

**Ensuring Better Health Care for the Elderly**  
**A Manual for Trainers of Nurses**

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## Preface

With increased access and advancement in health care combined with several other factors people all over the world are now living longer than before. It is natural, therefore, that all health professionals including nurses are likely to encounter older patients frequently in their work and service. In most developing countries health of the older person has not received the attention it deserves due to several reasons. Consequently basic training of nurses does not provide adequate training in the principles and practice of “Ensuring better health care for the Elderly”.

In view of the changing population profile, there is an urgent need to provide an understanding of the health and disease profile of the older people and their care to nurses through both short-term and ongoing training. This manual is meant for trainers who will provide training to nurses working in hospitals as well as community settings (primary health care settings).

The information on ageing contained in this manual is meant to be incorporated into the everyday working practice of nurses. Issues which affect the older people in health and disease have been dealt here. The manual comprises training plans designed to help nurses to learn how best to manage older individuals in the community. The trainers are free to include issues which they feel are important in their setting and can develop additional modules after referring to standard textbooks.

The total duration of the program should ideally be about 24 hours spread across five days. This program should ideally be incorporated into ongoing training programs. However it can also be conducted as a stand alone and possibly more extended program if resources are available. However, trainer can modify the duration and the contents of the course depending on the realities at the grassroots level.. Each module has a set of learning objectives which the trainee is expected to understand and be able to put into practice after the completion of the training. The trainers should decide on the amount of learning materials to be passed on to the trainees, which is always helpful. Assessment of the trainees is essential for measuring the achievement of the learning objectives. Pre- and post-training assessment of assessment at the completion of each module or each day can achieve this objective. Assessment of adult learners is both a sensitive and confidential issue and trainers should be tactful while deciding on the assessment methodology they choose to implement.

## ***Introduction: Why we need to learn more about older people?***

In the twentieth century most nations experienced tremendous rise in population despite devastating wars, famines, floods and other natural as well as human-made calamities. The main reason for this global population explosion is the socio-economic growth in most societies, discovery of antibiotics and vaccines and better public health practices. People now not only survive the early life mortality but live long into old age. The rise in the number in the segment of older people (aged 60 years or more) in the population has been much more than any other segment. This phenomenon of demographic change in the population has also affected India. In the previous 100 years the population of older people in India has risen from 12 million in 1901 to an estimated 75 million in 2001. The number is likely further to go up to 168 million in the year 2025.

The proportion of older people in the population is expected to rise from 5.5% in 1951 to a projected 12.5% in 2025, though the absolute number rose nearly by three times. This discrepancy is the result of high birth rate despite improvement in all other adverse determinant of population growth. Life expectancy for males in India has shown a rise from 42 years in 1951-60 to 61 years in 1999-2001 and this is likely to increase to 67 years in 2011-16. In the case of females, the increase in expectation of life has been higher, that is 63 years in 1999-2001 to 69 years in 2011-16. During the period 2001-2005; the expectancy of life for people aged 60 years was 16 years and for those at 70 it was 10 years. The implications of these figures for the nurses and other health professionals are:

- Large number of older people requiring care and this population will continue to grow;
- Considerable period of life after 60 or 70 requiring care;
- No decline in the number or proportion of other vulnerable people requiring care in the population; and
- Competition among various groups of people for resources (time, finances, manpower), which are any way scarce in most developing nations that are resource-restricted.

### **Challenges facing health care for the elderly:**

With the change in the composition of the population and advances in medicine and public health practices, the morbidity and mortality pattern in most developing countries including India has changed considerably. A major shift from acute communicable diseases with high mortality to chronic non-communicable diseases with high disability has been observed all over the world. These transformations in morbidity and mortality figures require that public health programs for non-communicable diseases be initiated while continuing control and surveillance of infectious diseases.

This implies that there is a double burden of disease for developing societies from the point of view of health economics. The heavy load of non-communicable degenerative diseases that produce considerable disability and require costly treatment, along with killer communicable diseases, will have to be borne by health workers who are not trained to do so. As non-communicable diseases are more frequent in older

individuals, the focus of most public health activity will gradually shift towards older people.

Nurses and health professionals have to be aware of the complexity of care of the older people.

- Health care needs of the elderly are different from those of the other age groups.
- The structural, functional, mental and emotional status of an older patient is not same as a younger adult.
- Manifestations and course of the disease can be very unpredictable and requires specialized care.
- The goals of health interventions are more likely to care then cure. Consequently; restoration of function and improvement of quality of life gets priority over eradication of disease.

### **Role of nurses in supporting the older patient**

The nurse as a member of the team of health professionals has to understand her role in care of the older people very clearly; which include:

- Support: Help older people in staying independent and functional
- Knowledge: Know the age related norms of body structure and function
- Awareness: Differentiate age related changes from pathological states
- Identification: Detect new risk factors and deficiencies in activities of daily living of the older person quickly as markers of new disease
- Monitoring: Monitoring the effectiveness and side effects of medication
- Risk Reduction: Assist older people in health promotion and disease prevention
- Prevention: to prevent secondary complication in hospital elderly , by identifying warning symptoms at early stages.
- Training and motivation of care giver for continuum of care at home after discharge.

## ***Module 1: Why do we age?***

### **Learning objectives**

On the completion of this module the trainee should be able to:

1. Understand the biological basis of ageing
2. Understand the psychological and social aspects of ageing.

### **Contents**

- Definition of ageing
- Mechanism of ageing
- Ageing in the psychosocial perspective

### **Definition of ageing**

Ageing is the progressive and generalized impairment of functions resulting in the loss of adaptive response to stress and in increasing the risk of age-related diseases. The overall effect of these alterations is an increase in the probability of dying, which is evident from the rise in age-specific death rates in the population.

We age because we live long. It has been considered that all living beings have predetermined life span or the maximum possible length of life. Human life span is among the high life spans and is around 122 years. Similarly most animals have life span determined by their genetic composition.

It must be remembered that most animals in the wild nature do not live to old age. Most of them succumb to natural calamities and injury or are eliminated in youth as a part of the food chain. It is only the human beings in organized and protected living survive to old age and bear the ravages of an ageing body. It is uncertain as to how and why the body ages. Several mechanisms have been suggested, but none of them have widely accepted.

### **Some important mechanisms of ageing**

Several explanations have been proposed to explain ageing as a biological process. These include:

- **Genetic:** Genes determine the lifespan and the children of older people are expected to survive longer. Thus genes may have a role to play in the ageing process.
- **Functioning Wear and Tear:** Wear and tear of important organs by continuous functioning
- **Structural Changes:** Accumulation of free radicals and damage of intracellular structures by them
- **DNA Repair:** Loss of important genetic material during DNA repair,
- due to deficiency of key enzymes.
- **Hormonal Deficiencies:** Exhaustion of production and deficiency of important hormones: namely: growth hormone, androgen, estrogen and thyroid hormones.

## **Evolutionary basis of ageing**

Ageing is possibly also being linked to the evolutionary process. Survival after the reproductive era is not beneficial to the propagation of species because it leads to over-crowding and competition for resources for survival. Ageing is beneficial in the weeding out of species not engaged in active reproduction if it survives predatory elimination, accidents, environmental hazards and disease. It is thus likely that ageing is not physiological but a natural phenomenon mediated by genes.

## **Psychosocial aspects of ageing**

With the changes in structure and function of the body and different organs, several changes also take place in the attitude, behavior, thinking and mental state of the older person. In many cultures there is a feeling that one is not able to do things that one used to do earlier leading to a sense of helplessness, despair, loss of the previous role etc. The society also expects a change in role after a certain age as a norm. Older people are expected to give up their place for the younger generation. There is a tendency to make older people feel unproductive, dependent and unwanted.

Contrary to such negative image of old age, in most traditional society old age has a definitive role and value. Most people age in good health of body and mind and are assets for the family, community and the society. They have definitive economic value and with awareness of health promotion measures may not become a burden for the health system or society.

The nurse has a role in highlighting these positive aspects of ageing while working in the community. Older people need to be identified and included as resources for community development as well as caregivers of fellow older people.

## ***Module 2: Introduction to care of the older patient learning objectives***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Understand the scientific basis of health care of the older patient

### **Contents**

Morbidity in old age

Mortality in old age

Important concepts in the practice of geriatric medicine

Stereotyping of ageing

Assessment of the older patient

### **Morbidity in old age**

In the previous module age related changes in different organ systems have been enumerated. Nation wide surveys in the community have shown that nearly half of the older people have one or more chronic disease. Further nearly forty percent of them have one or more physical disability. These diseases and disabilities include age related changes of organ systems as well as pathological conditions common to all age groups.

Commonly based studies have identified the following disease as the most common diagnoses among older patients

- Cataract
  - Osteoarthritis
  - Hypertension
  - Chronic obstructive pulmonary disease
  - Ischemic heart disease
  - Diabetes
  - Benign prostatic hypertrophy
  - Upper and lower gastrointestinal dysmotility: dyspepsia and constipation
  - Depression
  - Falls leading to fractures
  - Urinary incontinence
  - Stroke
  - Dementia
- These diseases account for nearly 85% of the diagnosis in older people.
  - Cancers of most organs are common in older patients.
  - Older people with diseases of early adulthood tend to manifest their long term complications.
  - Older people have multiple diseases and disabilities. On an average an older patient may have three to four diagnoses unrelated to each other and each requiring some intervention or the other.
  - Among the functional disabilities both in the hospital as well as the community; visual disability and difficulty in hearing are the commonest.

- Disabilities of locomotion and inability to carry out activities of daily living affect a small proportion of older people but can prove to be a heavy burden for the caregivers.
- Cognitive impairment or failing memory and intellect affects up to ten percent of older people, which again require substantial amount of care.
- Older people above 80-85 years of age tend to have predilection for certain diseases such as recurrent stroke, dementia, osteoporosis and fractures, cardiac failure and physical frailty.
- Most of the disease and disabilities of old age as mentioned above can not be cured in the literal sense but can be managed for alleviation of symptoms and handicaps. The health worker should refer and guide the older person to physicians for appropriate management which includes medicines, surgery, aids and appliances; and physiotherapy. Counseling and encouragement to improve the quality of life of the older person.

### **Mortality in old age**

By definition old age is associated with a high risk of death from diseases and their complications. It must be remembered that older patients have late recovery from illness, have an extra risk of complications from surgical treatment and high risk of adverse side effects of medicines. The common causes of death among older people in rural India are as following:

- Bronchitis and pneumonia
- Ischaemic heart disease
- Stroke
- Cancer
- Tuberculosis

In urban India all these conditions hold true and in addition accidents and injuries also tend to kill substantial number of older patients.

### **Important concepts in the practice of geriatrics**

The manifestation of disease and its course in old people is different from that in younger individuals. It is important to remember the following concepts of geriatric medicine:

- The organ which is most symptomatic is probably not the organ which is diseased in a particular situation.
- Presentation of disease is often atypical and should not be considered as an exception.
- Older patients get symptomatic early but seek health care much later due to socio-economic reasons.
- Some symptoms and signs, namely; anemia, confusion and recent onset of incontinence warrant immediate attention and may associated with several life threatening conditions.

- All clinical abnormalities complained or detected cannot be given equal importance and needs to be prioritized. problem oriented approach is preferred to disease oriented approach in older person.
- A single diagnosis for many coexisting symptoms is not possible in old age. Many diseases coexist and require multiple management strategy.
- Multiple small deficits in an older patient often produce major disability and multiple small interventions produce dramatic results.
- Older people often require rapid access to health care and may need specialized care.
- Apart from medicines and surgeries; physiotherapy and counseling have major role in the care of older patients.
- Contrary to popular belief, all levels of prevention are effective in old age. The health care worker therefore must provide preventive intervention in all situations.

### **Stereotyping of Ageing**

By stereotyping we try to describe or to portray a group in a similar, oversimplified, conventional manner which prohibits individuality. There is always a tendency to stereotype groups among health professionals as well as social scientists and economists. However there is scientific evidence to suggest the contrary. Some examples of stereotyping are provided below.

<b>Myths</b>	<b>Facts</b>
All old people are diseased	Many older people are likely to age in good health than to become decrepit and dependent.
All old people have problem in remembering.	Older people can, and do, learn new things. Two key factors predict strong mental function in old age. 1) regular mental activity 2) a strong social support system Many older people are productive. Some work for money while others provide help in household chores, child rearing and volunteering in social institutions. All these activities have economic value.
Older people cannot support themselves and are a burden on the society.	

- Stereotyping of old age and older persons can seriously harm them. It can contribute to discrimination, loss of self-esteem, and physical and mental decline in older persons.
- Stereotyping also counteracts positive interventions for health promotion.
- Quality health care for older patients requires abolition of stereotyping from the minds of health professionals.

## **Assessment of the older patient**

Clinical evaluation of the older patient is no different from that of a younger patient. However, certain issues need detail assessment in old age which may be overlooked in a younger patient. The components of assessment of an older patient are physical, functional, psychological (mood and mental state), financial, social support and care facility; environmental and overall quality of life. The nurses are in the best position to assess financial status, social support and availability of care facility objectively .

### ***Baseline evaluation***

- In addition to usual clinical evaluation (history-taking, physical examination and laboratory investigations), emphasis is placed on the assessment of different levels of functional ability in the form of activities of daily living.
- **Basic activities of daily living.** These are independent of culture and education and include bathing, dressing, going to the toilet, transferring (moving from place to place), continence and feeding.
- **Intermediate activities of daily living.** These are dependent on culture and socioeconomic status and include using telephone, shopping, preparing meals, housekeeping, cleaning clothes, using public transport, visiting health care services taking medication and handling money and investment, banking and paying taxes etc.
- **Advanced activities of daily living.** These are dependent on culture, socio-economic status and the past profession, and include recreational, occupational and community activities.
- In addition, mobility (gait and balance), nutritional status (adequacy and deficiency), social support, financial support, and home and immediate environment needs to be assessed.
- Assessment procedures in the form of standardized scales are available for all these parameters. However, scales for each culture and socioeconomic setting differ greatly and need to be developed indigenously.

### ***Evaluation of newly-worsened health status or newly-discovered risk factor:***

- Evaluation and management of newly-worsened health status (physical and mental) requires a certain degree of structural approach to achieve the best result.
- When an old patient has got new deterioration of health status or a newly discovered risk factor, a brief functional status evaluation comprised of basic activities of daily living, cognitive status evaluation and affective status evaluation

is essential. In the presence of a severe functional disability, the patient should be hospitalized for detailed multidisciplinary assessment and management.

- In the presence of mild to moderate dysfunction in a stable patient, the symptoms need to be analyzed carefully for a contributing cause. When a cause has been found it should be managed with drugs along with mobilization of care-giver support and rehabilitation in order to maximize function. However, when no cause is found, the dysfunction is managed with additional rehabilitation and care-giver support with similar result.
- When the functional evaluation reveals good function, the older patient needs to be assured and advised on positive health behavior and regular screening to prevent future disability.

### ***Multidisciplinary geriatric assessment***

- Ideally, geriatric assessment requires the involvement of experts from various disciplines, namely physician, social worker, nurse, physiotherapist, occupational therapist, dietician and pharmacist. Patients with cognitive impairment or sensory deficit require additional inputs from psychiatrists, ophthalmologists and audiologists. Such facilities are generally available in secondary and tertiary care hospitals. The role of the nurse in their assessment and management is immense, who has to help the physician in developing a care plan which is cost-effective from the point of view of time and financial resources.

*The basis principles of nursing hold well in all ages; however, the finer details greatly vary in the extremes of age. The discipline of geriatric care is meant to prevent avoidable death and improve the quality of life in old age.*

## ***Module3: Nursing of an older patient***

### **Learning Objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate the goals of caring an older patient
2. Discuss different problems of older patient from nursing perspective, plan the requisite nursing intervention and enumerate the expected outcomes from these intervention.

### **Contents**

Objectives of nursing care

Nursing diagnoses in older patients

Nursing interventions

Outcomes from interventions

Caring an older patient can often be challenging in view of complex interplay issues often related to health. Thus to provide successful and the objectives of providing nursing care to the elderly are to:

- Promote and maintain optimum level of health and function
- Detect health problems at an early stage
- Prevent deterioration of an existing disease condition
- Prevent further complications

### **Nursing Diagnoses, Expected Outcomes and Nursing interventions**

**1. Anxiety:** related to unfamiliar environment: signs and symptoms of current diagnostic tests; diagnosis and treatment plan; financial concerns; ability to perform usual roles and to live independently.

<b>Nursing Intervention</b>	<b>Expected Outcome</b>
<ul style="list-style-type: none"><li>▪ Orient to hospital environment, equipments and routine</li><li>▪ Introduce staff who will be participating in his/ her care</li><li>▪ Maintain a calm, unhurried, confident manner when interacting with patient</li><li>▪ Encourage verbalization of fear and anxiety, provide feedback</li><li>▪ Explain all diagnostic tests</li><li>▪ Instruct in relaxation techniques and encourage</li></ul>	The patient will experience a reduction in fear and anxiety.

participation in diversional activities

- Encourage patient to discuss his / her concerns about the cost of health care and about future living situations

**2. Altered tissue perfusion:** related to decreased cardiac output and peripheral pooling of blood associated with decreased venous returns resulting from the loss of muscle tone in extremities and venous dilation.

**Nursing Intervention**

**Expected Outcome**

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>▪ Maintain patient in a semi to high Fowler's position</li><li>▪ Instruct patient to avoid activities that create a valsalva response (e.g. straining to have a bowel movement, holding breath while moving) to maintain an adequate respiratory status</li><li>▪ Provide frequent small meals rather than three large ones</li><li>▪ Discourage intake of foods/fluids high in caffeine such as coffee, tea, chocolate and colas</li><li>▪ Discourage smoking</li><li>▪ Assist with range of motion exercise at least every four hours</li><li>▪ Instruct and assist patient to change position slowly</li><li>▪ Encourage ambulation as allowed and tolerated</li><li>▪ Instruct patient in benefits of regular isotonic exercise</li></ul> | <p>The patient will maintain adequate tissue perfusion.</p> |
|---|---|

**3. Altered respiratory function:**

- a) Ineffective breathing patterns: related to loss of alveolar elasticity, decreased chest expansion associated with calcification of costal cartilage and weakened respiratory muscles.

b) Ineffective airway clearance: related to stasis of secretions.

**Nursing Intervention**

- Place patient in a semi to high Fowler's position
- Maintain oxygen therapy as per instruction
- Monitor arterial blood gases
- Assist the patient to turn every two hours
- Instruct deep breathing exercises
- Maintain adequate hydration
- Instruct to avoid gas forming food / fluids (e.g. beans, cabbage, cauliflower, and carbonated beverages)

**Expected Outcome**

The patient will experience adequate respiratory function.

4. *Altered fluid volume- dehydration*: related to decreased fluid intake associated with diminished thirst sensation

**Nursing Intervention**

- Assess for factors that may precipitate dehydration
- Assess skin turgor, mucous membrane and urine output
- Maintain fluid intake of at least 2500 ml/day
- intravenous fluid therapy whenever necessary
- 

**Expected Outcome**

The patient will not experience dehydration

5. *Altered nutrition*: related to anorexia, dyspepsia and decreased ability of liver to synthesize proteins.

**Nursing Intervention**

- Determine the causes of inadequate intake
- Assist patient in selecting foods / fluids that meet nutritional needs as well as preferences
- Provide oral hygiene before meals
- Place patient in a high fowler's position for meals
- Provide noxious free, clean relaxed and pleasant environment
- Serve small portion of soft, ground nutritious foods / fluids
- Encourage a rest period before as well as after meals

**Expected Outcome**

The patient will maintain an adequate nutritional status

**6.: joint pain / stiffness:** related to degenerative changes in joint cartilage.

**Nursing Intervention**

**Expected Outcome**

- Support the affected extremities with hands or pillow
- Move affected extremity slowly and cautiously
- Mild exercise for affected joints in gentle circular motion
- Avoid stress weight bearing exercises
- 

The patient will experience diminished joint discomfort

**7. Sensory- perceptual alterations:** - related to diminished sensory nerve cell input

**Nursing Intervention**

**Expected Outcome**

- Provide adequate lighting in room at all times
- Avoid bright lighting and sudden changes in intensity
- Wear glasses
- Reduce environmental noise and speak louder and slowly with non-verbal cues when appropriate
- Assess temperature of bath water and heating pad before and during use
- Cool the hot foods / fluids before taking

The patient will demonstrate adaptation to altered sensory-perceptual function

**8. Impaired skin integrity:** related to increased fragility of skin associated with decreased nutritional status, age related dryness, loss of elasticity.

**Nursing Intervention**

**Expected Outcome**

- Inspect for pallor, redness and breakdown on bony prominence
- Position 2 hourly, massages with lotion in circular motion over bony prominences
- Keep the skin clean and bed linen wrinkle free and dry
- Avoid use of harsh soaps and hot water
- Maintain the adequate fluids requirement

The patient will maintain skin integrity

**9. Impairment physical mobility / Activity intolerance:** related to decreased muscle strength, reduced joint mobility

**Nursing Intervention**

**Expected Outcome**

- Keep supplies and personal articles within reach, use energy saving techniques
- Assist the patient in active and passive range of motion

The patient will maintain an optimum level of physical mobility and activity tolerance

- exercises
- Increase activity gradually as allowed and tolerated, provide rest periods in between the activity
- Instruct patient to participate in self- mobilization activities
- Encourage the support of significant others in ROM exercise, positioning and activity if desired
- 

**10. Self-care deficit:** related to impaired physical mobility, decreased activity tolerance visual impairment and lack of motivation.

**Nursing Intervention**

**Expected Outcome**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>▪ Develop a realistic plan for meeting daily physical needs</li> <li>▪ Schedule care at a time when patient is most likely to be able to participate</li> <li>▪ Keep needed objects within easy reach where the patient can identify</li> <li>▪ Allow adequate times for the accomplishment of self care activities and provide positive feed back</li> <li>▪ Assist with activities which the patient is unable to perform independently</li> <li>▪ Inform othe of patient's abilities to perform own care</li> </ul> | <p>The patient will perform self-care activities and activity restrictions imposed by treatment plea</p> |
|---|--|

**11. Altered pattern of urinary elimination:** related to retention / incontinence associated with medical surgical conditions.

**Nursing Intervention**

**Expected outcome**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▪ Avoid suppression of urge to urinate, provide privacy, assume normal position, run water, pour warm water over perineum</li> <li>▪ Treat the underlying causes like prostatitis or fecal impaction with sitz bath and enema or cholinergic drugs</li> </ul> | <p>The patient will maintain/ regain an optimum pattern of urinary elimination The patient will experience urinary continence</p> |
|--|---|

- Intermittent catheterization every 8 hours in combination with regular voiding attempts
- Perform perineal exercise
- Limit fluids intake in evening
- Avoid drinking beverages containing caffeine
- Assist with biofeedback and bladder retraining program
- Use fixed toileting schedule

**12. Altered bowel pattern:** constipation related to decreased fluids / foods intake.

**Nursing Intervention**

**Expected Outcome**

- Monitor bowel sounds
- Avoid the suppression of urge to defecate
- Maintain proper position, privacy, encourage to relax during attempts to defecate
- Encourage intake of high fiber foods, fluids and warm liquids
- Encourage isometric abdominal strengthening exercises and ambulation
- Develop regular time for defecation
- Administer laxatives

The patient will maintain optimum bowel elimination pattern.

**13. Altered thought process:** related to decreased cerebral functioning.

**Nursing Intervention**

**Expected Outcome**

- Maintain adequate respiratory status and oxygenation
- Carefully administer sedatives
- Orient to time, place, person and events
- Allow adequate time for communication and performance of activities
- Provide calm environment and do not leave the patient alone

The patient will experience optimal thought processes

**14. Sleep pattern disturbance:** related to fear, anxiety and REM sleep

**Expected Outcome**

- The patient will attain optimal amounts of sleep within the parameters of the treatment regimen.

**15. Potential for trauma:** related to falls associated with dizziness, orthostatic hypotension and osteoporosis.

<b>Nursing Intervention</b>	<b>Expected Outcome</b>
<ul style="list-style-type: none"> <li>▪ Keep bed in low position with side rail up</li> <li>▪ Keep needed items within easy reach and assist patient to identify their location</li> <li>▪ Encourage patient to request assistance when needed</li> <li>▪ Change position slowly (Teach patient to rise slowly from a sitting position and to sit at the edge of the bed for a minute before standing)</li> <li>▪ Provide ambulatory aids (e.g. walker) if patient is weak</li> <li>▪ Use night lights and bedside lamps</li> <li>▪ Orient patients to surrounding room and arrangement of furniture</li> <li>▪ Keep eye glasses at bedside and put them on before getting out of bed</li> <li>▪ Administer calcium preparation and vitamins</li> </ul>	<p>Fall prevention</p>

**16. Disturbance in self-concept/ powerlessness:** related to increased dependence on others to meet basic needs.

<b>Nursing Intervention</b>	<b>Expected Outcome</b>
<ul style="list-style-type: none"> <li>▪ Assist patient to identify and utilize coping techniques that have been helpful in the past</li> <li>▪ Encourage positive comments about self, give positive feedback about accomplishment</li> <li>▪ Verbalization of feelings about self and current situations</li> <li>▪ Support patient's efforts to increase knowledge and control over condition.</li> <li>▪ Allow patient to participate in his / her care</li> </ul>	<p>The patient will have positive self –concept and improved feeling of control</p>

- Encourage decision making ability in the patient
- Assist patient to establish realistic short and long term goals.

**17. Social Isolation:** related to decreased sensory and motor functioning, reduced opportunities for socialization due to inadequate financial resources and fear of embarrassment due to functional changes.

<b>Nursing Intervention</b>	<b>Expected Outcome</b>
<ul style="list-style-type: none"> <li>▪ Encourage patient to express feelings of rejection and aloneness, provide feedback and support</li> <li>▪ Setup of schedule of visiting times; encourage telephone contact with others</li> <li>▪ Assist patient to identify a few persons he /she feels comfortable with and encourage interactions with them</li> <li>▪ Instruct family in behavior modification techniques</li> <li>▪ Emphasize the importance of maintaining active friendships and seeking out new relationship</li> <li>▪ Encourage patient to continue involvement in social activities and participation in structured activity program</li> </ul>	<p>The patient will experience a decreased sense of isolation.</p>

**18. Altered family processes:** related to financial, physical and psychological stresses

<b>Nursing Intervention</b>	<b>Expected Outcome</b>
<ul style="list-style-type: none"> <li>▪ Instruct patient and family about ageing process</li> <li>▪ Encourage verbalization of feeling about changes in patient and the effect of these on family structure</li> <li>▪ Provide privacy so that family members can share their feeling with one another</li> <li>▪ Include family members in decision making about patient and his / her care</li> <li>▪ Assist family members to identify resources e.g. counseling social services.</li> </ul>	<p>The patient's family members will demonstrate beginning adjustment to changes in family roles and structures</p>

## ***Module 4: Healthy Ageing***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate the health risks in older individuals; and
2. Enumerate strategies for health promotion in regard to the needs

### **Contents**

- Health risks in older patients
- Health promotion interventions: nutrition, exercise
- Preventive aspects: screening, immunization, smoking, alcohol, falls and accidents, adverse drug reaction.

### **Health risks in older patients**

Through epidemiological research following health risks for older people have been identified:

- Malnutrition (including over-nutrition and under-nutrition)
- Inadequate consumption of fibers and fruits
- Physical inactivity and sedentary lifestyle
- Smoking
- Excessive alcohol consumption
- Adverse drug reaction
- Accidents and injuries

These risks factors render the older person vulnerable to ischemic heart disease, stroke, heart failure, cancer, injury and infection. Several health promotion measures have been advocated to avoid the ill-effects of these unhealthy behaviors. In addition, early detection of certain common cancers, hypertension, diabetes and immunization against certain infections have also proven to be cost-effective. Safe home environment and management of medications also needs to be emphasized in all health promotion activities for older people. In addition there are several psycho-social factors related to lifestyle such as culture and belief that also have an impact on health in old age.

### **Nutrition**

- Over-nutrition causes obesity and is associated with hypertension, IHD and diabetes, which are among the commonest health problems in old age.
- Under-nutrition is equally harmful leading to frailty, physical dependence and premature death apart from impairment of the immune system, increased risk of infection and poor wound-healing.
- The energy requirement declines with age due to reduction in the body mass, body metabolism and physical activity. Yet older people are at high risk of under-nutrition due to several reasons, namely:
  - Food is less enjoyable due to changes in taste and smell sensation;

- Lack of teeth, gum problems and ill-fitting dentures make eating painful; and
  - Reduced appetite due to lack of exercise, chronic debilitating disease, confusion, forgetfulness, side-effects of drugs, alcohol and smoking.
- Several socio-psychological factors also affect food intake; namely: economic condition, food beliefs (hot and cold food etc), religious beliefs, care-giver neglect and abuse, depression and loneliness
  - Common nutritional deficiencies include total calories, iron, fiber, folic acid, vitamin C, calcium, zinc, riboflavin and vitamin A.
  - It should be ensured that older people are eating nutritious and easily digestible diet and have access to food that is tasty and easy to prepare. A healthy diet varies widely depending on the availability and cultural acceptability of foods. Most traditional diets are now considered to have been close to being ideal, at least for adults and the elderly.
  - There are several psychosocial factors that affect nutrition in old age. These include: financial status, social beliefs, religious beliefs, status in the family, gender issues and mental health. While advising on dietary intake these issues must be kept in mind.
  - The principles of a balanced diet are similar in all ages. Elderly being a heterogeneous group, prescription of a uniform dietary schedule is difficult. However, certain guideline can be followed to make a balanced diet.

#### **Guidelines to healthy diet**

1. Complex carbohydrates (whole grains, roots, fruits, vegetables and beans) should be consumed in large amount for good bowel movement while helping treatment of high cholesterol, blood pressure, heart disease and diabetes. Simple carbohydrates (sugar and derivatives) should be reduced..
2. Calcium and vitamin D in the form of milk, curd, cheese, small fish and certain green vegetables should be increased to compensate for osteoporotic changes.
3. Water and other liquid should be consumed liberally.
4. Additional supplementation of vitamins and micronutrients may be required in older people as there is higher risk of their deficiency.
5. Excessive intake of caffeine should be avoided.
6. Vegetarian diets are as good as non-vegetarian diet; if adequate and varies types of protein is consumed.

## **Exercise**

- Ageing causes a progressive decline in power, strength and endurance of skeletal and cardiac musculature. Sedentary lifestyle and lack of physical activity accelerate this decline and are associated with higher risk of morbidity and mortality.
- Regular physical exercise has proven value in health promotion, which include:
  - Greater survival;
  - Protection against cardiovascular disease;
  - Weight reduction;
  - Control of high blood sugar in diabetes;
  - Protection against osteoporosis and fracture;
  - Improvement of muscle strength, endurance and balance leading to improved functional capacity; and
  - Improvement in psychological well-being.
- Physical exercise should be carried out at a frequency of 3 to 5 days per week, between 20 to 60 minutes per session, to achieve the maximum heart rate.
- Physical exercise in old age is limited by diseases such as obesity, IHD, chronic obstructive lung disease, stroke, arthritis which reduce exercise tolerance.
- In addition there are several psychological barriers which include stereotyping ('old people are weak', 'slow', they must rest'), family attitudes, lack of proper information, cultural and social inhibitions (exercise is for young people), fear of accidents and lack of supportive environment.
- Before initiating a physical exercise program the risks of exercise, potential for falls and accidents, medications, nutritional adequacy and motivation needs to be evaluated.
- The health worker must educate the older person in self-monitoring of symptoms and signs of IHD and must know when to stop if symptoms appear.
- Several types of physical exercises are available. The older person should choose the one which is enjoyable, easy to perform, convenient and inexpensive. Considering all aspects, brisk walking and stretching exercises seem to be the best for older individuals.
- Yoga has been accepted as one of the most ideal forms of exercise with several health benefits. Yoga must be learnt and practiced under supervision.

## **Tobacco Smoking**

- Cigarette smoking is a cause of many fatal diseases in older people. It is also one of the three determinants of functional disability in old age (the other two are obesity and lack of physical exercise).
- Smoking is responsible for:
  - Most respiratory problems in the elderly;
  - Cancers of lungs and gastrointestinal tract;
  - Ischaemic heart disease; and
  - Stroke
- Despite the knowledge of advantages of smoking cessation, most smokers have difficulty in quitting due to withdrawal symptoms (nicotine craving, irritation, frustration, anxiety, restlessness and difficulty in concentrating) and lack of motivation.

- The benefits of quitting smoking are also there is old age. Attempt must be made to eliminate smoking. Nicotine replacement is the most effective pharmacological intervention to help smoking cessation.
- Behavioral and cognitive strategies for smoking cessation should include:
  - Use of support groups;
  - Information about the long-term and short-term adverse effects of smoking
  - Discussions and films;
  - Techniques for substituting other hand activities;
  - Stimulus control by avoiding situations that stimulates a person to smoke; and
  - Avoidance of stress by relaxation techniques, yoga and meditation.
- Prevention of relapse is the most challenging task in smoking prevention program and every attempt should be made to continue with the cessation program after relapse.
- Chewing tobacco and “pan-masala/ gutka” is a similar menace in India. The cessation strategies are similar.

### **Alcohol**

- Older people are not free from the risk of alcohol abuse. But generally health professionals tend to overlook this problem. Misconceptions regarding association of alcoholism with a higher social status, lack of communication skills in asking uncomfortable questions on alcoholism and a fatalistic attitude may lead to missing alcohol abuse in older subjects.
- Alcohol intake in excess increases the potential for diseases such as cardiomyopathy, cirrhosis of the liver, atrophic gastritis, chronic pancreatitis, peripheral neuropathy and dementia, falls and accidents, malnutrition, immune suppression and social isolation.
- Detection of alcohol abuse in an older patient may be difficult due to:
  - Denial by the patient and family.
  - Presence of chronic disease;
  - Effects of medicines;
- Alcohol increases the effects of analgesics and CNS depressants such as sedatives, tricyclic antidepressants, anxiolytics and benzodiazepines.
- In old age, intoxication from relatively small amounts of alcohol occurs as a result of decreased metabolism, increased sensitivity of the brain to alcohol and slowing down of liver metabolism.
- Symptoms of intoxication and withdrawal can be easily mistaken for disease and age-related physical changes. Several features of alcohol abuse such as memory loss, poor balance, frequent falls and ill-health may be ignored as consequences of ageing.
- Health care personnel are often not aware of the problem of alcohol abuse among older patients. Misconceptions regarding association of alcohol with a higher social status, lack of communicable skills in asking uncomfortable questions on alcoholism and a fatalistic attitude may lead to missing alcohol abuse in older subjects.
- Drinking problems must be assessed through direct questioning as well as indirect questions on the history of falls, accidents, episodes of confusion, black outs, symptoms of self-neglect such as weight loss or poor hygiene, or lack of attention to usual activities. The family should also be used as a source of information.

- Treatment of chronic alcoholism is difficult and requires specialized effort by a multidisciplinary team through hospitalization. Nutritional support, treatment of withdrawal symptoms, psychiatric support and group therapy are some of the measures which should be part of the management of chronic alcoholism. The nurse must educate the patient as well as the caregivers about the problem and guide them in de-addiction.

### **Screening**

- Early detection and treatment is an important step in the secondary prevention of disease and disability. So regular screening for common, life-threatening and disabling diseases is important for health promotion.
- Alterations in bowel habits, new onset of constipation, smaller stool size or blood in stools, anorexia, weight loss, wasting, anemia and low backache are indicators of colorectal cancer which involves an appreciable amount of morbidity and ill-health.
- About 50% of all breast cancers occur in women aged over 65 years. Older women should be instructed in how to do self-examination of their breasts and to do it at least once every month.
- Cancer of the cervix is usually screened in all women after 40 years of age with annual pelvic examination and Pap smear.
- Several diseases such as hypertension, heart disease, diabetes can be detected during routine physical examination and managed with better results.
- The vision, hearing teeth and feet of older people should be inspected periodically.
- Screening requires resources (time and finances) but is extremely cost effective in the long run.

### **Prevention of accidents**

- Accidents are associated with: pain and trauma of injury; loss of function, prolonged immobility and its complications; fear of future accident and self- imposed isolation; and loss of independence.
- Most accidents in old age are in some way or the other related to normal age-related changes in the sensory system and the musculoskeletal system. These changes include:
  - Degeneration of sense organs: vision, hearing, smell, pain, touch, temperature
  - Decline in body balance;
  - Defective stance and gait; and
  - Poor muscle strength and co-ordination.
- In addition, several other factors increase the probability of falls and accidents in elderly subjects. They are:
  - Dementia;
  - Confusion;
  - Chronic illness;
  - Use of medications for heart diseases; and
  - Emotional stress.

- A large number of accidents in older people can be avoided. The health worker needs to identify the risk factors for accident and environmental hazards for an older person and intervene by simple and innovative measures. These include:
  - Use of walking aids
  - Use of visual aids
  - Use of colors to enhance the older person's vision and depth perception;
  - Removal of obstacles;
  - Bright lighting;
  - Use of flat shoes;
  - Availability of stable structures to hold on to in case of an impending fall; and
  - Proper flooring in side the home and the immediate outside environment.

***Burns and falls are the most common among all types of accidents and injuries.***

### **Prevention of adverse drug reaction**

Older persons require multiple drugs due to the presence of multiple diseases. As a result there is high risk of drug interaction and adverse drug reaction. The behavior of the medications in side the body and their effects (pharmacokinetics and pharmacodynamics) are changed in old age due to alterations in absorption from gastrointestinal tract, detoxification in liver, excretion through kidney, composition of body fat, muscle mass and total body water; and drug receptor sensitivity.

- Common drugs which produce adverse reactions are: antibiotics, anti-arrhythmic drugs, digoxin, diuretics, non-steroidal anti-inflammatory drugs, anti-Parkinsonian drugs, anti-cholinergic drugs, sedatives, anti-depressants, anti-hypertensive, anti-coagulants and psychotropic drugs.
- Common adverse drug reactions are: confusion, delirium, postural hypotension, falls, anxiety, depression, sleep disturbances, constipation, diarrhea, urinary incontinence and urinary retention.
- Interventions to reduce adverse drug reactions are:
  - Avoidance of self medication;
  - Minimizing the number of drugs used;
  - Use of specific medications for specific illnesses;
  - Use of medicines which do not have major side effects;
  - Frequent review of medication;
  - Instructions about possible side-effects; and
  - Limited use of over-the-counter drugs;

## Immunization

- Specific immunizations against following three agents have been recommended in old age: pneumococcus (causing pneumonia), influenza virus (causing “flu” and subsequent respiratory infection) tetanus, viral hepatitis
- All the three vaccines are available widely but only tetanus toxoid is affordable from the point of view of cost. Pneumococcal and influenza vaccines are costly and thus are specifically recommended for those older patients in whom pneumococcal pneumonia and influenza are either more frequent or can be dangerous.

### Indications for pneumococcal and influenza vaccines

- Kidney diseases: chronic renal failure, nephrotic syndrome
- Chronic obstructive pulmonary disease
- Congestive heart failure
- Ischaemic heart disease
- Cirrhosis of liver
- Diabetes mellitus

- Pneumococcal vaccine should be administered only once while the influenza vaccine is recommended every year.
- Tetanus immunization has a special place for older people in view of a higher risk of accidents and injuries in old age. Administration of tetanus toxoid every 10 years is recommended for the elderly which provides effective protection and is free of side-effects.
- Herpes Zoster Vaccination has been approved and found to be effective in reducing the incidents and its complications.

## ***Module 5: The Ageing Brain: Cognitive Impairment & Stroke***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate age-related changes in the brain
2. Identify dementia and develop nursing care plans for an elderly demented patient
3. Diagnose and manage confusion / delirium
4. Diagnose stroke and develop nursing strategy in older patient with stroke
5. Develop rehabilitation plans for an elderly patient with stroke

### **Contents**

- Normal age-related changes in the brain
- Cognitive impairment and dementia
- Care of the demented patient
- Confusion
- Definitions and Clinical manifestations of stroke
- Risk factors of stroke
- Management of stroke

### **Normal age-related changes in the brain**

- Age related changes in brain include: loss of neurons, decline in synaptic density, reduction in the size of the brain, enlargement of ventricles and deposition of lipofuscin and amyloid plaques. There is also reduced efficiency of neural transmission, probably due to the smaller number of cells.
- These structural and functional changes have no real significance since the normal older brain is still quite capable of learning and remembering.
- In some individuals these age-related changes are excessive with significant functional impairment, which is termed as cognitive impairment.

### **Cognitive impairment**

- The clinical features of an aged brain are subtle or manifest alterations in cognition and behavior. The cognitive impairment of old age can be “benign senescent forgetfulness or age-associated memory impairment” and “dementia”.

#### *Age-associated memory impairment (AAMI)*

- AAMI is a well-recognized entity characterized by:
  - Onset after 50 years of age
  - Gradual onset of memory dysfunction, substantiated by psychometric evidence
  - Intact global intellectual function
  - Absence of dementia (mental state examination score-MMSE score>24)
  - Absence of any neurological, medical and psychiatric disease or use of drugs

## ***Dementia***

- Dementia, on the other hand, is a clinical syndrome characterized by persistent impairment of multiple cognitive capacities, which includes: impaired memory, disturbances of languages function and visuo-spatial skills; and a variety of behavioral problems.
- Cognitive impairment of normal ageing produces little disability and can be easily distinguished from dementia even early in the disease.
  - Several pathological conditions cause dementia. Among them Alzheimer’s disease and vascular dementia are most common. Other causes include: AIDS dementia complex, Parkinson’s disease, alcohol, hypothyroidism, subdural hematoma and head injury.
  - The most important risk factor in the development of dementia is ageing. The prevalence of dementia increases from less than 1% at 60 years to 40% at 95 years, doubling every six years.
  - Dementia is the most important public health problem of old age in the developed world and in the near future will become so in India and other developing countries as well. There are about three million patients of dementia at present in India. Care of such a large number of the demented elderly is a major challenge for the society.
  - The clinical course of Alzheimer’s disease and other dementias passes slowly but steadily through three phases: first, phase of involvement of higher mental function, second phase of focal neurological deficit and third phase of global neurological dysfunction. Dementia in general is associated with reduced survival.

### **Clinical manifestations of dementia**

#### *Cognitive problems in dementia*

Memory loss  
Poor concentration  
Visuo- spatial difficulties  
Non-specific focal cortical damage  
Speech and language defect  
Focal neurological deficits  
Loss of language  
Inability to recognize self and others  
Seizures  
Disturbances of muscle rigidity and gait  
Bladder and bowel incontinence  
Total confinement to bed

#### *Behavioral problems*

Agitation  
Personality change  
Abnormal eating behavior  
Wandering  
Mood disorder  
Anxiety, phobias, fear  
Restlessness  
Delusions  
Hallucinations, illusion  
Shouting, rage, violence  
Dysinhibition  
Compulsive behavior

- The clinical diagnosis of dementia involves a two-step process:
  - 1) Diagnosis of dementia and its differentiation from normal ageing, other psychiatric illness, delirium and amnesic syndromes.
  - 2) Different diagnosis of the possible causes of cognitive decline.

- Dementia patients usually do not have sudden onset and neurological signs of focal damage (hemiparesis, visual field defects, sensory loss, loss of co-ordination) early in the course of disease.
- Vascular dementia is usually due to ischemia of brain due to atherosclerosis, repeated small strokes or a few major strokes. Though the etiology is understood, management is mostly symptomatic. The progression of disease can possibly be slowed down by agent directed against hypertension and enhanced thrombogenesis (anti-platelet drugs).
- However the precise etiology and pathogenesis of Alzheimer's disease are poorly understood; as a result there is no specific treatment available for this disease.
- The treatment modalities for Alzheimer's disease are: (i) symptomatic (choline esterase inhibitors) and (ii) disease-modifying (HRT, anti-oxidants, NSAIDs). Both these modalities of the therapy are in the process of evolution with no curative treatment available as yet.
- Of all the agents available for symptomatic treatment, choline esterase inhibitors are the best developed and most successful with only mild impact on cognitive symptoms.

#### **Care of the demented patient**

The objectives of caring for a demented elderly are:

- Protection from harm
- Maintenance of independence in daily activities as long as possible
- Improvement in communication
- Prevent and reduction of occurrence of difficult behavior
- Provision of support to family care-givers

- Many things in the home must be considered while planning for safety. If the demented person turns the stove / burner on, then fire is a potential hazard. If the stove is electric, it should be disconnected when the elderly is at home alone as well as during the night if wandering is a problem. The older person must always be under someone's observation in order to be secured and protected to prevent wandering away from home. The most important point is to anticipate the safety needs by conducting a thorough assessment of risk.
- In order to maintain independence as long as possible, demented persons must be kept stimulated and involved in activities. Reality orientation is an approach in which the demented person is re-educated by health care workers and family members in a regular manner. The process should start with simple objects in the surrounding going on to activities of daily living. Sensory stimulation is another approach in which different senses are stimulated by familiar objects (scent for smell, sugar or salt for taste, etc) with recalls and reminders.
- Communicating with a demented person can be very frustrating. It is important that health professionals and family care-givers do not respond by ignoring the older person, talking to them as if they were a child, answering for the older person before giving them a chance to answer for themselves, or shouting or speaking harshly to the older person. Instead, communication should stress the following.

- The older person should not be hurried when trying to speak and they should be allowed time to consider what they want to say.
- If the older person starts to forget what they are trying to say, the last words or sentence that they spoke should be repeated to give them the cue.
- Short simple sentences and ones which can be answered by a yes or no should be used.
- The most important content of what needs to be communicated is given at the end of the sentence.
- Instructions should be given one at a time.
- Background noise and distractions should be avoided as far as possible.
- Part of the importance of communicating well and patiently is that this often prevents the occurrence of agitation and other disruptive behaviors. The most common behavior problems in demented persons include:
  - Resisting care
  - Screaming
  - Repeating things over and over
  - Striking out physically
  - Inappropriate sexual behavior
  - Taking clothes off in inappropriate places or undressing throughout the day
  - Hoarding things
  - Smearing faecal matters.
- In order to determine which factor triggers difficult behavior, the patient must be observed and the family care-giver should be interviewed. Bathing and toileting are the common ones which start these behaviors. Other factors which cause these behaviors are too much stimulation in the environment from people and noise, unfamiliar person and places, being forced to do something, too many instructions at once, accumulation of physical energy from inadequate activity and exercise, fatigue, physical discomfort from pain, fever or constipation and inability to communicate needs.
- Approaches in reducing violent behavior may include the following
  - Making a routine for daily care to improve predictability
  - Determining the ideal time of day for doing needed things
  - Trying not to surprise the person by any action
  - Avoiding argument and physical restraining
  - Diverting the person's attention
  - Engaging the older person in recreational activities which use the whole body
  - The patient and any visitor to the patient should be referred to by name
  - Reorientation to TPP (Time, Place and Person)
- The family needs a great deal of emotional support in taking care of a relative with dementia. This may include co-ordination with support groups. The family also needs to have arrangements for relief of responsibilities so that the caretakers do not become exhausted and socially isolated.

## **Confusion / Delirium**

- Acute confusional state or delirium has an abrupt or sudden onset. The beginning of the confusional state can be reasonably well-traced to a specific point or period of time when there was a clear and distinct change in behavior.
- Many serious and systemic diseases are present with confusion or delirium. The usual causes of confusional state are:
  - Systemic sepsis: urinary tract infections and pneumonia
  - - Electrolyte imbalance (particularly hyponatremia) and dehydration
    - Side-effects of drugs
    - 
    - 
    - Hypoxic states as anemia and hypotension
    - Hypothermia and hyperthermia
    - Deficiencies in hearing or vision which cause confusion in understanding and responding appropriately.
    - Relocation to unfamiliar places and people
    - Often multiple causes are responsible for delirium in an older person.
- Acute confusional state can be corrected by resolving the underlying cause. It is always wise to avoid sedatives and hypnotics and other psychotropic drugs to treat confusion as far as possible.

## **Stroke**

Stroke is the commonest neurological problem in old age in terms of frequency, urgency and hospital admissions. It continues to be one of the top three leading causes in death as well as the most important cause of disability in later life.

More than a half of all stroke patients die within one year of the episode. Only one-third of the survivors make good recovery. Stroke is responsible for more than a quarter of all cases of severe disability in the community.

### *Definitions*

- Stroke is defined as rapidly developing clinical signs of focal or global disturbance of cerebral function with symptoms lasting 24 hours or longer, or leading to death, with no apparent cause other than of vascular origin.
- Events lasting for less than 24 hours are termed as transient ischemic attack (TIA) the characteristics of the mode of onset, together with specific neurological symptoms and signs; suggest the lesion's location and its cause.

### *Clinical manifestations*

- Stroke is a syndrome resulting from a range of heterogeneous conditions that affect the cerebral vasculature and blood flow. Strokes can be either occlusive or hemorrhagic
- Occlusive / ischemic strokes account for 65% of all strokes and can be due to thrombosis or embolism involving large vessels and small vessel occlusion (lacunar stroke). Thrombotic strokes are the commonest of all varieties resulting from atherosclerosis of cerebral blood vessels. Embolic strokes usually have the cardiac structural and / or rhythm abnormalities as the main source of embolism.

- Hemorrhagic strokes account for 35% of all strokes and can be due to the rupture of micro-aneurysms and intra-cerebral blood vessels. Hemorrhagic stroke is nearly always associated with hypertension.

#### *Risk factors*

- **Hypertension** is the single most important risk factor for stroke.
- Other risk factors for stroke include:
  - Increasing age
  - Family history
  - Obesity and hypercholesterolemia
  - Smoking
  - Lack of exercise
  - Heart failure
  - Atrial fibrillation
  - Diabetes mellitus
  - Anticoagulant therapy

#### *Management*

- The diagnosis of stroke is often clinical.
- Imaging investigations such as CT scan and MRI scan are sensitive investigations for the diagnosis of the aetiology of stroke.
- Other investigations are often required to detect treatable cardiovascular risk factors and identify treatable complication of stroke, for which baseline investigations of blood, ECG and chest X-ray are useful.
- The management of stroke involves:
  - Medical intervention to minimize impairment
  - Prevention and treatment of acute complications
  - Nursing interventions: nutrition, skin care, positioning to avoid aspiration, bladder and bowel care
  - Rehabilitation to minimize disability
  - Adaptation to minimize handicaps
- Prevention of stroke in patients with TIA requires:
  - Modification of risk factors: hypertension, smoking, cholesterol
  - Drug therapy with antiplatelet agents and anticoagulants
- The patient as well as the family requires support in terms of education, training and counseling. Community and domiciliary rehabilitative services are essential for stroke patients living in communities.

*Hypertension is the single most important risk factor for stroke. Primary prevention of stroke is one of the important goals of healthy ageing, and achievement of this goal demands early detection and control of hypertension.*

## ***Rehabilitation***

- Stroke rehabilitation is a multidisciplinary activity which focuses on problem-solving education about the disability in order to reduce the handicap.
- The basic principles of stroke rehabilitation are documentation of the impairment and handicaps; and maximization of independence and minimization of dependency.
- A holistic approach taking into account the physical and mental state of the patient is required to achieve the best results.
- The rehabilitation program should address several sequelae which affect the patient's quality of life:
  - Poor motivation
  - Dysphagia
  - Various speech defects
  - Problems of perception (neglect, agnosias, apraxias)
  - Hemiplegic shoulder
  - Edematous limb
  - Seizures
  - Depression and apathy
- A few aspects of stroke rehabilitation are important for nurses; namely:
  - Training in activities of daily living
  - Avoidance of spasticity
  - Prevention of aspiration while feeding
  - Prevention of pressure sores and deep vein thrombosis.

## ***Module 6: The Cardiovascular System***

### **Learning objectives**

On the completion of this module, the trainee should be able to

1. Enumerate age-related changes which occur in the cardiovascular system
2. Enumerate common cardiovascular diseases and develop nursing care plans

### **Contents**

- Normal age-related changes in cardiovascular system
- Common cardiovascular problems

### **Normal age-related changes in cardiovascular system**

- There is progressive loss of myocardial muscle cells along with increase in cell volume and deposition of fat and fibrous tissue. As a result the heart gets flabbier but weaker. The heart valves become thicker and less elastic; and may calcify. There may be decline in the sinoatrial (SA) node discharges and disruption of the atrioventricular (AV) conduction system. Blood vessels become rigid and narrowed with atherosclerosis.
- Cardiac impulse generation and contractility is normal but the duration of contraction and relaxation is prolonged.
- Cardiovascular reflexes are blunted; especially the heart rate response to orthostasis and hypotension is impaired. In other words, the heart rate does not increase enough to compensate for the reduction in cardiac output due to hypotension.
- Alterations in cardiac function with age are the manifestations of a decreased  $\beta$ -adrenergic responsiveness.

### **Common cardiovascular problems**

#### ***Hypertension***

- Hypertension is the commonest health problem in old age. More than half of the elderly population in most societies have hypertension. However, a majority of these hypertensives are either undiagnosed or uncontrolled.
- Systolic blood pressure (SBP) has greater predictability of vascular events (stroke, ischaemic heart disease, congestive heart failure, renal failure and mortality) than diastolic blood pressure in older individuals.
- A large number of the elderly hypertensive have isolated elevation of SBP, which greatly enhances cardiovascular risk.
- Primary or idiopathic hypertension is the commonest cause of high blood pressure in old age.
- Blood pressure measurement in old age needs to be done carefully in order to avoid false labeling (pseudohypertension).

- Treatment of hypertension in old age produces major benefits and reduces the incidence of stroke, ischaemic heart disease (IHD) and heart failure.
- Treatment should begin with lifestyle modification, salt restriction and weight loss.
- Pharmacological interventions can include  $\beta$ -blocker (atenolol) and diuretics (thiazide) alone or in combination. Calcium channel blockers (amlodipine) and ACE inhibitors (enalapril, lisinopril, ramipril) have been found to be more useful in hypertension with their extra effect on coronary events. Similarly  $\alpha$ -blockers (prazosin) is useful for hypertensives with benign prostatic hypertrophy.
- The goal of treatment is to achieve a blood pressure of less than 140/90 mm Hg, though in patients with isolated systolic hypertension an intermediate goal of 160 SBP is acceptable. SBP closer to normal provides more benefit.
- The side effects of antihypertensive drugs in older patients are more frequent and severe. The adverse effects include postural fall of blood pressure. Drugs that produce orthostatic hypotension should be avoided ( $\alpha$ -blockers, peripheral adrenergic blockers and high-dose diuretics). Drugs that cause cognitive dysfunction (central  $\alpha_2$ - agonists, i.e. clonidine) should be used with caution.

### *Ischemic heart disease*

- Ischemic heart disease (IHD) is a very common cause of death in old age.
- Risk factors of IHD in old age more or less remain the same, which include hypertension (systolic and diastolic), smoking, dyslipidemia and obesity. In addition, oestrogen deficiency of post-menopausal state and poor physical activity are other important risk factors specific to old age.
- The manifestations of IHD in older patients are similar to those in young patients. However, silent ischaemia and cardiac failure are more frequent in older subjects. Similarly, diagnostic tests are no different in old age though the interpretation of the exercise-induced ischaemia may be difficult.
- Medical management of the symptoms is usually carried out by short- and long-acting nitrates,  $\beta$ -adrenergic blockers and calcium channel antagonists which are useful drugs, though development of tolerance to nitrates is a frequent problem.
- Coronary angioplasty is an excellent option for older subjects who continue to have symptoms despite medical management. As it avoids anaesthesia and thoracotomy, short-term survival is much better than coronary artery bypass grafting (CABG).
- Despite the high risk of peri-operative mortality, CABG has better survival over medical management and similar survival as coronary angioplasty in the long run. Thus, it is the co-morbidity which should influence the decision regarding the choice of intervention in IHD.
- **Acute myocardial infarction** in old age may be missed due to the absence of pain. Dyspnoea and fatigue may be the only manifestation. Survival after acute myocardial infarction in old age is much less than in younger patient. Older patient have a high prevalence of congestive cardiac failure. Thrombolytic therapy in old age is limited by the presence of several contraindications and is associated with higher rates of mortality and complications.

### ***Congestive cardiac failure***

- The prevalence of cardiac failure steadily rises with increasing age to more than 10% in persons over 75 years of age, with higher risk in men.
- Hypertension, diabetes mellitus, coronary artery disease and valvular heart disease are the well-recognized causes of cardiac failure in old age. In addition, a substantial number of patients without these risk factors also develop cardiac failure due to an increase in myocardial volume and stiffness due to accumulation of fat, fibrous tissue, lipofuscin and amyloid. Both the systolic and diastolic functions of the myocardium, more so the diastolic function of the heart, is impaired, leading to a clinically-manifest cardiac failure.
- In the absence of agreed and objective criteria, the diagnosis of cardiac failure may be difficult in old age. It may depend on the patient's perception and the health professional's interpretation of the symptoms. So over-and under-diagnosis of cardiac failure in old age is extremely common.
- Breathlessness on exertion and fluid overload are classical feature of cardiac failure. In older patients, due to lack of much physical effort, especially in a bed-ridden patient, dyspnoea may be absent; and fatigue, weakness and tiredness may be the only symptoms. On the other had, fluid overload may be present in the absence of cardiac failure due to prolonged immobility, hypoproteinemia and venous insufficiency.
- The management of chronic cardiac failure in old age aims at improving the consequences of heart failure rather than the primary heart disease.
- The cornerstone of the management of chronic cardiac failure is diuretic therapy. Choosing a diuretic among many (thiazide, frusemide, and spiranolactone) is often difficult. As a rule of thumb it is ideal to start with a low dose of frusemide (20 mg.) to be increased slowly up to 160 mg in the absence of response. It is important that renal function and electrolyte status should be regularly monitored.
- Diuretics may cause several serous problems for the older patients and may not be tolerated. The health professional should be very vigilant towards these issues to ensure compliance.

<b>Adverse effects of diuretics</b>	
<u>Metabolic</u>	<u>Physical</u>
Hypo and hyperkalemia	Incontinence of urine
Hyponatremia	Retention of urine
Hyperglycemia	Postural and supine hypotension
Uremia	Hearing loss
Hyperuricemia	Osteoporosis
Hypercalciuria	Urinary frequency in presence of locomotor disability

- Digoxin is a very useful drug in chronic cardiac failure in older patients. Feature of digoxin toxicity in old age include fatigue, depression, confusion, anorexia, nausea, vomiting, diarrhea, headache and variety of arrhythmias.
- Ace inhibitors (enalapril, ramipril and lisinopril) have got multiple benefits in cardiac failure, including survival benefit. First-dose hypotension and worsening of the renal function are the most important adverse effects.
- Vasodilators (nitrates, hydralazine and prazosin) have been used in older patients with cardiac failure with mixed results.
- Treatment- resistant cardiac failure in old age can be due to poor compliance, use of NSAIDs, simultaneous use of  $\beta$ - adrenergic blockers, calcium channel antagonists, persistent or frequent arrhythmias, infection, thyrotoxicosis and unsuspected valve lesions.

### **Other common problems**

Other common cardiovascular diseases include cardio myopathy, peripheral vascular disease, complete heart block, atrial fibrillation, pulmonary and cerebral thrombo-embolism and aortic stenosis. The diagnosis and management of these conditions are well-established and do not differ in older persons from that in younger individuals.

### ***Syncope***

- Syncope or fainting is a common problem in old age. Syncope means transient loss of consciousness accompanied by loss of postural control or fall and complete recovery without resuscitative intervention. It results from a temporary cessation of cerebral function due to transient and sudden reduction of blood flow to parts of the brain responsible for consciousness.
- Age-related alterations in cerebral autoregulation, baroreflex sensitivity and volume regulation make the elderly particularly vulnerable to syncope. Multiple age-related diseases, medication affecting blood circulation, altered control of gait and stance, and cognitive dysfunction predispose as well as influence the outcome of syncope in the elderly.
- Syncope and falls are of great importance in old age as they often result in serious injuries including fractures and intracranial bleeding, hospitalization, immobility leading to loss of confidence and loss of independence.
- In general it is always assumed that syncope in old age, unlike in young individuals, is a marker for an underlying cardiovascular disorder. It is a manifestation of a wide

variety of conditions, benign as well as life-threatening. The cause of syncope remains undiagnosed even after extensive evaluation in up to half of the cases.

- The manifestations and management of cardiovascular causes of syncope such as myocardial infarction, aortic stenosis, hypertrophic cardiomyopathy, supraventricular and ventricular arrhythmias, sick sinus syndrome and atrioventricular block have been well-characterized.
- In recent years, attention has focused on the clinical characteristics and management of lesser-known but more common causes of syncope in the elderly. These include carotid sinus syndrome, orthostatic hypotension, and vasodepressor syndromes associated with vasovagal syncope, epilepsy, cerebrovascular accident (TIA), cough syncope and unexplained causes in a substantial number of cases.
- The diagnostic evaluation of unexplained syncope in the elderly requires differentiation from other entities such as accidental falls, seizures, dizziness and vertigo and a detailed non-invasive cardiovascular investigation to determine the cause of the symptom.

#### ***Management of cardiovascular drugs***

- The management of cardiovascular drugs is an important issue in the care of the elderly. Potential side-effects must be taught to older persons and their families. Drugs such as digitalis, diuretics and vasodilators require particular care because their action is very much affected by age-related changes in the kidney, liver, muscle mass, and fat and fluid distribution.

#### ***Education of the patient and the family***

- The nurse has an important role in educating the older patient and the family on the following aspects:
  - Nutrition
  - Salt restriction
  - Activity
  - Drug side effects
  - Drug compliance and Follow up

## ***Module 7: The Respiratory System***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate age-related changes which occur in the respiratory system
2. Enumerate common respiratory diseases and develop nursing care plans

### **Contents**

- Normal age-related changes in the respiratory system
- Common respiratory problems

### **Normal age-related changes in respiratory system**

- In the large airways and bronchi, the number of glandular epithelial cells decline leading to reduced production of protective mucous and thereby increased risk of infection.
- In small airways and air spaces, there is a loss of supportive elastin and collagen leading to dilatation of alveolar ducts and air spaces (senile emphysema). Though the alveoli increase in size, there is a decrease in their number, therefore, there is a less alveolar surface and a less effective exchange of oxygen and carbon dioxide.
- Respiratory muscle strength declines due to age-related changes in muscles. The thoracic cage becomes stiff and rigid as a result of ossification of costal cartilage and kyphosis of spine, which also affects ventilation.
- Ventilatory responses to both hypoxia and hypercapnia are impaired in old age. The central control of breathing is impaired.
- There is also a decrease in the cough reflex and in ciliary action in the lungs. Bacterial colonization of the airway is frequent. All these changes are worsened by smoking or air pollution.

### **Common respiratory problems**

#### ***Pneumonia***

- The decrease in ciliary function and cough reflex, along with changes in the immune system, make the older person more susceptible to pneumonia.
- Pneumonia is the commonest infectious disease in old age causing 50% of all deaths due to respiratory disease. Lower respiratory tract infections are 50 times more common in the elderly subjects as compared to inpatients and are the third most frequent cause of hospitalization in the elderly after myocardial infarction and stroke.
- Pulmonary infections come as the terminal event in patients with other serious or chronic disease such as cerebrovascular accidents, degenerative neuro-muscular disease, dementia, congestive cardiac failure and malignancies.

- Despite impressive advances in the treatment of pneumonia with anti-microbial agents in intensive care, one-third of hospitalized elderly patients die of it.
- Pneumonia can be acquired at home or during hospitalization for unrelated illness. The type of organism is usually determined by the place where the infection starts.
- In hospital-acquired pneumonia gram negative bacilli and *Staphylococcus aureus* are the more frequent causes of pneumonia whereas *Streptococcus pneumoniae* or *Hemophilus influenza* are common in community- acquired pneumonia. The organisms responsible for hospital-acquired infections have higher virulence and multiple antibiotic resistance.
- Pneumonia in the elderly tends to be different from that in other age-groups in its clinical manifestation and outcome.
- The presentation of pneumonia in the elderly is often atypical with prominent non-respiratory symptoms like confusion, incontinence and immobility
- The signs of inflammation like fever, tachycardia and leucocytosis may be absent. Some form of ill-health is present in most patients, chronic obstructive airways disease being the commonest. These differences attain significance if the individual is living alone as the disease may progress without the patient seeking medical care.
- The progression and resolution of pneumonia is also slower in old age with a prolonged stay in hospital. Respiratory infections result in very high mortality in the elderly patients as compared to younger patients. The bad prognostic factors for pneumonia in old age are lack of fever, hypotension, tachycardia, tachypnoea and increasing hypoxia.
- The diagnosis of pneumonia is usually clinical, confirmed by chest X-ray. Bacteriological diagnosis is difficult to achieve in more than half of the patients despite extensive investigations.
- The treatment of pneumonia in all age-groups including the elderly is largely empiric because of the non-specificity of clinical and radiographic features and limitations of the diagnostic testing for identifying and etiologic pathogen. The initial empiric therapy is based on the principle of covering all common organisms for that age-group and locality.
- The initial antibiotic should include an oral betalactam and a macrolide antibiotic for ambulatory patients. For hospitalized patients antibiotics should be administered parenterally and reviewed every 48-72 hours.
- The presence of co-existing illnesses and complications of pneumonia generally influence the duration of antibiotic therapy. However, most organisms require treatment for about one to two weeks with 3-6 days of parenteral antibiotic therapy.

- The decision to hospitalize the patient is crucial and may influence the ultimate outcome. The presence of any of the risk factors that increase the risk of death is an indication for hospitalization. These risk factors are: age over 65 years, presence of co-existing illnesses (COPD, diabetes, chronic renal failure, heart failure, liver disease, dementia), presence of tachypnoea, hypotension, high fever, extra-pulmonary complications, decreased level of consciousness, leucopenia, hypoxia, need for mechanical ventilation, multilobar involvement and uremia.

### ***Tuberculosis***

- *Infection with Mycobacterium tuberculosis* is universal though the prevalence of the disease varies from population to population influenced by its socioeconomic status.
- The prevalence of tuberculosis in the aged has always been considered higher than in younger individuals due to reactivation of latent infection or re-infection due to the fall in immunity.
- The clinical manifestations, response to drug therapy and outcome from tubercular infection in old age have been considered distinct and different than in younger individuals.
- Fever, night sweats, haemoptysis and cough are usually absent and non-specific complaints and weight loss may be prominent. Radiological manifestations also differ in the aged comprising of widespread and patchy infiltrates and miliary tuberculosis rather than classical upper lobe lesion. The treatment of tuberculosis in the elderly is similar to that in younger subjects. The World Health Organization recommends a short course chemotherapeutic regimen, unsupervised or directly observed, with isoniazid (5mg/kg/day), ethambutol (15mg /kg/day) and pyrazinamide (25mg/kg/day) for two months followed by isoniazid and rifampicin for four months. It is advisable to avoid streptomycin.
- Adverse reactions are frequent in old age; however, the risk of frank hepatotoxicity is no higher than that in young patients.

### ***Bronchial asthma***

- Bronchial asthma is often confused with the more prevalent chronic obstructive pulmonary diseases (COPD) in old age though it remains a distinct entity.
- Most elderly patients with bronchial asthma develop it in adult life.
- Older patients present with intermittent cough, wheezing and breathlessness. These features are often confused with COPD and left ventricular failure, which are also common in old age.
- The management of bronchial asthma in acute and chronic phases is no different in older patients than in younger patients though complications and mortality are often higher in old age.
- Acute asthma should be managed with high-flow oxygen and nebulized  $\beta$ -agonists (salbutamol) and ipratropium. Patients who do not respond to this treatment warrant intravenous aminophylline. Patients with rising carbon dioxide levels and impending exhaustion may need mechanical ventilation, which is difficult to wean off.
- Chronic bronchial asthma is usually managed with metered dose inhalers (MDI) of  $\beta$ -agonists (salbutamol or terbutaline), steroid (beclomethasone or budesonide) and

ipratropium. Chronic severe bronchial asthma requires oral corticosteroids (prednisolone) with its accompanying adverse effects.

### ***Chronic obstructive pulmonary disease***

- Chronic obstructive pulmonary disease (COPD) is defined as a slowly progressive airway obstruction which does not change markedly over many months.
- Smoking is the commonest cause of COPD. After many years of smoking there is an asymptomatic phase of decline in the respiratory function which gets manifest by the age of 50-60 years. Nearly a third of the elderly subjects may have COPD though half of them are not diagnosed or treated.
- The clinical course of COPD includes smoker's cough to start with, which goes on to become chronic bronchitis, and with a fall in the forced expiratory volume (FEV) below 60% breathlessness sets in.
- Symptoms of hypoxia, which include fatigue, malaise and weight loss and sleep disturbances, are other common symptoms.
- Signs include hyperinflated chest, wheezing polycythaemia and cyanosis, and oedema and raised jugular venous pressure (JVP) in the presence of right heart failure.
- Clinical features and chest X-ray are diagnostic which can be confirmed by the obstructive pattern in pulmonary function testing.
- Treatment of COPD involves relief of airway obstruction by
  - Bronchodilators-  $\beta$ - agonists (salbutamol, terbutaline) – oral inhaled anticholinergic inhaler (ipratropium)
  - Steroid inhalers (beclomethasone, budesonide)
  - Sustained release theophylline
- Long-term home oxygen therapy is recommended in patients with persistent hypoxia ( $PO_2 < 55$ ) for a minimum of 16 hours per day.
- Pulmonary rehabilitation improves exercise tolerance and included:
  - Aerobic exercise for exercise retraining;
  - Resistive respiratory muscle exercise
  - Maintaining physical activity
- COPD is a strong indication for influenza and pneumococcal vaccination

### ***Acute exacerbation of COPD***

- Acute exacerbation of COPD is the commonest cause of hospitalization of COPD patients. Upper or lower respiratory tract infection is the usual cause of acute exacerbation. It causes severe hypoxia and can lead to death.
- Treatment involves antibiotics (coamoxyclav, amoxicillin, doxycycline), bronchodilators by nebulization and oxygen inhalation by mask. Steroids have no role.
- Patients not responding to this therapy and developing severe hypoxia may require mechanical ventilation, for which age is not a contraindication.

## ***Lung cancer***

- Lung cancer is possibly the commonest cancer in older men all over the world and its prevalence among older women is steadily rising. Ninety-five percent of these cancers are related to cigarette smoking.
- The clinical features of lung cancer (cough, haemoptysis, chest pain and weight loss) in old age are no different, though most older patients present themselves in a much advanced stage of the disease.
- The diagnostic evaluation of lung cancer in old age should aim at both tissue diagnosis and operability from the anatomical as well as functional points of view. Diagnostic procedures are similar and include cytological examination of the sputum, imaging and fiberoptic bronchoscopy. The staging principles are also no different.
- Squamous cell carcinoma is the commonest of all types of cancers in old age comprising 50% - 70% of all cases while small cell lung cancers comprise about 25% of cases.
- Surgical resection remains the treatment of choice in a fit patient irrespective of age, though a majority of the patients are subjected to radical or palliative radiotherapy. Chemotherapy is mostly reserved for small cell cancer and is poorly tolerated.

***Smoking is the single most important cause of respiratory disease in old age***

- ***Nursing management of the above respiratory diseases includes:***
  - Proper positioning of the patient
  - Administration of oxygen and nebulized drugs
  - Proper dietary management
  - Training in relaxation techniques
  - Assistance in medication
  - Psychological support
  - Assistance in mechanical ventilation
  - Chest physiotherapy
  - Motivation for smoking cessation.

## ***Module 8: The Gastrointestinal System***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate the age-related changes in the gastrointestinal system
2. Diagnose common disease conditions and develop nursing care plans

### **Contents**

- Normal age-related changes in the GI system
- Common health problems of the GI system

### **Normal age-related changes in the GI system**

- Oral mucous membrane atrophies. Teeth are lost due to periodontal disease and resorption of mandible. The muscles of mastication become weak. The numbers of taste buds decrease. Salivary secretion is reduced as a result of the concomitant drug use.
- The swallowing mechanism is affected by weakened oropharyngeal muscles and disturbed co-ordination between oropharyngeal muscles and upper oesophageal sphincter. As a result, elderly subjects are susceptible to dysphagia and aspiration.
- Gastric emptying for liquids is delayed. Gastric acid secretion may increase or decrease depending on infection with *Helicobacter pylori* infection or use of drugs.
- Absorption of multiple nutrients in small intestine is reduced leading to malabsorption. Steatorrhoea is unusual as pancreatic function remains normal.
- Though large intestine function remains normal, decreased tone of abdominal muscles may affect peristalsis and evacuation may not be complete.
- Liver volume, blood flow and perfusion decline with age. As a result its ability to metabolize and detoxify toxins, hormones and drugs is significantly impaired.

### **Common disorders of the GI tract**

- *Hiatus hernia* and *gastro-oesophageal reflux* are the most common problems of upper G. I tract in old age. The prevalence increases after the age of 50 and may be present in as many as two-thirds of the people over 60 years; the condition being more common in women.
- Symptoms include heartburn, dysphagia, pain in the region of lower sternum, belching, reflux of food and vomiting.
- Interventions to correct the situation include:
  - Advise weight reduction if the patient is obese
  - A diet of small, frequent feedings of bland but nutritious food
  - Avoid coffee, tea and colas
  - Reduce the amount of saturated fat
  - Walking for a while after eating rather than lying down, and avoiding eating prior to going to bed;
  - Head end of the cot to be raised by six inches
  - Taking antacids for relief of heartburn; skim milk can also help
  - Avoid sleeping/ lying down within two hours after taking food.

### ***NSAIDs, gastropathy and peptic ulcer***

- Non-steroidal anti-inflammatory drugs (NSAIDs) are frequently prescribed to older patients.
- Acute toxicity is dose-dependent. NSAID users develop gastropathy during the first 1 to 2 weeks of therapy.
- A small but significant proportion of chronic NSAID users develop serious toxicity, including ulcer disease. The spectrum of manifestations varies from non-ulcer dyspepsia to severe ulceration and life-threatening haemorrhage.
- Simultaneous use of ranitidine (150 mg b.i.d), famotidine (20 mg b.i.d) or omeprazole (20 mg b.i.d) can prevent NSAID-induced gastrointestinal toxicity though gastric ulcers are less frequently prevented.
- Peptic ulcer induced by NSAIDs and *H. pylori* tends to be very virulent in old age. Presentation of ulcer disease is usually acute, often with bleeding or perforation, though gastric ulcer may remain subtle. Anemia due to chronic blood loss, fatigue and weight loss may be the only complaint in some patients.
- The risk of complications from peptic ulcer disease is very high in old age, though response to ranitidine and omeprazole is extremely good. Older patients should not be denied surgery for complication.

### ***Non-ulcer dyspepsia***

- Dyspeptic symptoms without any endoscopic evidence of ulcer are a frequent complaint in older subjects. The aetiology of non-ulcer dyspepsia is not known definitively though several causes, including psychological factors, gastrointestinal dysmotility and *H. pylori* infection have been considered. Up to half of the patients of non-ulcer dyspepsia have chronic gastroduodenitis.
- Patients with non-ulcer dyspepsia respond well to therapy for peptic ulcer.
- Gastric cancer may mimic peptic ulcer and non-ulcer dyspepsia in early stages and must be excluded if the older patient shows atypical manifestations.

### ***Cancers of the gastrointestinal tract***

- Cancers of the gastrointestinal tract increase with age. Cancer of the colon is more common in women and cancer of the rectum is more common in men.
- Symptoms include change in bowel habits, new onset of constipation or diarrhea, decreased size of stool, blood in stool, loss of appetite, wasting, weight loss, weakness, and dull pain radiating to the back which can be relieved by bending. The morbidity and mortality associated with colorectal cancer is very high.
- Colorectal examinations are recommended for screening for cancer. Digital rectal examination and checking of stool for occult blood should be part of routine health checks for older people.
- The incidence of cancer of the oral cavity, oesophagus and stomach also increases with age. In some ethnic groups the occurrence of these cancers is higher as compared to others, probably due to dietary factors and tobacco chewing.
- Oral screening for sores and other signs of cancer should be done, especially among persons who are at high risk from smoking, chewing tobacco and drinking alcohol or especially hot beverages regularly.

## **Constipation**

- Older persons frequently complain of constipation and often actually have more constipation than younger persons. However, this problem is not a function of normal ageing since there are few age-related changes in the gastrointestinal tract. Bowel motility does not decrease with age.

***Constipation is not a part of normal age-related changes.***

- Diet deficient in fibers and poor fluid intake are most important causes of constipation in old age. Other causes of constipation are:
  - Drugs: diuretics, anticholinergics, opiates and antidepressants
  - Mental health problems: depression and dementia
  - Laxative abuse
  - Inadequate water consumption
  - Inadequate fiber (fruits and vegetables) in diet
  - Chronic debilitating disease and functional disability
  - Lack of physical exercise
- Long-term complications of constipation are faecal impaction, megacolon, urinary infection and incontinence and confusional state.
- Impacted stool needs to be removed manually, which is unpleasant, embarrassing and can cause rectal bleeding.
- Use of laxatives and purgatives are very common in old age. A right mix of lifestyle changes and laxatives can relieve constipation in old age.

***The diagnosis of gastrointestinal diseases has been revolutionized in recent years by the advent of endoscopy. This advantage must be passed on to older patients by timely referral.***

## **Hepatobiliary disease**

- Acute liver injury in older patients is often due to drugs.
- A large number of drugs used in the elderly may have adverse hepatic side defects. These include analgesic and NSAIDs, co-amoxyclav, rifampicin, tetracyclines, isoniazid, phenothiazines, amiodarone, nifedipine, captopril, statins, tricyclic antidepressants, anabolic steroids, anti-cancer drugs and halothane. Some of these drugs manifest through dose-dependant mechanism whereas others may be idiosyncratic reaction and unpredictable. The nurse must be vigilant for development of nausea, anorexia and jaundice in a patient who is receiving these drugs.
- Though most viral hepatitis occur in younger patients Hepatitis B and C may manifest in older patients receiving blood transfusion.
- A large number of the older patients presenting with jaundice may have obstructive jaundice and liver malignancy. Cancers commonly causing obstructive changes are carcinoma of the head of pancreas and carcinoma of the gall bladder. Both these conditions have got extremely poor outcome apart from the morbidity of obstructive jaundice.

## ***Module 9: The Endocrine System***

### **Learning Objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate normal age-related changes in the endocrine system
2. Develop nursing care plans for diabetes mellitus in older patients
3. Identify thyroid disease in older patients and develop nursing care plans

### **Contents**

- Normal age-related changes in the endocrine system
- Diabetes mellitus
- Hypothyroidism
- Hyperthyroidism

### **Normal age-related changes in the endocrine system**

- Endocrine functions start declining from the time of puberty. Hypothalamic responsiveness to changes in internal milieu and hypothalamic-pituitary regulation of releasing hormone and stimulating hormones decline with age.
- The robustness of the circadian rhythm of various hormones declines.
- The circulating growth hormone level declines and is possibly responsible for many manifestations of ageing.
- The size of the thyroid gland increases but mostly because of deposition of connective tissues. Secretion and metabolism of both the thyroid hormones are reduced, giving rise to normal blood levels.
- Basal, circadian and maximal levels of glucocorticoids and circulating levels of mineralocorticoids are maintained within the normal range.
- Ageing is associated with glucose intolerance. The factors that lead to the derangement of carbohydrate metabolism are:
  - Decreased glucose-induced insulin secretion
  - Impaired insulin-mediated uptake of glucose by skeletal muscle and adipose tissue
  - Influence of increased body fat, physical inactivity, reduced dietary carbohydrates, impaired renal function, increased sympathetic nervous system activity and effect of drugs (thiazide).

### **Common endocrine problems**

#### ***Diabetes mellitus***

- Diabetes mellitus is a common health problem in old age as more than 50% of all diabetics are over the age of 60 years. However, only 50% of the elderly diabetics are diagnosed.
- Majority of the elderly diabetic have non-insulin-dependent diabetes (NIDDM) though insulin-dependent diabetics (IDDM) are also now living to ripe old age with better management.
- A fasting venous blood glucose of 120 mg % or more and a level of 180 mg % after two hours of 75 gm of oral glucose indicates a definitive diagnosis of diabetes.

- Older diabetics with vascular and neurological complications of diabetes burden the hospital services 2-3 times more than the general non-diabetic population.
- Most long-term complications of diabetes such as hypertension, diabetic foot disease, diabetic neuropathy and retinopathy are the diseases of advancing age. Diabetes increases the risk of mortality and is associated with reduced life expectancy.
- The aims of managing diabetes in the elderly are:
  - To relieve symptoms of hyperglycaemia, prevent undesirable weight loss or weight gain and avoid hypoglycaemia and other adverse drug reactions.
  - To assess the impact of co-existing systemic medical illnesses such as hypertension and IHD.
  - To screen and prevent complications
  - To recognize disability, limit handicap and maintain well-being and quality of life.
- Various common problems faced during the management of diabetes are:
  - Irregular oral intake (confusion, poor appetite, concurrent illness)
  - Recurrent infections (UTI, LRTI, skin)
  - Leg ulcers, bedsores
  - Increased vulnerability to hypoglycaemia
  - Concurrent systemic disease (heart failure, renal failure)
  - Difficulty in communication
  - Lack of infrastructure (experienced health professionals, monitoring facility).
- Control of blood sugars can be achieved by:
  - Balanced diet (calorie and composition);
  - physical exercise; and
  - oral hypoglycaemic drugs in NIDDM and insulin in IDDM.
- Insulin is indicated in NIDDM for proper control despite oral hypoglycaemic drugs, in the presence of infection, ketosis, hyperosmolar state, surgery and diabetic neuropathy.
- The nurse needs to educate the diabetic patient about: need to follow a planned diet, insulin injection, symptoms of hypoglycaemia care of the feet, regular eye check up, and blood pressure monitoring.

### *Hypothyroidism*

- Hypothyroidism is a clinical state which results from decreased production of thyroid hormone. Deficient thyroid hormone secretion is most commonly a result of primary dysfunction of thyroid gland and infrequently secondary to pituitary or hypothalamic failure to secrete TSH and TRH respectively.
- Hypothyroidism is a common problem in older subjects with a strong predilection for female sex. Common causes of primary hypothyroidism in old age are immune-mediated thyroid destruction, burnt-out Graves' disease, radio-ablation and surgical removal of the gland.
- Hypothyroidism in old age presents itself in a most insidious manner after developing over many years. As a result the patient and close relatives are rarely aware of the disease and attribute most physical alterations to the ageing process. Classic features

of hypothyroidism are detected in only 10% of the laboratory-confirmed cases. Neuro-psychiatric manifestations are most frequent and include cognitive impairment, depression and delirium. Stressful conditions can precipitate an acute decline in the mental status presenting as coma.

- Obesity, deafness, coarse skin, cold intolerance, hoarse and slurred voice, fatigue, arthralgia, entrapment neuropathy and a low cardiac output state with bradycardia are other common features in old age.
- Sub-clinical hypothyroidism is not an uncommon problem in old age where lipid metabolism abnormalities or depression may be the only manifestation.
- Definitive diagnosis requires demonstration of high TSH values with low T<sub>3</sub> and T<sub>4</sub> concentrations.
- Replacement of L-thyroxine is the most definitive treatment of hypothyroidism. In older patients the replacement should start with a very low dose (0.025 mg) and increases slowly to avoid cardiovascular toxicity.

### ***Hyperthyroidism***

- Over- production of thyroid hormones leads to the clinical condition of hyperthyroidism. This disease is common in old age and 20% of all thyrotoxicosis patients are aged 60 years or more.
- In contrast to younger patients, hyperthyroidism in old age is more likely to be due to multi-nodular toxic goitre than Graves' disease. Other causes include toxic adenoma, thyroid supplementation and ingestion of iodine or iodide-containing substances.
- The clinical presentation of thyrotoxicosis in old age is rarely classic and includes a progressive functional decline, anorexia, weight loss, fatigue, cardiac arrhythmia and cardiac failure.
- A syndrome termed as "apathetic hyperthyroidism" comprising of weakness, lethargy, listlessness, depression and chronic wasting may be the presenting features.
- Classical features of hyperactivity, irritability and restlessness so common in younger age-groups may be absent. Sub-clinical hyperthyroidism in older patient may present itself as refractory atrial fibrillation.
- The diagnosis of thyrotoxicosis requires the demonstration of high-circulating T<sub>3</sub> and T<sub>4</sub> with low TSH values in blood. Thyroid scan is also essential to delineate thyroid anatomy and planning of treatment.
- The management of thyrotoxicosis in old age requires early control of cardiovascular manifestations by  $\beta$ -adrenergic blocking agents (propranolol, atenolol) and control of toxic symptoms by antithyroid drugs (propylthiouracil, carbimazole). Thyroid ablation by radioactive iodine is a good option in older patients, which provides one-time treatment without resorting to surgery.

## ***Module 10: The Musculoskeletal System***

### **Learning objectives**

On completion of this module, the trainee should be able to:

1. Enumerate normal age-related changes in musculoskeletal system.
2. Identify the common musculoskeletal diseases and develop nursing care plans.

### **Contents**

Normal age-related changes in the musculoskeletal system

Common diseases and their management

### **Normal age-related changes in the musculoskeletal system**

#### ***Muscles***

- Loss of muscle strength is the commonest musculoskeletal problem of old age. Several factors contribute to the loss of muscle strength whose relative contribution varies from individual to individual. These include:
  - Loss of motor cells and their replacement by fat and connective tissue.
  - Failure to achieve maximal activation of muscles due to: loss of motivation, reflex inhibition, various types of arthritis with or without pain.
  - Disuse and detraining
  - Deficiency of anabolic hormones such as growth hormone and male and female sex hormones.

#### ***Bones***

- Bone is a dynamic tissue which undergoes constant remodeling throughout life with an important role in maintaining blood calcium levels and providing mechanical support to the body.
- Bone mass changes throughout life in three phases: growth, consolidation and involution. Ninety percent of the bone mass is formed during childhood and adolescence till the closure of epiphysis. In the next 15 years of the consolidation phase bone mass increases to reach the peak at around mid-thirties in both the sexes.
- In the involution phase bone loss starts between 35 and 40 years in both sexes, which accelerates in the decade following menopause. Women lose 35% to 50% of the trabecular bone (vertebrae, hip and end of long bones) and 25% to 30% of the cortical bone (shaft of long bones) while men lose 15% to 45% of the trabecular bone and 5% to 15% of the cortical bone.
- The loss of bone mass involves loss of both minerals and proteins. This results in bone becoming less dense and porous.

#### ***Joints and periarticular soft tissues***

- With ageing the surface of the joint cartilage tends to break down. There is decrease in tensile stiffness, fatigue resistance and strength of the joints.

- Periarticular soft tissues, such as inter-vertebral discs, ligaments, tendons and capsules of joints undergo several age-related changes. There is gradual decrease in the water content, volume and mechanical resistance of intervertebral discs, a change similar to that seen in cartilage. There is thickening, distortion and fibrosis of joint capsules. Ligaments and tendons lose tensile strength.

### **Consequences of age-related changes in the musculoskeletal system**

- The most important functional impairment is a marked loss of muscle strength.
- There is a reduced range of movement of the spine and peripheral joints and loss of joint proprioception contributing to problems of balance.
- Changes in vertebrae lead to kyphosis and loss of height.
- These changes lead to joint and particular pain and difficulty in initiating movement due to stiffness.
- Susceptibility to trauma increases.
- To overall result of these functional impairments is locomotor disability which is only next to visual disability in prevalence.

### **Common diseases**

#### ***Osteoarthritis***

- Osteoarthritis is a heterogeneous degenerative disease of the joints. The prevalence rises with age and osteoarthritis of the knee is the most important cause of pain in the elderly living in communities.
- Pathologically it is characterized by a loss of and change in the composition of cartilage, leading to failure of normal responses to stress. Consequently, the cartilage breaks down and the bone is exposed and a clinical syndrome of pain and disability is established.
- Osteoarthritis is usually a result of an excessive and inappropriate mechanical stress or follows joint disease secondary to trauma, infection, inflammation, endocrine or metabolic diseases. In a substantial number of patients no cause can be demonstrated.
- Osteoarthritis usually affects the weight-bearing joints such as knees, hips, lower spine, cervical spine and fingers. The onset is usually gradual.
- Radiological features are usually diagnostic and include: loss of joint space, marginal osteophytes, subchondral sclerosis and loss of alignment.
- Being a degenerative disease, treatment of osteoarthritis is limited to symptomatic relief with analgesics and physiotherapy. Replacement of hip and knee are very useful but not affordable for most older people. .

#### **Clinical features of osteoarthritis**

- **Pain**
- **Stiffness**
- **Bony swelling and crepitus**
- **Loss of movement**
- **Instability**
- **Loss of function**

### ***Rheumatoid arthritis***

- Osteoarthritis should not be confused with rheumatoid arthritis (RA), which is an inflammatory arthritis involving peripheral joints.
- RA is a common problem whose prevalence increases with age. Usually the presentation is insidious on onset with characteristic features of an inflammatory synovitis.
- Clinical symptoms include joint pain and swelling with tenderness and stiffness, which is maximum during morning hours. Hands, wrists and feet are the frequently involved joints. Malaise and fatigue are prominent systemic symptoms. Extra-articular manifestations are common and involve most systems.
- Diagnosis is usually clinical, supported by radiological abnormalities and presence of rheumatoid factor in serum.
- The course of the disease can be rapidly progressive or intermittent with short or long remissions.
- Treatment of RA involves analgesia with NSAIDs, modification of the course of the disease with disease-modifying drugs (methotrexate, chloroquin, corticosteroids), rehabilitation and corrective surgery if required.
- RA in older patients has some specific problems which include immobility, effect of co-morbid conditions and risk of adverse effects from NSAIDs.

### ***Osteoporosis***

- Osteoporosis is defined as a systemic skeletal disease characterized by low bone mass and micro-architectural deterioration of the skeleton, leading to enhanced bone fragility and increased fracture risk.
- Osteoporosis is now recognized as a common health problem in old age. It is estimated that about 40% of the post-menopausal women in India are osteoporotic.
- It is silent until the medical complication occurs, which in this case is an osteoporotic fracture. The number of the elderly women who have osteoporosis-related crush fractures of the spinal vertebrae or fractures of either the radius or the neck of the femur has reached epidemic proportions.
- Risk factors
  - The aetiology of osteoporosis is multi-factorial.
  - The primary factors are increasing age, heredity and oestrogen status.
  - Other risk factors which can cause osteoporosis are:
    - Premature and surgical menopause
    - Heavy tobacco and caffeine use
    - Alcoholism
    - Inadequate dietary calcium and vitamin D intake
    - Small build
    - Sedentary lifestyle
    - Drugs: corticosteroid and anti-epileptic drugs
    - Co-morbid conditions: hyperthyroidism, diabetes
- Osteoporosis is a silent disease. Its clinical importance lies in the fact that it may lead to fracture which produces pain and deformity.
- The most common fractures to occur are that of the wrist, the hip and the vertebra. Hip fractures are the most severe and are associated with significant morbidity and

mortality. A significant collapse of one vertebral body usually leads to severe pain. In addition to repeated pain, numerous crush fractures result in loss of height and often in marked kyphosis which may lead to cardio-pulmonary embarrassment and severely reduced exercise tolerance and disability.

- **Diagnosis**
  - Earlier, the diagnosis of osteoporosis was used to be made with the occurrence of fracture. The current trend is to make diagnosis early to make interventions work.
  - Early diagnosis is based on measuring the bone density. There are several techniques to measure bone density, of which dual-energy, X-ray absorptiometry (DEXA) is most reliable. For the diagnosis of osteoporosis and osteopenia, standardized guidelines by WHO are used.
  - As it is not possible to undertake universal screening, women 50 years of age or older, with four or more risk factors, are required to undergo bone densitometry. However, bone densitometry is costly and not yet widely available in India.
- **Management of osteoporosis**
  - The primary goal of the management of osteoporosis is to prevent osteoporosis in the first place and prevent fracture, if osteoporosis has already set in by treating it.
  - The goals of the treatment of osteoporosis include increasing the bone mass and reversing bone loss and stimulating bone formation. Various drugs used in the treatment and prevention of osteoporosis are:
    - Anti-resorptive agents: oestrogen, bisphosphonates, calcium, calcitonin
    - Bone formation agents: fluoride, parathyroid hormone
    - Agents with unknown action: vitamin D and analogues, anabolic steroids.
- **Primary prevention of osteoporosis involves:**
  - Taking diet rich in calcium and vitamin D
  - Avoiding tobacco, alcohol and excess of tea and coffee
  - Brisk physical exercise
  - Hormone replacement therapy for post-menopausal women
  -

### ***Falls and fractures***

- Hip fracture which results from accidental and non-accidental falls is a serious threat to the health of older people and can lead to major disability and often death.
- Since most musculoskeletal disorders are irreversible, interventions for adapting to the environment are required so that limitations in activities of daily living (ADL) are affected as little as possible.
- It is very important that one anticipates what the needs will be of older persons with this condition. Adaptations in clothing, modifications in home environment in providing fixed support to avoid falls, periodic rest, avoidance of excessive exercise and weight loss are some of the recommendations which can be useful in elderly patients with musculoskeletal disorders in preventing falls and fractures.
- The nurses can educate the patients about the diet and physical activity in preventing osteoporosis.

***The need for a safe environment cannot be over emphasized.***

## ***Module 11: The Genito-Urinary System***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Enumerate normal age-related changes in the genitourinary systems of men and women.
2. Identify normal age-related changes and common diseases
3. Develop nursing care plans for common diseases of the urinary system.

### **Contents**

- Normal age-related changes in the genitor-urinary system of men and women
- Late- life sexuality
- Urinary incontinence
- Other common problems

### **Changes in genito-urinary reproductive system**

- Menopause takes place between the early 40s and 50s in after which the ovaries reduce their production of female sex hormones. Several physical and emotional changes occur, which have short-term and long-term implications. Most women beyond the age of sixty years would have gone through the early post-menopausal physical and emotional symptoms.
- In early sixties the long-term implications of menopause namely structural changes in sex organs, urinary tract and skin and an increasing risk of IHD, osteoporosis, dementia and certain types of cancer would be more evident. Except for these effects of oestrogen loss after menopause, there is very little change in a woman's sexual ability.
- Older men do not experience hormonal changes to the extent that women do, although testosterone decreases after sexual maturity. The main effect of testosterone deficiency is on penile erection, premature ejaculation and loss of libido. Sperm production generally does not end until the mid-seventies. Most men over 65 years of age have at least some enlargement of the prostate.
- The kidney size and number of nephrons decline with age. The number of nephrons per kidney decreases by 30-50% between ages 25 and 85 years. The micro-architecture of the nephorn is distorted, as a result of which the remaining filtering units also function less well. The blood circulation declines as a result of sclerosis of renal vasculature. The glomerular filtration rate (GFR) declines nearly 50% between 20 and 90 years of age.
- In spite of all these changes the kidneys maintain the volume and composition of the extra cellular compartment within normal limits in old age. However, in the face of physiological or pathological stress the compromised renal function becomes apparent.
- The kidney becomes less responsive to sodium loss. The anti- diuretic hormone (ADH), which acts to alter the permeability of certain kidney cells for the conservation of water, is less effective with the loss of sodium and water.

- Glomerular filtration is usually the highest during day time with the largest volume of urine excretion. In older people, this pattern is altered and kidneys continue to be quite active during the night.
- The bladder capacity decreases from 500-600 ml to about 250 ml. Not only is the capacity lowered but there is also more residual urine remaining after voiding. The smaller capacity of the bladder, coupled with higher night-time glomerular filtration, results in the older persons getting up several times during the night to urinate.
- Older women usually have less muscle power in the abdominal and perineal muscles, which makes bladder control more difficult.
- In men, enlargement of the prostate can block the flow of urine through the urethra, causing hesitancy and difficulty initiating the stream and finally leading to retention of urine or retention with overflow.
- The net result of the changes in the kidney and urinary tract are:
  - Higher risk of infection
  - Risk of life-threatening hyponatremia
  - Necessity of adjustment of drug dosage in old age
  - Nocturia
  - Urinary incontinence

### **Late-life sexuality**

- Cultural norms, attitude of the individual and the family, value systems and religious beliefs, physical health and emotional and environmental factors affect the expression of sexuality.
- There is a great variation in late-life sexuality depending on culture. All cultures have myths about sexual practices in old age such as (a) older people have no sex drive, or (b) sexual behavior among older people is not decent.
- By denying the need for sexual expression in old age, society makes the aged sexually invisible, which affects their feelings of self-worth and attractiveness. At a time when the need for intimacy and belonging is greatest, this can lead to loneliness and isolation. As members of society, health professionals also hold negative views about the sexuality of older adults.
- An older person's attitude to sexuality depends on
  - His or her past experiences
  - Positive psychological development
  - Physical health
- Health problems such as cardiovascular disease, respiratory diseases, cancer, arthritis, osteoporosis, stroke, Parkinson's disease, anemia, diabetes, chronic prostatitis in men and chronic cystitis in women, urinary incontinence and functional limitations can reduce sexual desire and activity. As in all age-groups, any surgery which greatly affects physical appearance can cause doubt about self-image and attractiveness to the partner.
- Again, as in all age-groups, sexually transmitted diseases (STDs) pose a very difficult situation.
- The emotional state of the older person affects sexual performance. Grief over the death of loved ones, role adjustment after menopause and following retirement, fear,

stress and worry lack of privacy when living with children or when living in a nursing home or other institutional settings, all interfere with feelings of sexuality. The death of the spouse may leave the remaining person frustrated.

- Many drugs have side-effects which either reduce sexual desire or cause impotency in men; these are: sedatives, certain analgesics, anti-spasmodics, tranquillizers, anti-depressants and certain anti-hypertensives. Their effects on women are less well-understood. To reduce symptoms the physician can adjust most drugs.
- In counseling older persons who seek advice, health professionals should emphasize the quality of relationship with a focus on the person rather than the performance, and be well-informed and comfortable so that correct, unbiased information is provided. Sexuality should always be described in the broadest sense that is beyond just sexual intercourse, including social participation, finding meaning in relationships, holding hands, hugging and so on.
- It is always important to feel attractive and look one's best. This can be achieved by not smoking, avoidance of alcohol, control of blood pressure and weight, balanced nutrition, regular exercise, attention to personal appearance and use of fragrances and other cosmetic pleasantries as desired. Age-related physical changes in the reproductive and musculoskeletal systems can be easily managed by small adjustments.

## **Common diseases**

### ***Urinary tract infection***

- Significant bacteriuria or the presence of > 10 organisms per milliliter of urine with or without symptoms is considered as urinary tract infection. (UTI).
- The prevalence of bacteriuria increases with age though it is more common in women. Asymptomatic bacteriuria can be detected in 30% of the elderly females and 10% of the elderly males above the age of 65 years.
- The prevalence of asymptomatic bacteriuria is much higher in chronically ill patients and can be detected in 20% of males and 60% of females.
- Asymptomatic bacteriuria does not require therapy and is not significantly associated with serious renal disease. Antibiotic therapy of asymptomatic bacteriuria only results in temporary clearance of infection.
- Symptomatic urinary tract infection in elderly patients is nearly always secondary to the introduction of the organism to the urinary tract by catheterization or any other instrumentation.
- Factors that encourage the growth and persistence of the infection in the urinary tract are:
  - Structural abnormalities in the urinary tract (prostatic hypertrophy, uterine, prolapse, strictures, stones and neurogenic bladder)
  - Renal scars associated with vesico-ureteric reflux
  - Vascular insufficiency
  - Declining immunity
- In patients, living in community, *E. coli* is the commonest isolated organism in 85% of cases.

- In the institutionalized elderly the profile changes to *Proteus*, *Klebsiella* and *Pseudomonas*.
- Symptomatic UTI always needs to be treated. Five to seven-day course of therapy with amoxicillin, cotrimoxazole, norfloxacin or ciprofloxacin is effective.
- In the presence of shock and septicaemia, parenteral antibiotic therapy with ciprofloxacin, cephalosporin or aminoglycosides and hospitalization are required.
- Management of urinary tract infection in a catheterized patient is difficult.

### ***Benign prostatic hypertrophy***

- Benign prostatic hypertrophy (BPH) is an extremely common problem of advancing age.
- Enlargement of the periurethral portion of the prostate leads to the obstruction of urinary outflow.
- The symptom complex associated with BPH is well-known, which begins with features of prostatic hyperplasia and ends up with urinary obstruction.
- Diagnosis is usually done by rectal digital examination and ultrasound examination of the bladder and the prostate. Urodynamic studies help in the therapeutic decision-making.
- Till recently surgery, initially abdominal and later transurethral, was the only mode of therapy for prostatic hypertrophy.
- In recent years medical management with specific long-acting  $\alpha_1$  adrenergic antagonists (such as terazosin) and  $\alpha$ - reductase inhibitors (finasteride) have been used with excellent results.

### ***Malignancy of prostate***

- Cancer of the prostate is a common malignancy of old age which can be detected early by screening and managed satisfactorily.
- Clinical manifestations are either silent or similar to benign hypertrophy in early stages. In late stages when skeletal metastasis is frequent it becomes one of the most painful conditions. Unfortunately, a majority of the patients with cancer of the prostate present with metastatic disease.
- Management involves radical surgery in early stages, and in younger patients when co-morbid conditions do not seriously impair functional status.
- In not-so-fit patients, hormonal manipulation with anti-androgens, namely, non-steroidal flutamide and steroidal diethylstilboesterol, have been found to be effective when combined with bilateral orchidectomy. Radiotherapy is another alternative in such patients.
- Early detection with regular digital examination and assay of a specific marker PSA (prostate-specific antigen) has currently emerged as useful strategies for secondary prevention.

## *Urinary incontinence*

- Urinary incontinence can be classified as either acute and transient or chronic and persistent.
- Acute incontinence can be due to urinary tract infections, vaginal infections, fecal impaction, medication use, confusion and systemic sepsis. Acute incontinence resolves as soon as the underlying causes is treated.
- Chronic urinary incontinence can be:
  - Stress incontinence: loss of urine during coughing, sneezing, laughing or other physical activity that increases abdominal pressure.
  - Urge incontinence: loss of urine associated with an abrupt and strong desire to void.
  - Overflow incontinence: loss of urine associated with over-distension of the bladder.
- Managing incontinence depends on the type of incontinence. Drugs and surgery are sometimes needed; however, most symptoms can be minimized by behavioral techniques and adaptation to the environment.
  - Stress incontinence is usually managed by improving the strength of pelvic musculature.
  - Urge incontinence is managed by anti-cholinergic drugs and pelvic muscle exercise.
  - Overflow incontinence is associated with full bladder and requires intervention for the primary disease. In the presence of irreversible conditions such as neurogenic bladder, catheterization may be require.
- In addition, the patient needs to be educated with several behavioral interventions, such as :
  - Bladder retraining by regular voiding at 2 hour interval even if there is no urge
  - Limitation of fluid intake to the day time
  - Using some form of protection because leakage and accidents are common
  - Wearing loose clothing so that changing clothes is easier
  - Avoiding strenuous exercise
  - Limiting the use of dietary irritants: caffeine, carbonated drinks, highly acidic foods
  - Practice relaxation techniques
  - Maintain good skin care and good hygiene
  - Monitoring for urinary tract infection

*The commonest untold misery for older people is urinary incontinence*

## ***Module 12: Mental Health***

### **Learning objectives**

On the completion of this module, the trainees should be able to:

1. Identify the stresses of old age;
2. Understand the social and cultural barriers in accepting mental health services; and
3. Identify common mental health problems in old age and develop nursing care plans.

### **Contents**

- Stresses of old age
- Barriers to accepting mental health problems in old age
- Psychiatric diseases of old age
- Depression

### **Stresses of old age**

- Common situational stresses in the older people include:
  - Widowhood and the death of other significant relatives
  - Stress of caring an aged and diseased spouse or relative
  - Fear of death, disability leading to loss of independence
  - Changes in living arrangements and previous roles
  - Social isolation, loneliness
  - Ageism and age discrimination
- The emotional response to these problems include grief, guilt, loneliness, loss of meaning in life and lack of motivation, anxiety, anger, feelings of powerlessness and depression

### **Barriers to accepting mental health problems in old age**

A positive mental outlook is essential to healthy ageing. However influenced by cultural attitudes and value systems mental health problems are usually not acknowledged by older people and their families. Non-acceptance of mental ill health and avoidance of services is common in most societies especially in older people because:

- Feeling of shame;
  - Conviction that suffering should be endured and healing is in God's hand;
  - Feeling of guilt and viewing mental illness as a repayment for sins of past; and
  - Apprehension of loss of emotional control and dignity.
- As a result elderly patients may seek medical care for non-specific somatic complaints such as headache, insomnia, dizziness or other vague physical symptoms instead of seeking psychiatric care
  - Seeking help from traditional healers is also common prior to approaching the modern health care system. The mental health needs of older people are greatly underestimated despite very high prevalence of psychiatric illnesses

## Psychiatric diseases of old age

- Older people suffer from a wide range of psychiatric disorders. Concurrent physical illnesses increase the vulnerability to mental health illness.

### Common psychiatric problems in old age

- Depression
- Anxiety disorders
- Post traumatic stress disorder and bereavement
- Somatoform disorders
- Late life delusional disorders
- Obsessive compulsive disorders
- Personality disorders
- Self-neglect
- Alcoholism
- Drug and substance abuse
- Cognitive impairment and dementia

## Depression

- Depression is the commonest mental health problem in old age.
- Usual symptoms are mood disturbances, lack of interest and initiatives, somatic complaints, sleep disturbance and agitation. Other symptoms include anorexia, thoughts of death, impaired concentration and dysphoria (symptom complex with depression, anxiety and restlessness). Female patients may present with depressed mood, guilt, anxiety and diurnal mood variation.
- The clinical features of depressive disorders may not be classical in old age due to co-existing medical problems or cognitive impairment. Often the standard diagnostic criteria may miss major depressive disorders.
- The prevalence of this disorder varies widely from 3% in the elderly living in the community to 45% in the institutionalized elderly. The overall prevalence rate is generally believed to be between 10% and 20% depending on cultural variations.
- Cognitive impairment is frequently associated with depression. Prominent cognitive impairment at initial presentation that responds to anti-depressant therapy is termed as depressive pseudo-dementia.

- Depression destroys the enjoyment of living and interferes with the quality of life. As in younger patients, suicide is also an association of depression in old age, especially in men.
- The diagnosis of depression is usually clinical. Several specific diagnostic instruments are available for the management of depression in old age, of which the geriatric depression scale is most commonly used and is very sensitive.
- Though a common problem, only a minority of older patients with depression are diagnosed and treated. Most health workers conceptualize depression in old age as a legitimate and an unavoidable consequence of ageing, which is recognizable but not treatable.
- Depression in old age is treatable. No particular drug is superior over others and therapeutic doses of tri-cyclic antidepressants and serotonin re-uptake inhibitors (fluoxetine, sertraline) have been known to be safe from cardiac toxicity. The dosage of drug need not be altered.
- Lithium is also effective in old age despite an increased risk of nephro-toxicity. There is evidence that anti-depressants take as long as 10-12 weeks to be effective in older patients. Electro-convulsive therapy (ECT) is safe in old age with more than 60% recovery rate. Psychotherapy is also useful in depression in old age, though grossly underused.
- With treatment about one third of the patients, get better, one third remain the same, and one third get worse with treatment. In actual terms, 60% of the patients improve with treatment though with risk of relapse.
- Depressive patients with cognitive impairment have a poorer prognosis. Mortality in the elderly depressives is higher than the age and sex matched controls, which may be due to co-existing systemic diseases.
- There is great need of family and patient education regarding nature of the disease, treatment, prognosis and the risk of suicide.

## ***Module 13: The Sensory System***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Describe the normal age-related changes in the sensory system and their implications
2. Identify common health problems and develop nursing care plans for common problems.

### **Contents**

Normal age-related changes in the senses:

- Skin
- Vision
- Hearing
- Taste and smell

Common disease conditions and their management

### **Skin**

#### ***Age-related changes***

- The thickness of epidermis decreases along with loss of moisture making the skin dry and rough. The melanocyte number declines, which reduces the protection against sun rays and leads to appearance of small hypopigmented spots (actinic lentiginos).
- In the dermis the fibroblast number and the production of extracellular matrix decreases causing wrinkling of the skin.
- The number of skin Langerhans cells decreases along with vascularity. As a result, skin infection is common and wound healing is slow.
- Scalp hair turns grey due to loss of melanin. There is loss of hair on the scalp. Growth of nails slows down.

#### ***Common disease conditions***

- Infections: Common infections are herpes zoster, scabies and pyoderma. In certain parts of the country leprosy is still a problem for all age-groups, including the elderly.
- Decubitus ulcer: Common in bedridden patients suffering from neuromuscular diseases.
- Pruritus: As a result of dryness or systemic disease. Treatment: emollients, antihistaminics.
- Xerosis: Dry and rough skin as a result of ageing. Treatment: emollients.
- Seborrheic dermatitis: Treatment: topical anti-fungal or cortisone cream.
- Drug reaction

## **Eye**

- Eyelids become lax. The lid margins rotate away from the eyeball causing disruption of flow of tear. Lachrymal gland secretion is reduced and eyes become dry.
- Subconjunctival vessels become fragile and give rise to subconjunctival haemorrhage.
- There is fluid accumulation in endothelial cells of cornea which clouds its transparency. Fluid deposition in the periphery of the cornea gives rise to arcus senilis.
- Distortion of the anterior aspect of uveal tract leads to chronic close-angle glaucoma.
- Lens becomes rigid and there is loss of accommodation (presbyopia). Denaturation of lens protein leads to formation of cataract.
- Different layers of retina undergo degeneration and manifests as macular degeneration of that part of the retina is involved.
- The net effect of these age-related changes in the eyes are:
  - Inability to see small objects and details
  - Defective accommodation and defective depth perception
  - Extra sensitivity to glare
  - Defective color vision, i.e. red, orange and yellow seen better than blue, green and purple

## ***Common diseases***

### ***Cataract***

- Cataract is the commonest cause of visual impairment in old age.
- The basic pathology involves denaturation of lens protein. Multiple factors contribute to development of cataract; these are: family history, malnutrition, diabetes, smoking, medications such as steroid and previous eye surgery.
- Cataract is characterized by painless blurring, gradual loss of vision, increased sensitivity to glare and general darkening of vision. Signs and symptoms include (i) frequent changes in eye glasses (ii) needing brighter light to read (iii) poor night vision, and (iv) fading or yellowing of colors.
- Cataract interferes with the older person's ability to live and function independently. Cataracts usually develops in both eyes in persons over 50 and are present to some extent in most persons over 70 years of age.
- Treatment of cataract is generally surgical. Indication of cataract surgery depends on the patient's visual needs. When cataract causes major difficulties with daily routines, then surgery is the treatment of choice.
- Earlier, after removal of the lens, a prescription for glass was essential which has now been replaced by implantation of intra-ocular lens which restores near normal focusing ability.

### ***Glaucoma***

- Glaucoma is a condition in which there is increased intra-ocular pressure due to a defect in the outflow of aqueous humour. Left untreated, glaucoma can lead to blindness.
- Loss of vision from glaucoma can be prevented if the disease is detected and treated before noticeable damage occurs to the optic nerve.

- There are two common types of glaucoma seen in older persons:
  - Open-angle or chronic glaucoma in which there is loss of peripheral vision late in the disease. This is the most common type of glaucoma in older people. Vision loss usually begins with deteriorating side vision, also known as “tunnel vision”. It can happen so gradually and painlessly that the older person is unaware of any trouble until the optic nerve is already badly damaged. The diagnosis is made by measuring intra-ocular pressure using specialized equipment.
  - Narrow-angle glaucoma occurs when there is a sudden blocking of the drainage angle of the eye. Extreme pain, colored halos around lights, headaches, nausea and vomiting, and blurred vision are symptoms of this type of glaucoma. If this condition is not attended to urgently, blindness results.
- Older persons should be screened for glaucoma regularly with the measurement of intraocular pressure, and those with any known history of the disease would need periodic examinations.

### ***Macular degeneration***

- Age-related macular degeneration is a common cause of impaired vision and rarely complete blindness.
- Atrophic form of macular degeneration involves degeneration of retinal pigment epithelium and capillaries, resulting in the dysfunctioning of photoreceptors. There is no treatment for this condition.
- Exudative form of macular degeneration is characterized by capillary leakage and sub-retinal haemorrhage. Laser photocoagulation has been considered useful.

### ***Diabetic retinopathy***

- Diabetic retinopathy is one of the commonest complications of diabetes mellitus. Retinal changes include capillary leak, retinal hemorrhage, vitreous hemorrhage and retinal scarring and detachment.
- Vision may become blurred, distorted or partially blocked. If untreated, this condition eventually leads to blindness. Diabetic retinopathy is a common cause of blindness in old age.
- Development of diabetic retinopathy depends on the duration of the diseases and control of diabetes.
- The primary goal of management is prevention of retinopathy in the first place though proper blood sugar control. Arrest and retard visual impairment if the condition has already set in.
- Several pharmacological interventions have been developed in recent years which include the use of ACE inhibitors and laser photocoagulation.
- Regular monitoring for retinopathy is the single most important step in its management.
- Prognosis of diabetic retinopathy has improved tremendously in recent years with regular monitoring and laser photocoagulation.

## Ears

- With ageing structural changes take place in the sense organ of hearing which includes a decrease in the number of hair cells and ganglion cells. Blood supply to cochlea decreases. There is also a decline in the number of sensory nerve fibers from the sense organ.
- Presbycusis (age-related loss of hearing) is common in older persons. Men are affected a little more than women and more than one-third of the people over 65 years of age have significant hearing impairment.
- Uncompensated loss of hearing can make older people appear mentally impaired and withdrawn. Inadequate hearing can result in lack of understanding and the older person's inappropriate response or expression may be wrongly interpreted as confusion or problems with mental status.
- Hearing loss can also interfere with socialization, as making an effort to listen becomes too embarrassing with eventual avoidance of participation in talking and hearing. The following behavior suggests hearing loss associated with ageing.
  - The older person tends to shout and others tend to speak very loudly to them.
  - The older person often requests to have things repeated.
  - The older person talks little, appears not to participate, or appears to ignore what is going on when in a group of people.
  - The older person becomes suspicious that things are being said about him.
- In addition to these observations, there are several simple tests which can give some idea of the older person's hearing ability. One of them involves standing approximately three feet behind the older person. Using a normal speaking tone, a set of words are to be spoken which the older person has to repeat later. If the older person cannot repeat many of the words, the exercise has to be repeated again from the front with adequate lighting.
- Often a hearing aid can be helpful. However, it must be made sure that the older person and the family know how to (i) insert the appliance (ii) turn it on and off properly (iii) know the battery type and where to get more (iv) know how to test and replace the batteries.
- While communicating with the older person, speaking slowly, facing the person with lower pitch of voice can be more useful than raising the voice and only creating more high frequency sounds, which are heard with difficulty. Avoiding background environmental noise and several conversations at a time in group discussions may be useful.
- Earwax is frequently a cause of, or at least aggravates, hearing difficulties; therefore, this should be the first thing to be checked. Cleaning the ear is usually preceded by insertion of wax-dissolving drops to loosen the cerumen.

## **Taste and smell**

- Taste receptors are located primarily in the taste buds of the tongue. With ageing, the number of taste buds diminishes and the remaining buds have a higher threshold for stimulation to activate them. It is uncertain whether taste declines enough with age to interfere with the enjoyment of eating. It takes more flavor or spice to stimulate taste buds.
- Receptors for smell are located in the lining of nasal passages and the number of nerve fibers decreases with age.
- The perception of how things taste may be impaired by age-related changes in smell. Taste and smell go hand in hand. The combined effects of changes in taste and smell can:
  - Make food taste less appealing, thereby reducing food intake.
  - Conflict with recommended dietary limitations; for instance, excess use of salt and sugar, since reasonable use is hard to taste.
  - Interfere with the ability of smell and taste to protect the elderly from harm. For example, if older persons cannot smell smoke, they may be unaware of a fire hazard.
- Most interventions for age-related decline in taste and smell involve education of the older person and the family about the changes in these senses and the possible dangers to safety which may be associated with them.

### **Implications of sensory decline**

- Decline in sensory system lead to limitations in independent functioning.
- Sensory overload or distortion may overwhelm the elderly and prevent effective functioning by interfering with their ability to understand and correctly interpret clues in the environment.
- These may result in confusion, avoidance of social interaction, isolation, sleep disturbance, loss of appetite, irritability and depression.
- Nurses should identify the sensory impairments early and encourage for early/ timely intervention since the sensory impairments like vision and hearing can limit the older persons physical independence leading to social isolation.

## ***Module 14: Cancer, palliative care and care of the terminally ill***

### **Learning objectives**

1. Enumerate the peculiarities of cancer in old age
2. Enumerate the principles of the management of cancer in old age
3. Enumerate the principles of palliative care

### **Contents**

- Cancer in old age
- Principles of management: surgery, radiotherapy, chemotherapy
- Palliative care

Cancer is a common cause of death for older people all over the world though the nature of malignancy may vary. With increase in the incidence and prevalence of cancer of all types, nurses are more likely to encounter older patients with cancer.

### **Cancer in old age**

- Age is the strongest risk factor in the development of cancer. The increased risk of cancer in old age may be to poor impaired DNA repair, activation of cancer producing genes (oncogenes), loss of cancer suppressor genes, decline in immune surveillance and prolonged exposure to carcinogens.
- Though aged tissues are more prone to development of cancer, its aggressiveness and spread tends to decrease. There are certain cancers which mostly occur after the age of 50 years; namely: oro-pharyngeal cancer, cancer of uterine cervix, colo-rectal cancer and cancer of prostate. Half of the breast and hematological malignancies are encountered after the age of 60 years.
- In western societies 55-60% of all cancers and 70% of all cancer deaths occur after the age of 65 years. Limited data from India suggest that 20% of all cancers are reported in patients above 60 years of age.
- Though the progression of cancer may slow in old age, its diagnosis in older patients is invariably late due to:
  - Lack of interest in the screening for cancer
  - Lack of awareness about the problem
  - Fatalistic attitude towards cancer in general

### **Principles of management: surgery, radiotherapy, chemotherapy**

- Older patients are usually under-treated due to misconceptions that they tolerate surgery, radiotherapy and chemotherapy poorly. Scientific data on very old patients with cancer is scant as most studies tend to exclude them to maintain homogeneity.

- While deciding on the treatment the life-expectancy of older patients should not be underestimated. The older patient with cancer should be approached with the same principles of therapy as patients of any other age-group.
- The perceived frailty of the patient in the absence of any objective evidence should not prevent institution of appropriate treatment. Age does not adversely influence the results of any type of treatment nor does it predispose to higher toxicity.
- The state of physical fitness and mental health should be the consideration rather than the chronological age and all options of therapy should be considered.

### *Surgery*

- The decision to operate in an operable older patient should depend on:
  - Performance status
  - Target organ status
  - Fitness for anesthesia
  - Level of co-morbidity

### *Radiotherapy*

- Poor physical health and the presence of multiple co-morbid conditions can increase radiation morbidity while very old patients in good physical health in early cancer can show good response. The outcome of radiotherapy depends on:
  - Mental state
  - Renal function
  - Cardio-pulmonary reserve
  - Bone marrow resilience
  - Integrity of skin and mucous membrane
- In the presence of chronic debilitating disease, radiation dose can be reduced with not-so-bad results.

### *Chemotherapy*

- Older patients are also candidates for chemotherapy as primary treatment in hematological malignancies and as adjuvant treatment in many solid malignancies. As a general principle, chemotherapy should be given in full regimen. However, modification of the drug dosage depends on:
  - Drug pharmacokinetics
  - State of hepatic and renal function
  - Organ-specific toxicities on bone marrow, myocardium and CNS
  - Improved drug delivery system

## **Palliative care and care of the terminally ill**

- Palliative care is defined as the active and total care of the patient whose disease is not responding to the curative treatment. Thus before palliative care is initiated the diagnosis of cancer and its incurability must be established.
- Palliative care comprises of control of pain, relief of other symptoms, amelioration of psycho-social stress and spiritual support. The goal of palliative care is to achieve best quality of life for patients and their families
- Most terminally ill patients complain weakness, anorexia, pain, dyspnoea, nausea, vomiting, cough, insomnia, confusion, pressure sore, dysphagia, incontinence of urine and stool and problems related to indwelling catheter.
- The most important action in palliative care is pain relief. All attempts should be made to relieve pain at any cost even if it requires round-the-clock oral opium or its derivative
- Most pain killers produce constipation which may become very distressing for the patient. All morphine and codeine prescription must be combined with laxatives and purgatives.
- Other aspects of care of the terminally ill include:
  - Nutrition and hydration
  - Symptomatic treatment of unpleasant symptoms
  - Palliative procedures: chemotherapy, radiotherapy and surgery
  - Social support
  - Spiritual support
- Symptomatic care for all symptoms should be attempted in the right earnest. All nurses must have the ability to provide palliative care.

## **Quality of life in older patients with cancer**

Quality of life is determined by the ability to perform everyday activities which reflect physical, mental and social well-being in the presence of a disease. Patient's satisfaction with cancer treatment is related primary to drug toxicity and then to disease control. Older patients usually prefer good-quality short life to quantity of life.

Nursing care of the terminally ill patient and care giver support system or the corner stones of palliative care.

## ***Module 15: Social Support and services for older people***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Recognize the impact of social factors on ageing process
2. Enumerate the social protection available to older Indians
3. Enumerate the health services required for older people

### **Contents**

- Ageing and society
- Social protection for the older Indians
- Health services for older people

Each society defines old age within its own constructs. Social meanings of old age are significant as specific roles are assigned to older people. In some cases it can be a loss of role accompanying physical decline, which is significant in defining old age. Thus, in contrast to the chronological milestones which mark life stages in the developed world (school age, working age, retirement age), old age in many developing countries is seen to begin at the point when active contribution to the family and community is no longer possible. To remain productive to the family, the community and the society, it is important that one ages gracefully and actively remaining as functional as possible.

### **Social Services and Social Networking**

Social services and social networking have a major impact on the ageing process. It is the social system that provides the long-term care. In most societies family members (mostly women) provide the bulk of support and care to older adults. Most people agree that the best place for the older people is the home. Many older people receive support from the younger generation. Strengthening of this system, by help from formal caregivers and health professionals including nurses is an important determinant of active ageing.

With changing socio-economic scenario in most societies, the practice of living together among several generations has started to decline. Providing protection to older people who are unable to earn a living and are alone and vulnerable, can be challenging. In our society, older people who need assistance tend to rely on family support and personal savings.

Social insurance programs are minimal and only a few state funded services are available for the older persons in India. These include:

1. National old age pension scheme.
2. Old age pension scheme in States of  
Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhatis Garh, Delhi, Gujarat, Harayana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Mizoram, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttaranchal, Uttar Pradesh and West Bengal.
3. Widow pension scheme of Maharashtra, Karnataka, West Bengal and Kerala.
4. Pension and family pension schemes of Central and State Governments.
5. Supply of free grain to destitute elderly under “Annapurna” scheme.
6. Income tax benefits for older people and for those who are caring for older members of the family.
7. Tax benefits with respect to medical insurance premium.
8. Benefits under life insurance, long-term and short-term investment.
9. Health insurance for accidents and hospital treatment.
10. Discounted travel for older individuals in road transport, railways and air lines.
11. Old age home by different State and local Governments.
12. Priority telephone connection
13. Special Counters in railway reservations, income tax return.
14. Training of informal (paid) caregivers by National Open School and National Institute of Social Defense.
15. The older persons maintenance, care and protection bill 2005.

## **Health services for older people**

The goal for organizing health services for older people is to maintain autonomy with concern for their self-respect and welfare of the caregivers. The ideal health system for older people should have the following properties:

- ❖ Comprehensiveness in range
- ❖ Easy accessibility
- ❖ Acceptability
- ❖ Affordability
- ❖ Continuity in content and time
- ❖ Coordinated rather as a loose collection of services

## **Types of Elderly Care Services**

s

- ❖ **Health promotion & disease prevention Services**
  - Health Education (exercise, nutrition)
  - Screening of general health (blood pressure, blood sugar, cholesterol, vision)
  - Screening for cancer of the uterine cervix
  - Specific health promotion program (smoking cessation, immunization, nutritional supplementation)
- ❖ **Curative**
  - Early diagnosis and treatment of day to day ill-health in primary health care
  - Diagnosis and treatment of serious health problems in secondary care (district hospitals, general hospitals) and tertiary care institution (medical schools, corporate hospitals)
  - Chronic care in long-term-care institutions and / or home health care programs
- ❖ **Rehabilitative**
  - Physiotherapy
  - Restorative surgery
  - Prosthesis
  - Occupational therapy
  - Long term care for cognitive impairment and physical disability
- ❖ **Mental Health Services**
  - Counseling services for adjustment (ageing, retirement, relocation, widowhood and bereavement)
  - Drug and substance abuse
  - Ambulatory treatment for mental diseases

It is obvious that the ideal health and social security system does not exist in our society at present. However with rapid population ageing and increasing demand for services, a system will evolve soon. Health professionals at all levels (doctors, nurses, community health workers) will have to contribute to this system.

## *Module 16: Abuse & Violence*

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Recognize abuse of an older person by the care giver; and
2. Develop plans to prevent such abuse.

### **Contents**

- Definition and spectrum of elder abuse
- Detection of abuse
- Management and prevention of elder abuse

### **Elder abuse**

- Elder abuse refers to the ill-treatment of an older person. The usual place of abuse is his/ her home but it can also take place in the joint family and hospital.
- The spectrum of elder abuse is very broad and comprises of physical abuse, psychological abuse, financial abuse, sexual abuse and neglect.
- **Physical abuse** includes non-accidental and intentional use of physical force leading to pain and injury. Examples of physical abuse are slapping, hitting, pushing burning and physical restraint by tying; leading to bruises, fractures, burns, sprains, cuts etc.
- **Psychological abuse** includes repeated and constant use of threats, humiliation, scolding and any other forms of mental cruelty leading to physical and mental distress. Examples of psychological abuse are treating the elderly like a child, blaming, intimidating, threatening violence and isolating, leading to fear, depression, sleeplessness and anorexia.
- **Financial abuse** includes unauthorized and improper use of resources (funds and property) of the older person. Examples of financial abuse are misappropriation of money, valuables and property; forcing the elderly to change the will and not allowing the older person to use his / her resources, leading to loss of money, forced poverty, decline in standard of living and eviction from house.
- **Sexual abuse** includes direct or indirect involvement in sexual activity without consent. Examples of sexual abuse are looking, indecent exposure, harassment, touching of breast or genitalia, penetration and attempted penetration, leading to pain, bruises, bleeding, sexually transmitted diseases and mental trauma.
- **Neglect** includes repeated deprivation of the assistance that the older person needs for activities of daily living. Examples of neglect are failure to provide food, shelter, clothing, medical care, hygiene, personal care and inappropriate use of medicine, leading to malnutrition, bedsores, over-sedation, depression, confusion and life-threatening health problems.

## Identification of elder abuse

Recognition of elder abuse is often difficult. Usually more than one type of abuse co-exists. It is a very sensitive issue and its detection requires a high level of vigilance for detection. Signs of elder abuse include the following.

- Skin injuries, bruises, untreated ulcers and bedsores on the older person with inadequate explanations.
- Evidence of severe malnutrition and dehydration in the absence of obvious disease
- Poor personal hygiene on several occasions when the older person is unable to care for himself / herself.
- Bleeding from genito-urinary tract
- Medical attention is not made available when the older person needs it.
- Medications are not used despite clear instructions from the health professional.
- The older person is afraid or hesitant to talk about his / her state of affairs or injury.
- The older person is left alone without much to do for enjoyment or spending time.

### Likely victims of abuse

- Older widowed women
- Cognitively impaired
- Economically dependent
- Those living in isolation

## Management and prevention of elder abuse

In traditional societies older people avoid discussion on abuse and violence as it goes against their self esteem. The nurse has a role in detecting abuse and intervening tactfully without worsening the situation. Management of elder abuse required involvement of several professionals. The steps involved are:

- Assessment of the older person's physical and mental capacity
- Assessment of general quality of care
- Assessment of relationship with the abuser at home or institution
- Assessment of the abusers for his / their problems
- Counseling of the abuser
- Documentation, liaison and interaction with other professionals (police, lawyer, counselor, social worker) when the victim is incapable of caring for himself / herself or does not want to accept help
- Involvement of other family members, relatives and community leaders
- Institutionalization in old age home or nursing home if abuse cannot be prevented with the above means
- Information to appropriate agencies of the state such as Aadhar, which is a Government of India sponsored voluntary effort provide a grievance redressal mechanism for a variety of old age problem including abuse and violence.

## ***Module 17: Care-giver stress***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Explain the concept of care-giver burden and its implications
2. Develop management plans for care-giver support
3. Identify respite care resources

### **Contents**

- Burden of care-giving
- Assessment of care-giver burden
- Managing care giver stress

### **The burden of care-giving**

In most traditional societies, the family provides care to its older members. Various socioeconomic and cultural changes namely; the strain on the joint family system, have disrupted this age-old set-up.

- People are living longer and this has increased the number of generations living together, sometimes up to as many as three to five generations.
- Housing being very expensive and living space being small, accommodating several generations of old people is becoming harder. This is especially true if the older person requires an aid such as a walker or a wheelchair.
- Traditionally, women, usually the daughter-in-law and sometimes daughters, have been responsible for the care of the elderly. For economic viability, more and more women are going for employment outside the home. As a result, the traditional care model is getting disrupted.
- In the changing circumstances the care of the elderly in the family has become a challenging social issue. It is now possible that two generations of older persons might be existing in a single family and expecting care from younger generations, whose number has dwindled due to smaller family norms.
- Long-term care of a frail and physically-dependent older person leads to a variety of physical, emotional, social and financial stress for the care-giver, which is termed as 'care-giver burden'.
- The care-giver is usually the "hidden patient" and the health care worker must direct some attention towards the needs of the care-giver. Prolonged stress of caring indirectly affects the well-being and living condition of the older person. This may at times lead to abuse or neglect of the elderly

*The care-giver is as much in need of care and attention as the older person.*

## **Assessment of care-giver burden**

While assessing the burden of caring an older person, one has to look at:

- Capability of the older person for self-caring
- Type of care required by the older person (feeding, dressing, bathing and toilet)
- Amount of extra time the care-giver needs to spend in caring for the older person
- Availability of time for the care giver to meet his / her personal needs
- Resources and support systems available for the care-giver
- Vague complaints about physical health by a care-giver should make one suspect that they need more assistance in the home

## **Supporting the care-giver**

- In developed countries “care-giver burden” has been recognized as an important issue in the care of the elderly by the social support agencies. Methods of assessing care-giver burden and supporting them in times of need have been developed. However, in developing countries the concept of care-giver burden is new and carries many negative implications. As a result, no formal system exists.
- The care-giver needs to be supported to:
  - Maintain his / her physical and mental health
  - Avoid development of abusive situations
  - Promote good quality life for the entire family
- The role of the nurse is rather limited in supporting the care-giver in the prevailing system. However, several interventions can be organized with community support and involvement of other health professionals without requiring much resources. Some of the methods of providing assistance to care-givers are:
  - Organization of day hospitals, day-care centers and senior citizen centers which provide recreation, food and social support.
  - Outpatient and inpatient care for the investigation of major problems.
  - Respite care which is aimed at sharing the burden of care with the family and other informal care-givers.
  - Mobile clinics for clinical purpose and as well as rehabilitation.
  - Provision of psychological help for care givers by providing supportive environment, counseling, stress management techniques individually or through self help groups.

## ***Module 18: Counseling the older patient***

### **Learning objectives**

On the completion of this module, the trainee should be able to:

1. Understand the concepts of counseling and health education
2. Develop strategies for counseling an older person

### **Contents**

Definition of counseling  
Principles of counseling  
Dimensions of counseling  
Counseling an older person

**Counseling** is defined as a helping relationship in which a counselor adopts a supportive and non-judgmental role. Counselor helps the client to deal with psychological or emotional problems and provide advice on practical solutions.

It is the process of helping a person who has come with a problem to sort out what's happening and how they feel about it, to look at their options, to choose a course of action that fits their values, resources and lifestyles, to implement their decisions, and to evaluate the practical and emotional results.

“Counseling” should not be thought as a treatment of mental illness. It is about helping normal, functional people to solve their problems and make decisions about opportunities and choices that come up in life.

The main aim of the counselor is to make the client feel that he/she is able to solve his/her problems on his/her own. All of us have within ourselves the capacity to make and implement good decisions in our lives, and the role of the counselor is simply to provide the client with a safe and supportive space in which to examine the pending issues and make decisions.

### **Principles of Counseling**

1. Non- judgmental attitude: The client is to be treated in a neutral and objective manner
2. Confidentiality: The discussions carried out during the counseling are to be absolutely private
3. Respect: The client is to be treated with respect regardless of any evaluation of his/ her behavior/ action

## Dimensions of counseling

There are eight dimensions that must be kept in mind when counseling a client:

- **Empathy:** is the ability to perceive the client's feelings, and to demonstrate accurate perception of this to the client.
- **Warmth:** It involves accepting and caring about the client as a person, regardless of any evaluation of her or his behaviors or thoughts.
- **Respect:** is belief in the client's ability to make appropriate decisions and deal appropriately with his or her life situation, when given a safe and supportive environment in which to do so.
- **Congruence** (or genuineness) is being honest and authentic in our dealings with our clients
- **Concreteness:** The goals and objectives of counseling should be clearly spelt out.
- **Self- disclosure:** the client should be provided with an environment that encourages self- disclosure and exploration of feelings.
- **Confrontation:** the patient should be confronted if any inconsistencies are noted in his/ her behavior.
- **Immediacy:** The problems of the clients should be handled in the present as they are and with a sense of urgency.

## Counseling the older person

Elderly people are vulnerable and prone to a variety of problems that are more often than not multidimensional. The aim of counseling is to improve the wellbeing and consequently the quality of life of these people. Apart from helping them to deal with the problems of old age per se, counseling can also provide the opportunity for enrichment, personal growth and satisfaction. This is because old age is a time when despite some biological and intellectual decline, development continues till the very end of life.

Some of the problems for which elderly people may seek the help of a counselor are:

- Fear of diminished competency at work
- Anxiety about retirement
- Issues relating to the marital relationship after the children have left home
- Awareness of ageing
- Physical illness and dependence on others
- Fear of a decrease in sexual potency
- An increasing realization of the finality of one's own death
- Loneliness / fruitful utilization of time
- Bereavement
- Fear of increasing disability and dependence

- Vocational/ occupational counseling
- Perceived loss of control

In addition, there are certain features of old age that any counselor should be sensitive about, in order to make this helping relationship more effective and successful. These are:

- The problems of old age usually develop gradually over time and often overlap in various areas of life.
- Old people may be reluctant to admit their problems and prefer to deal with them on their own (denial).
- They may be reluctant in interacting with a counselor since many people equate counseling with mental illness.
- They may be anxious about developing dependence on the counselor.
- They may fear change or not be ready to accept it.
- They may not want to open up and confide in a younger person about their personal problems.

## ***Module 19: Health Education for the Older People***

### **Learning objectives**

1. Develop strategies for health education of the older patients

### **Contents**

Health education: definition and concept

Contents of health education for the older person

**Health education** is defined as a process that informs, motivates and helps people to adopt and maintain healthy practices and lifestyles. It advocates environmental changes as needed to facilitate this goal and conducts professional training and research.

It is a process aimed at induction of health behavior and learning of customs, prejudices and practices which are detrimental to health. Health education requires active involvement of people in achieving the goal of health.

The components of health education are:

- **Informing people:** Reasonable understanding of birth, ageing, death and disease is now available as a result of research and discoveries in medical field. Knowledge about prevention of disease and promotion of health is also available from these discoveries. Informing people about the knowledge of health promotion and health protection is the first goal of health education. Exposure to knowledge will create awareness of health problems, need for healthy life style and will also put responsibility on people for their own health.
- **Motivating people:** Creation of awareness is not sufficient to expect people to adopt healthy lifestyle. People need to be motivated to change their habits and ways of life. These changes being behavioral changes, health education is similar to influencing a “consumer” to make his choice and decision but towards healthy actions and ways of life.
- **Guiding them into action:** People need help to adopt and practice healthy life style, which may be totally new to them. To achieve this there is a need for creation of a setting from where health education can be disseminated. In other words, there has to be an infrastructure for health education and related services and people need to be encouraged to utilize these services.
- Various **communication channels** like radio, TV, films, news papers should be utilized to create awareness regarding adoption of a healthy life style.

## Contents of health education for the older person

- **Human biology:** The older subject and their family should be informed about the biological changes in structure and function of the body in relation to ageing. They must also be informed about the difference between age-related changes and pathological states.
- **Family health:** Information regarding different patterns of human growth and development and needs of different family members to be included in the message to provide a correct perspective of human ageing.
- **Nutrition:** Health educator must guide older people and their family to understand the principles of balanced diet, nutritive value of food, value for money spent on food, storage, preparation, cooling etc. In addition, older people need to know about the food that improves their bowel movement, protects against disease and improves health.
- **Hygiene:** Education on hygiene should be about personal hygiene and environmental hygiene.
  - Education on personal hygiene should include: information on bathing, clothing, toilet, washing of hands before eating, care of feet, nails and teeth; prevention of indiscriminate spitting, coughing and sneezing; and inculcation of clean habits.
  - Education on environmental hygiene should include information on maintain clean home, need for fresh air and light, ventilation, hygienic storage, disposal of waste, sanitation, disposal of human excreta, food sanitation, vector control etc. Though creation of hygienic environment requires mobilization of resources in the community, the role of the individual in maintaining the environmental hygiene can not be neglected.
- **Control of communicable and non-communicable disease:** Information on common communicable and non-communicable diseases specific to old age as well as all age groups needs to be included in health education because older people are often consulted for their wisdom in all matters of health and diseases.
- **Mental health:** Cognitive and affective disorders are extremely common in older subjects. In addition, there has been a rise in mental illness in the general population also. Older people need to be educated regarding adjustment to their changing role in family and community as a result of old age and retirement. In addition, education regarding dementia, depression, anxiety and bereavement needs to be provided.

- **Prevention of accidents:** Modern day life has very high risk of accidents and disasters. Older people should be made aware that they are especially vulnerable to accidents and their complications because of their physiological decline and higher risk of fractures and life threatening injury. Simple measures and tips followed in daily activities can drastically reduce the risk of accidents.
- **Use of health services:** Older people need to be educated to use the health services available in the community to the maximum extent. They must also be encouraged to participate in national health programs designed to promote health in old age and prevent diseases. There are various barriers to use of health services include: acceptance of disease and disability in old age as natural, fatalistic attitude, poverty and ignorance and self neglect. The nurse needs to identify them and intervene to remove these barriers.

Nursing care for the elderly requires a high degree of sensitivity, awareness and acceptance since it can be said it is a critical service integrating and bridging clinical practice with societal care. The provision of such care and service for the elderly needs to be done with awareness and commitment and can be most sustainable if well informed, self aware and adequately prepared nursing practice makes a coordinated effort with the individual, family and society.



**Drug treatment**

- 1.
- 2.
- 3.
- 4.

Present problems

- 1.
- 2.
- 3.
- 4.
- 5.

Past medical history (mention diagnosis / symptoms and year)

- 1.
- 2.
- 3.
- 4.

**Physical examination**

Weight	Height	BMI
BP- Lying	Standing	
Pulse	Peripheral pulses	
Pallor	Edema	
Oral cavity		
No. of teeth	Loose teeth	Caries
Cardiovascular system		
Respiratory system		
Abdomen		
Hernia	Hydrocele	
Central nervous system:		
Locomotor system		
Sign of abuse/ injury		

## Functional assessment

### Vision

Hold the vision card at 14” Distance from the subject while Wearing corrective lenses (whenever applicable)	Able / unable to read right eye	Able / unable to read left
If unable to read, check for	cataract corneal opacity	

### Hearing

Whisper into each ear separately for behind the head to avoid lip reading	Able / unable to hear right ear able / unable	Able / unable to hear left ear able / unable
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### Arm

Ask the patient to touch the back of the head	right arm	left arm
Ask the patient pick up the pen from the table.		

### Leg

Ask the patient to rise from the chair, Walk 10 feet, return and sit down.		Able / Unable to perform
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### Depression

Ask the patient: Do you often feel sad and depressed?	Yes / no
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### Urinary incontinence

Ask the patient Do you ever lose your urine and get wet?	Yes /no
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## Activities of daily living

### Bowels

- 0- incontinent (or needs enema)
- 1- occasional accident (1 /WK)
- 2- continent

### Bladder

- 0- incontinent
- 1- occasional / accidental
- 2- continent

### Grooming (making neat and clean appearance)

- 0- needs help and personal care
- 1- independent

### Toilet use

- 0 – dependent
- 1- needs some help
- 2 – independent

### Feeding

- 0- unable
- 1- needs help
- 2- independent

### Dressing

- 0- dependent
- 1- needs help
- 2- independent

### Transfer (bed to chair and back)

- 0 – unable
- 1- major help (1 -2 people )
- 2- minor help (verbal / physical)
- 3- independent

### Mobility

- 0- immobile
- 1- wheel chair dependent
- 2- walks with help from one person
- 3- independent (but may use aid)

### Stairs

- 0- unable
- 1- needs help
- 2- independent

### Bathing

- 0- dependent
- 1- independent

Total

(0 -20)

## Incremental activities of daily living

Are you able to:

Dress up yourself

Get out of bed yourself?

Eat without help?

Do you do your own shopping?

**Home environment -**

Safe

Unsafe

Do you have trouble with stairs inside or outside of your home?

Do you have hazardous bathroom, floor?

Is the lighting proper?

## **Social support**

Who would be able to help you in case of illness or emergency?

Will you consider moving into an old age home / senior citizen home?

## **Investigations**

Hemoglobin

Total leucocyte count

Differential leucocyte count

ESR

Urine: Albumin

Fasting blood sugar

Sugar

Microscopic examination

Post-prandial blood sugar

Blood urea

Serum creatinine

Serum calcium

Serum phosphates

Serum uric acid

Serum protein / albumin / globulin

Serum cholesterol

Serum triglyceride

Electro cardiogram

X-ray chest

Pap smear/ mammography (if female)

### **Complete diagnosis**

- 1.
- 2.
- 3.
- 4.

### **Management plan**

- 1 Therapeutic
2. Physiotherapy and rehabilitation
3. Referral to surgeon / ophthalmologist / E.N.T specialist / dental surgeon
4. Referral to psychiatrist
5. Referral to nutritionist
6. Other professionals

*Annexure 2: Mini mental state examination*

1. Name three objects: pencil, watch, book  
and ask the patient to repeat now and  
remember it (“I will ask after one minute”) 3
  
2. Ask the patient “What is the” 5
  - i. year
  - ii. season
  - iii. date
  - iv. day
  - v. month
  
3. Ask the patient 5  
“Where do you live?”
  - i. state
  - ii. district
  - iii. town / village / locality
  - iv. what is the name of this hospital?
  - v. which floor the patient is sitting?
  
4. Ask the name of three objects mentioned in question no. 1 3
  
5. Ask the patient to deduct 7 from 100 five times consecutively. 5
  
6. Show patient a pencil and watch, and ask for their names. 2
  
7. Ask the patient to repeat the following: “No ifs, ands, or buts.” 1  
(Use a small sentence in a language with which the patient is familiar and show to the patient).
  
8. Ask the patient to follow a three-stage command: 3  
(in a language with which the patient is familiar)  
  
“Take a paper in your right hand, fold it in half and put it on the floor”
  
9. Ask the patient to read and obey an command: 1  
(Write on a paper in a language with which the patient is familiar and show to the patient )
  
- “CLOSE YOUR EYES”*
  
10. Ask the patient to write a sentence. 1  
(Full marks if it has a noun and verb with a meaning
  
11. Copy a design 1

Total Score: / 30