearing?
- Have you noticed any change in your ability to understand conversations or hear words?
- Are you bothered by any noises in your ears, such as ringing or buzzing?

Questions to Ask if Hearing Loss is Acknowledged
- How long have you noticed a hearing loss?
- Do you notice differences in hearing in your left ear versus your right ear?
- Has there been a progressive loss, or did the hearing problem begin suddenly?
- Describe your hearing difficulty.
- Are there any conditions, such as noisy environments or particular voices or sounds that especially interfere with your hearing?
- Does your hearing loss interfere with your ability to communicate with others, either individually or in groups?
- Are there any activities that you would like to do but feel you cannot because of hearing problems?

Have you ever had, or thought about having, an evaluation for a hearing aid?
Have you ever tried using a hearing aid?

Questions to Identify Opportunities for Education About Disease Prevention and Health Promotion
- Does the person engage in any activities that expose him or her to loud noises, such as woodworking or lawn mowing? If so, does he or she understand the importance of wearing ear protectors?
- If the person has a history of impacted wax, does he or she not take preventative measures?
- Does the person smoke cigarettes or live in a household with a smoker? If so, does the person realize that this is a risk factor for hearing loss?
- What are the person’s attitudes about hearing loss?
- Is hearing loss considered normal and untreatable?
- Is a hearing aid considered to be a stigma?
- If the person is resistant to an audiologic evaluation, what are the barriers? (e.g., are there financial or transportation limitations that interfere with obtaining a hearing aid?)
- Does the hearing loss contribute to a sense of isolation, depression, paranoia, or low self-esteem?
- What are the person’s usual communication opportunities, and how does the hearing loss influence these usual patterns? (For instance, does the person live in an environment where it is important to be able to use the phone?)
- Does the person live in a noisy environment and find relief in the hearing impairment?
- If the person lives in an environment where group activities are a large part of daily activities, does the person want to participate in these activities?

The Hearing Handicap Inventory for the Elderly (HHIE-S) is a 10-item questionnaire that can be administered to older adults in approximately 5 minutes to assess the presence and functional consequences of hearing loss (Figure 16-4). This tool has been widely used since the early 1980s and is recommended by the Hartford Institute for Geriatric Nursing as a valid and reliable tool for measuring social and emotional effects of hearing loss.

Wellness Opportunity
Nurses promote self-care by asking an older adult to use the HHIE-S and then reviewing the results of this assessment to identify goals.

Observing Behavioral Cues
Behavioral cues related to hearing loss provide important information about the presence of a hearing impairment, the psychosocial consequences of any such impairment, and the person’s attitudes about assistive devices. If the older adult denies a hearing deficit that has been noticed by others, behavioral cues can be an important source of assessment information. Denial of a hearing deficit can be rooted in lack of awareness of the impairment because of gradual onset or, if the older person is socially isolated, can be caused by...
Using Hearing Assessment Tools

Nurses assess hearing by using an otoscope to examine the ear and a tuning fork to check hearing. The purpose of the otoscopic examination is to identify impacted cerumen and other factors that can interfere with hearing, whereas a paucity of opportunities for communication, Feelings of embarrassment or misconceptions that the hearing loss is an inevitable and untreatable consequence of aging can also contribute to denial. Box 16-3 lists behavioral cues that the nurse should observe as part of the hearing assessment.

### Box 16-3 Guidelines for Assessing Behavioral Cues Related to Hearing

**Behavioral Cues to a Hearing Deficit**
- Inappropriate or no response to questions, especially when there are opportunities for lip reading
- Inability to follow verbal directions without cues
- Short attention span, easy distractibility
- Frequent requests for repetition or clarification of verbal communication
- Intense observation of the speaker
- Mouthing of words spoken by the speaker
- Turning of one ear toward the speaker
- Unusual physical proximity to the speaker
- Lack of response to loud environmental noises
- Speech that is too loud or inarticulate

**Behavioral Cues About Psychosocial Consequences**
- Abnormal voice characteristics, such as monotony
- Misperception that others are talking about him or her
- Uncharacteristic avoidance of group settings
- Lack of interest in social activities, especially those requiring verbal communication or those that the person enjoyed in the past (e.g., bingo, card games)

**Behavioral Cues About Assistive Devices**
- Not using a hearing aid that has been purchased
- Failure to obtain batteries for a hearing aid
- Expression of embarrassment about using assistive devices

### Using the Hearing Handicap Inventory for the Elderly (HHIE-S)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>YES (4 pts)</th>
<th>SOMETIMES (2 pts)</th>
<th>NO (0 pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does a hearing problem cause you to feel embarrassed when you meet new people?</td>
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<tr>
<td>Does a hearing problem cause you to feel frustrated when talking to members of your family?</td>
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<tr>
<td>Do you have difficulty hearing when someone speaks in a whisper?</td>
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<tr>
<td>Do you feel handicapped by a hearing problem?</td>
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<tr>
<td>Does a hearing problem cause you difficulty when visiting friends, relatives, or neighbors?</td>
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<tr>
<td>Does a hearing problem cause you to attend religious services less often than you would like?</td>
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<tr>
<td>Does a hearing problem cause you to have arguments with family members?</td>
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<tr>
<td>Does a hearing problem cause you difficulty when listening to TV or radio?</td>
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<tr>
<td>Do you feel that any difficulty with your hearing limits or hampers your personal or social life?</td>
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<td></td>
<td></td>
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<tr>
<td>Does a hearing problem cause you difficulty when in a restaurant with relatives or friends?</td>
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<td></td>
</tr>
</tbody>
</table>

**RAW SCORE** (sum of the points assigned each of the items)

**INTERPRETING THE RAW SCORE**
- **0 to 8** = 13% probability of hearing impairment (no handicap/no referral)
- **10 to 24** = 50% probability of hearing impairment (mild–moderate handicap/refer)
- **26 to 40** = 84% probability of hearing impairment (severe handicap/refer)

*FIGURE 16-4* The screening version of the Hearing Handicap Inventory for the Elderly (HHIE-S). (Reprinted with permission from Wolters Kluwer, publisher of *Ear and Hearing*.)
A nursing assessment might identify an actual hearing deficit or risk factors for impaired hearing. To emphasize the goal of promoting wellness, use the diagnosis of the purpose of the tuning fork test is to detect hearing impairments and to differentiate between conductive and sensorineural losses. Box 16-4 describes the procedure for performing a nursing assessment of hearing using the otoscope and tuning fork. A handheld audioscope is another assessment tool that is recommended in nursing guidelines; however, this tool is not as widely available as an otoscope or tuning fork. When a hearing deficit is identified, the nurse can recommend that further evaluation be conducted at a speech and hearing center or by a specialized physician, such as an otolaryngologist.

**See ONLINE LEARNING ACTIVITY 16-4: ARTICLE WITH CASE SCENARIOS ABOUT NURSING ASSESSMENT AND INTERVENTIONS FOR HEARING LOSS at http://thepoint.lww.com/Miller8e**

**NURSING DIAGNOSIS**
A nursing assessment might identify an actual hearing deficit or risk factors for impaired hearing. To emphasize the goal of promoting wellness, use the diagnosis of

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**Box 16-4 Guidelines for Otoscopic and Tuning Fork Assessment**

**Using the Otoscope to Assess Factors That Could Interfere With Hearing**

- Hold the otoscope upside down, resting your hand on the person’s head to stabilize the instrument
- Before inserting the speculum, pull the earlobe up and back, while tilting the person’s head slightly back and toward the opposite shoulder
- If cerumen has accumulated to the point of interfering with the examination or occluding the canal, follow the cerumen removal procedure described in the section on Nursing Interventions
- Normal otoscopic findings in older adults include the following:
  - Small amount of cerumen
  - Pinkish-white epithelial lining, no redness or lesions
  - Pearl-gray tympanic membrane, which is less translucent than in younger adults
  - Light reflex anteroinferiorly from the umbo
  - Visible landmarks

**Using the Tuning Fork to Detect Hearing Impairment**

- Use a tuning fork with frequencies of 512 to 1024 Hz
- Hold the tuning fork firmly at the stem
- Strike the fork against the palm of your hand, or strike the fork with a rubber reflex hammer, to set it in motion

**Weber Test**


**Rinne Test**

Readiness for Enhanced Communication, defined as “a pattern of exchanging information and ideas with others, which can be strengthened” (Herdman & Kamitsuru, 2018, p. 262). If psychosocial consequences are identified, pertinent nursing diagnoses might include Anxiety, Impaired Social Interaction, Ineffective Coping, and Risk for Loneliness. When the hearing impairment is severe and uncompensated to the point that the person does not function safely, then Risk for Injury might be an applicable nursing diagnosis.

**Wellness Opportunity**
Nurses can use the wellness nursing diagnosis of Readiness for Enhanced Communication for older adults who are willing to explore possibilities for improving their hearing through health promotion interventions.

**PLANNING FOR WELLNESS OUTCOMES**
When risk factors for hearing loss are identified, an appropriate Nursing Outcomes Classification (NOC) label is Risk Control: Hearing Impairment, defined as personal actions to understand, prevent, eliminate, or reduce threats, to hearing function. Two NOC labels applicable to older adults who are experiencing hearing loss are Hearing Compensation Behavior and Sensory Function: Hearing. Additional NOC labels that are related to the functional consequences of hearing loss are Communication, Depression Level, Leisure Participation, Loneliness Severity, Personal Safety Behavior, Social Involvement, and Social Interaction Skills. Nursing interventions to achieve these outcomes are discussed in the following section.

**Wellness Opportunity**
Nurses can use the wellness nursing diagnosis of Readiness for Enhanced Communication for older adults who are willing to explore possibilities for improving their hearing through health promotion interventions.

**NURSING INTERVENTIONS FOR HEARING WELLNESS**
Nursing interventions to promote hearing wellness for older adults focus on preventing hearing loss, helping older adults compensate for hearing deficits, and using communication methods that facilitate optimal communication. Specific interventions to achieve these goals are discussed in detail in the following sections. Use any of the following pertinent Nursing Interventions Classification labels in care plans: Communication Enhancement: Hearing Deficit, Ear Care, Environmental Management: Safety, Environmental Management: Risk Protection, Health Education, Health Screening, Health System Guidance, or Risk Identification.

**Wellness Opportunity**
Nurses can emphasize that even though interventions to prevent hearing loss ideally begin early in life, it is never too late to begin protecting ears from noise.

**Promoting Hearing Wellness for All Older Adults**
For all older adults, it is important to correct the misconception that hearing loss is an inevitable and inconsequential effect of growing older. Emphasize that all people can take actions to protect their hearing and teach older adults...

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**Unfolding Case Study**

**Part 2: Mr. H. at 69 Years of Age** (Continued)
Recall that Mr. H. is a 69-year-old participant in activities at the local senior center where you are the nurse. You are meeting with Mr. and Mrs. H. to discuss Mrs. H.’s concerns about her husband’s hearing problem.

**THINKING POINTS**
- Which of the questions and considerations in Boxes 16-2 and 16-3 would you use in assessing Mr. H.?
- Would you involve Mrs. H. in any part of the assessment? If so, how would you involve her?
- What health promotion advice would you give Mr. H. at this time?
Closed-captioned televisions, which include all TVs manufactured since the 1990s, substitute visual cues for auditory cues. A personal listening system, which consists of a small, battery-powered amplifier and headphones, can be used easily in any setting. A small amplifying device can be attached to a telephone receiver. Some cell phones are designed to accommodate people who use hearing aids or need amplification. Vibratory stimuli can be used as a substitute for an alarm clock.

Advantages of assistive listening devices over hearing aids include lower cost (usually) and the ability to share a device among several people. In addition, these devices are less intrusive than hearing aids and do not require as much manual dexterity. Figure 16-5 shows several examples of devices that can be used to enhance communication with someone who is hard of hearing. Nurses can teach older adults and their caregivers about using assistive listening devices as a substitute for, or as an adjunct to, hearing aids. Many public places, including churches, theaters, and government buildings, provide portable assistive listening devices, and hearing-impaired people can ask about the availability of such devices.

Compensating for Hearing Deficits

When providing care for older adults with hearing loss, nurses can encourage the use of Hearing Health Care Professionals, as described in Box 16-7. Interventions for hearing loss include sound amplification with assistive listening devices or hearing aids, surgical interventions, and auditory rehabilitation. Nursing interventions should focus on a referral for medical and audiology evaluations. Sometimes the nursing interventions also need to address barriers to obtaining a hearing aid, as discussed in the section on hearing aids.

Assistive Listening Devices

Any device that amplifies sounds for individual or group communication is categorized as an assistive listening device, as in the following examples:

- A stethoscope is an assistive listening device commonly used by health care workers.
- Megaphones and microphones are used for group communication.
- Closed-captioned televisions, which include all TVs manufactured since the 1990s, substitute visual cues for auditory cues.
- A personal listening system, which consists of a small, battery-powered amplifier and headphones, can be used easily in any setting.
- A small amplifying device can be attached to a telephone receiver.
- Some cell phones are designed to accommodate people who use hearing aids or need amplification. Visual stimuli, such as flashing lights, can be used as a signal for a doorbell.
- Vibratory stimuli can be used as a substitute for an alarm clock.

Preventing and Alleviating Impacted Cerumen

Nurses promote hearing wellness through interventions and health education aimed at alleviating or preventing hearing impairment caused by impacted cerumen. Clinical practice guidelines emphasize the importance of all health care professionals assessing for impacted cerumen and teaching patients about proper ear hygiene (Schwartz, Magit, Rosenfeld, et al., 2017). Box 16-6 summarizes current evidence-based recommendations for patient teaching and direct interventions related to impacted cerumen. Keep in mind that monitoring and referrals are essential nursing interventions for older adults who have recurrent episodes of impacted cerumen, especially for those who use hearing aids.

See ONLINE LEARNING ACTIVITY 16-5: RESOURCES FOR HEALTH PROMOTION ABOUT HEARING at http://thepoint.lww.com/Miller8e
Studies comparing two or more cerumenolytic agents indicate that any type of cerumenolytic is better than no treatment, but no particular agent is more effective than other.

**Interventions for Cerumen Impaction**

- The goal of clearing the cerumen is to alleviate symptoms or improve hearing; this does not necessarily involve the removal of all cerumen.
- Impacted cerumen is removed cautiously by qualified professionals by a variety of methods, including irrigation, cerumenolytic agents, and manually with a specialized instrument.
- Instillation of cerumenolytic agents 15 minutes or for several days prior to the removal improves the success of the treatment.
- Ear irrigation should not be performed on patients with a history of ear surgery or those who have any abnormality of the ear canal or a nonintact tympanic membrane; it should be used cautiously in patients with diabetes.
- Patients may be taught to self-irrigate with a bulb syringe; however, jet irrigation should not be used for self-care.
- Interventions for preventing recurrence include irrigation with bulb syringes and regular use of cerumenolytic agents or alcohol or hydrogen peroxide drops.

**Potentially Harmful Interventions**

- Cotton-tipped swabs should not be used because they can cause further impaction and other complications; they may even be the cause of the original impaction.
- Daily use of olive oil drops or sprays.
- Home use of oral jet irrigators and cotton-tipped swabs is associated with increased risk of damage to the ear canal.
- Ear candling (also called ear coning or thermos-auricular therapy) is a commonly used alternative practice for cerumen removal. Research indicates that ear candling is not effective and is associated with considerable risks, including burns, otitis externa, tympanic membrane perforation, and conductive hearing loss.

an essential teaching point is stressing the importance of obtaining an initial evaluation by a qualified hearing care professional, so reversible causes of hearing loss are identified and the most appropriate interventions are initiated.

Despite the major improvements during recent decades, only 67% to 86% of adults who would benefit from a hearing aid actually use one (National Academies of Sciences, Engineering, and Medicine, 2016). Nurses can address negative attitudes and have a positive effect on the use of hearing aids by helping older adults to explore the many options for amplification, as described in Box 16-8. When working with older adults in residential or other institutional settings, it is crucial to promote access to hearing aids and ensure that individuals have the opportunity to try them out and make an informed decision about whether to use them.

**Hearing Aids**

A **hearing aid** is a battery-operated device that consists of an amplifier, a microphone, and a receiver. Because of many recently evolving technologic advances, selection of hearing aids has become increasingly complex. Figure 16-6 illustrates commonly available types according to style.

Although it is impossible to know about all the available types of hearing aids, it is important to teach older adults about general principles related to selection of hearing aids. For example, federal law requires that a medical evaluation be performed before the sale of a hearing aid; however, this requirement can be waived by fully consenting adults. Thus, nurses can play a role in promoting access to hearing aids and helping older adults make informed decisions about their use.
Avoid dropping the aid on a hard surface; when handling it,
considerations for selection of style include features and cost
available features of prescribed hearing aids include feed
(also called aural or audiologic
levels of technology, from simplest to most complex, are
obtain a medical evaluation to identify treatable causes of
obtain initial information about hearing aids from a speech and
and consumer organizations, rather than primarily from
obtain information about various
turn on the aid or turn off the aid when not in use.
if financial limitations are a concern, check with the Audient
During the initial evaluation, obtain information about various
ask about audiology rehabilitation programs to improve
communication skills and adjustment to hearing loss.
if financial limitations are a concern, check with the Audient
allergy (National Academy of Sciences, Engineering, and Medicine, 2016).
Auditory rehabilitation programs can improve cognitive
and social function in older adults, rates of utilization
are low, and these programs are not widely available
ear mold or wax protection systems.
Disposable hearing aids are the least expensive (usually
levels of technology, from simplest to most complex, are
levels of technology, from simplest to most complex, are
available features of prescribed hearing aids include feedback
cancellation, directional microphones, multiple channels,
and battery indicator, and wax protection systems.
keep it over a soft or padded surface.
solutions.
and a toothpick or pipe cleaner for the channel.
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a speech-language pathologist. Speech and hearing centers, which are often affiliated with medical centers or universities, are good sources of information about auditory rehabilitation programs. Information is also available through Internet resources, such as the American Speech-Language-Hearing Association.

Technology to Promote Wellness in Older Adults

In addition to teaching about hearing aids and assistive listening devices, nurses can suggest the use of a broad range of technology-based products that are available for improving safety and quality of life for people with a hearing loss, as in the following examples:

- Wearable or portable notification system that connects with devices in the home (e.g., phone, doors, windows, motion sensors, smoke or carbon monoxide detectors) to provide alert via vibration, flashing lights, or amplified sound
- Apps for iPads, smartphones, or portable devices that provide captioning for video programs or audio–video programs, such as FaceTime or Netflix
- Vibrating watches or alarm clocks
- Flashing lights and amplifiers for cell phones
- Flashing lights for weather alerts

The following websites include information about such products:

- ADICO Hearing Products, www.adicohearing.com
- Alexander Graham Bell Association for the Deaf, www.agb.org
- Harris Communications, www.harriscommunications.com
- Hearmore Products for Independent Living, www.hearmore.com
- MaxiAids, www.maxiaids.com

Cochlear Implants

A cochlear implant is a small, complex electronic device that consists of an external portion, which is magnetically held in place behind the ear, and an internal component, which is surgically implanted under the skin. Cochlear implants bypass damaged portions of the ear and stimulate the auditory nerve, sending signals directly to the brain. The Food and Drug Administration approved these medical devices for use in adults in the 1980s and for use in children in 2000. Since 2005, the Centers for Medicare and Medicaid have been expanding the criteria for having cochlear implants covered by health insurance.

Currently, there is much evidence to support consideration of cochlear implants for older adults. A study of cochlear implants in patients age 75 and older found that all patients experienced significant improvements in speech perception and concluded that age should not be a limitation for surgery (Wong, Moran, & O’Leary, 2016). Studies also have found that patients aged 65 to 86 years with serious sensorineural hearing loss who subsequently get cochlear implants experienced improved communication, higher quality of life, and improved performance on cognitive testing (Aimoni, Ciorba, Hatzopoulos, et al., 2016; Cosetti, Pinkston, Flores, et al., 2016; Rohloff, Koopmann, Wei, et al., 2017). Based on current evidence, it is important to encourage older adults to explore options for surgical interventions when hearing loss is not adequately improved with other interventions.

When caring for older adults with cochlear implants, nurses need to document information about the external component and ensure that the device is not lost. Another nursing implication is that some implanted hearing devices are affected by or interfere with magnetic resonance imaging (MRI), so it is essential to obtain information about compatibility if an MRI is being considered.

Communicating With Hearing-Impaired Older Adults

Good communication techniques are essential in assisting older adults to compensate for hearing deficits. The primary functional consequence of presbycusis is a diminished acuity for high-frequency sounds, which is exacerbated by fast-paced speech and environmental noise. Therefore, communication interventions are directed toward improving the clarity of words, slowing the rate of speech, and eliminating environmental noise and distractions. Verbal techniques that enhance auditory communication should be augmented by nonverbal techniques, such as body language and written communication, as described in Box 16-9. Nurses can apply...
these techniques and use this box for teaching caregivers how to improve communication with hearing-impaired people. In recent years, increased attention has been directed toward planning or modifying environments to diminish background noise and to improve the ability of people to hear. Although some noise control modifications, such as using window draperies, are relatively simple and can be applied to many settings, other measures, such as selection of building materials, need to be implemented while environments are being designed.

Unfolding Case Study

Part 3: Mr. H. at 83 Years of Age

Mr. H. is now 83 years old and has been a widower for 1 year. He has given up hunting and woodworking because he developed Parkinson disease 11 years ago and cannot manage the necessary fine motor movements. He continues to fish seasonally, play poker monthly, and smoke one pack of cigarettes per day. In addition to Parkinson disease, he has hypertension and coronary artery disease. He still lives in his own home and attends the local senior center for meals and social activities three times a week. His hearing loss has progressed to the point that he has difficulty with phone conversations and has to turn the television up loud. He cannot hear the doorbell. At the senior center, participants avoid conversations with him because he has difficulty hearing.

You are the nurse at the senior center, and you see him during the weekly “wellness clinic” for blood pressure checks. One week, he tells you that his daughter is upset with him because he never answers his phone when she calls, and she cannot have a decent phone conversation with him. She lives in another state and worries about him. She has offered to pay for a hearing aid evaluation for him, but he has told her, “Those things stick out like a sore thumb and they don’t do any good anyway. I can hear anything I want to hear and there’s a lot I don’t care to hear, so why should you spend a lot of money for something that I won’t use.” He asks your opinion about this and is wondering whether he should at least get a checkup to pacify his daughter. He expects he will be told that nothing can be done and that his daughter will have to be satisfied with the situation.

Thinking Points

- Which information in Box 16-2 would be most pertinent to obtain at this time?
- What myths and misunderstandings influence Mr. H.?
- What nursing diagnosis would you apply to Mr. H.?
- Which information in Boxes 16-5 and 16-6 would be pertinent to this situation?
- What health promotion teaching would you do to address Mr. H.’s resistance to having his hearing evaluated?
- What additional health promotion advice would you give?
- Because you usually see Mr. H. weekly, you can develop a long-term teaching plan. How would you establish priorities for immediate and long-term goals?

QSEN Application

<table>
<thead>
<tr>
<th>QSEN Competency</th>
<th>Knowledge/Skill/Attitude</th>
<th>Application to Mr. H.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient-centered care</td>
<td>(K) Examine common barriers to active involvement of patients in their own health care processes</td>
<td>Use assessment boxes and the HHIE-S (Figure 16-4) to help identify and address Mr. H.’s resistance to obtaining a hearing evaluation</td>
</tr>
<tr>
<td></td>
<td>(S) Elicit patient values, preferences, and expressed needs</td>
<td>Emphasize the importance of obtaining a medical evaluation to identify reversible causes of hearing impairment</td>
</tr>
<tr>
<td></td>
<td>(A) Value seeing health care situations “through patients’ eyes”</td>
<td></td>
</tr>
<tr>
<td>Evidence-based practice</td>
<td>(S) Base individualized care plan on patient values, clinical expertise, and evidence</td>
<td>Provide a list of reliable and noncommercial sources of information about hearing loss (see Online Learning Activity 16-5 on the Point) and encourage him to obtain information and an evaluation</td>
</tr>
</tbody>
</table>
EVALUATING EFFECTIVENESS OF NURSING INTERVENTIONS

Nurses observe compensatory behaviors of hearing-impaired older adults to evaluate the effectiveness of interventions, as indicated by the following:

- Improved ability to communicate
- Effective use of hearing aids and amplification devices
- Increased participation in social activities
- Environmental modifications to eliminate background noise
- Participation in auditory rehabilitation program

Evaluation of effectiveness of interventions varies in different health care settings. For example, nurses in short-term settings provide health education as part of a discharge plan that includes information about resources for hearing evaluations. Evaluation of the effectiveness of this intervention is based on the patient’s positive response to the nurse’s suggestions, but the nurse is not likely to know whether the person followed through with the referral and had beneficial outcomes. In home, community, and long-term care settings, nurses address long-term goals by facilitating referrals for audiology services. In these settings, the evaluation of interventions is based on the person’s use of additional resources to improve communication abilities.

See ONLINE LEARNING ACTIVITY 16-7: EVIDENCE-BASED PRACTICE at http://thepoint.lww.com/Miller8e

Unfolding Case Study

Part 4: Mr. H. at 89 Years of Age

Mr. H. is an 89-year-old widower who has had Parkinson disease for 17 years. Presbycusis is listed as an additional diagnosis on his medical record. He is being admitted to a nursing home because his condition has declined to the point that his daughter, Ms. D., can no longer manage his care in her home, where he has lived for several years. He is medically stable but needs assistance in all activities of daily living.

During the admission interview, you notice that Mr. H. has difficulty hearing your questions and that he frequently asks his daughter to give the requested information. He shows no significant cognitive deficits, but he seems to have difficulty understanding verbal communication. When you ask about any hearing impairment, Ms. D. tells you that her father has used hearing aids for 5 years and has been reevaluated periodically at a speech and hearing center. Two months ago, he obtained new hearing aids, but wears them only for one-on-one conversations with her. Because of Mr. H.’s tremors and difficulty with fine motor movements, Ms. D. cares for his hearing aids and assists with their insertion and removal.

Ms. D. has encouraged her father to wear his hearing aids during family gatherings, but he says the noise from small children is too annoying. Except for family gatherings, Mr. H. has very few opportunities for social interaction, and he has become more and more withdrawn. He used to enjoy playing poker, but has not played in several years because all of his friends have died. Now he spends much of his time watching closed-captioned television programs. Ms. D. hopes that her father will respond to the opportunities for social interaction provided at the nursing home and that his quality of life will improve.

NURSING ASSESSMENT

In addition to nursing diagnoses related to Mr. H.’s chronic illness and self-care deficits, you identify a nursing diagnosis of Impaired Social Interaction related to the effects of hearing loss. You select this as a nursing diagnosis because Mr. H.’s hearing impairment has already been evaluated and sound amplification devices are available to him.

NURSING CARE PLAN FOR MR. H.

In your care plan, you address the psychosocial consequences of Mr. H.’s hearing impairment. Your nursing care is directed toward improving his social interaction through the use of available devices and through other communication techniques that will enhance his social interaction skills.
**NURSING CARE PLAN FOR Mr. H.**

<table>
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<tr>
<th>Expected Outcome</th>
<th>Nursing Interventions</th>
<th>Nursing Evaluation</th>
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<tr>
<td>Mr. H. will develop effective communication techniques for resident–staff interactions</td>
<td>During the initial interview, talk with Mr. H. and Ms. D. about the importance of good verbal communication with staff; emphasize the need for the staff to get to know Mr. H. so his needs can be addressed. Ask Mr. H. to wear his hearing aids during all one-on-one interactions with staff. Use effective communication techniques when talking with Mr. H. (as in Box 16-9). Make sure all staff members provide appropriate assistance with insertion and removal of Mr. H.’s hearing aids. Include hearing aid maintenance as part of the daily responsibilities of the nursing aide.</td>
<td>Mr. H. will wear his hearing aids during all one-on-one conversations with staff. Mr. H. will report satisfactory verbal interactions with the staff. Mr. H.’s hearing aids will be maintained in good operating condition.</td>
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<tr>
<td>Mr. H. will engage in social interaction with one other resident</td>
<td>During the initial care plan conference, identify several other residents who might converse with Mr. H. Ask the staff to encourage one-on-one conversations between Mr. H. and the selected resident (e.g., suggest that they watch closed-captioned television programs together). Ask Mr. H. to wear his hearing aids during one-on-one interactions with residents. Provide assistance with inserting and removing hearing aids as needed. Provide a quiet environment for one-on-one conversations with other residents.</td>
<td>Mr. H. will wear his hearing aids at least once daily for a conversation with one other resident.</td>
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<tr>
<td>Mr. H. will engage in small group activities with other residents</td>
<td>During the first monthly care review conference, ask the activities staff to invite Mr. H. to a poker game with three other residents in the small group room. Make sure that environmental noise is controlled as much as possible.</td>
<td>By the second month in this facility, Mr. H. will participate in weekly poker games with three other residents.</td>
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**THINKING POINTS**

- What nursing responsibilities would you have with regard to addressing Mr. H.’s hearing impairment? How would you work with other staff to implement the care plan described in the concluding case example?
- What are some of the advantages and disadvantages of hearing aids in a long-term care setting? How would you address the disadvantages?
- How would you involve Ms. D. in the care plan to address Mr. H.’s hearing impairment?
- If Mr. H. were in an acute care setting, how would you address his hearing problem?

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**Chapter Highlights**

**Age-Related Changes That Affect Hearing** *(Figure 16-1; Table 16-1)*
- External ear: thicker hair, thinner skin, increased keratin
- Middle ear: less resilient tympanic membrane, calcified ossicles, stiffer muscles and ligaments
- Inner ear and auditory nervous system: fewer neurons and hair cells, diminished blood supply, degeneration of spiral ganglion and central processing systems
- Auditory nervous system: degenerative changes in auditory nerve and central nervous system

**Risk Factors That Affect Hearing Wellness** *(Figure 16-2; Box 16-1)*
- Genetic predisposition to otosclerosis
- Exposure to noise
• Impacted cerumen
• Ototoxic medications: aminoglycosides, aspirin, loop diuretics, quinine
• Disease processes: otosclerosis, Paget disease, Ménière disease

Functional Consequences Affecting Hearing Wellness (Figure 16-3; Table 16-1)
• Presbycusis: diminished ability to hear high-pitched sounds, especially in the presence of background noise
• Predisposition to impacted cerumen
• Psychosocial consequences: depression, social isolation, decline in cognitive function, increased dependency, diminished quality of life

Pathologic Condition Affecting Hearing: Tinnitus
• Tinnitus: persistent sensation of noises that do not originate in the external environment

Nursing Assessment of Hearing (Figure 16-4; Boxes 16-2 to 16-4)
• Screening tool: HHEI-S
• Past and present risk factors (e.g., use of ototoxic medications, noise exposure, family history of otosclerosis)
• Attitudes about hearing aids if impairment is present
• Impact of hearing impairment on communication and quality of life
• Behavioral cues to impaired hearing
• Otoscopic examination for impacted cerumen
• Tuning fork tests for hearing

Nursing Diagnosis
• Readiness for Enhanced Communication
• Additional diagnoses related to functional consequences of hearing loss: Anxiety, Impaired Social Interaction, Ineffective Coping, Risk for Injury, and Risk for Loneliness

Planning for Wellness Outcomes
• Improved communication
• Increased social interactions
• Improved quality of life
• Increased safety and functioning

Nursing Interventions for Hearing Wellness (Figures 16-5 and 16-6; Boxes 16-5 to 16-8)
• Health promotion teaching to address modifiable risk factors: smoking, exposure to noise, use of ototoxic medications
• Removing and preventing impacted cerumen
• Promoting referrals for appropriate professional services
• Using assistive listening devices
• Teaching about the use and care of a hearing aid
• Communicating with hearing-impaired older adults
• Compensating for hearing deficits by using hearing devices and hearing aids

Evaluating Effectiveness of Nursing Interventions
• Improved communication
• Use of appropriate amplification aids
• Appropriate environmental modifications
• Increased participation in social activities

Critical Thinking Exercises
1. Describe presbycusis and explain the functional consequences of this condition as it affects the everyday life of an older adult.
2. What risk factors would you consider in an 83-year-old person who complains of recent problems with hearing?
3. What advice would you give to someone who asks you about a brochure she received from a hearing aid company that offers free hearing screenings describing a new high-powered hearing aid? The person has trouble hearing but has never had an evaluation.
4. Describe at least 10 ways in which you can adapt your communication for a hearing-impaired person.
5. Find at least one resource (not a hearing aid dealer) in your community that you could recommend to an older adult who needs a hearing evaluation.
6. Visit at least three Internet sites that provide educational materials about hearing impairment, and choose the one you think would be best for obtaining health information brochures.

For more information about the topics discussed in this chapter, be sure to check out the interactive Online Learning Activities and other helpful resources at http://thepoint.lww.com/Miller8e

REFERENCES


