Health Care for Older People

Holistic Approach

Mental Health Problems in Old Age

Sri Lankan Association of Geriatric Medicine

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The book is intended to strengthen the knowledge of the members of the multi-disciplinary team and care givers. It is may not be used for the diagnosis of the disease and treatment purposes.

Volume 4, Issue 2 December 2021
ISBN: 978-624-94177-6-2

Electronic version is available on *https://www.slagm.lk*

An attempt to develop and promote multidisciplinary mutual coordination and collaboration among the teams involved in care of older patients at various levels in the health and social services sector.

'Team work divides the task and multiplies the success'

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Editorial

The Sri Lankan Association of Geriatric Medicine is delighted to present its fifth issue of the series of bulletins 'Healthcare for older people – holistic approach; on 'Mental Health Problems in Old Age'.

Mental health is an integral part of good health in any age group. Due to biological changes in the brain, changes in psycho-social circumstances and co-morbid physical disorders and development of disabilities, older adults are vulnerable to a wide array of psychological problems and mental illness. Dementia constitutes the greatest burden on mental health of elders and has a huge impact on the individual, family and care givers, and the society as a whole. Although the prevalence of other mental disorders is not significantly high in older people compared to the young, the impact of these disorders on the quality of life, physical morbidity and mortality in enormous. Many more have psychological problems not amounting to diagnosis of a particular psychiatric illness yet carry the same morbidity and mortality.

Therefore, mental health promotion, and identification and treatment of psychological problems and psychiatric illness becomes vital in optimizing health of any older adult. This needs to happen at every level, and every health care provider working with older people need to have knowledge and develop skills and attitudes on mental health issues in age group.

This bulletin aims to provide the multi-disciplinary care members with basic knowledge on common psychological problems seen among older citizens, with practical management approaches at the first contact levels, and I hope that this will improve identification, management and appropriate referring of mental health issues in older people.

Dr. Shehan Silva

1. Overview of mental health disorders of the old age

Dr. Chathurie Suraweera

INTRODUCTION

The world's population is ageing rapidly. The proportion of older adults is expected to double from 2015 to 2050 (12% to 22%). Therefore, the absolute increase is 900 million to 2 billion people over the age of 60.

Population projections in Sri Lanka expect to peak to around 22.2 million by 2038 before beginning to contract. The population is growing older and will age more rapidly than most of the other developing economies. The proportion of the working-age population aged 15 to 64 years in the total population has started declining, and the absolute number of the working-age population is expected to drop by 2030.

EPIDEMIOLOGY

Mental health is important at any age. However, with the increase in physical frailty, comorbidities, changes in the brain, retirement, and exit events faced in life, older adults are more prone to develop mental health issues. It is estimated that approximately 15% - 25% of older adults aged over 60 years suffer from a mental health disorder, primarily depression, anxiety, or dementia. Some studies have observed that the prevalence of mental health disorders among people over the age of 65 (excluding dementia) is around 20%. The few studies conducted among the older adults aged 95 years observed that almost one-third of people without dementia met the criteria for a psychiatric disorder.

With the changing demographics, older adults with mental disorders are expected to double by 2030. Furthermore, 6.6% of all disabilities as measured by disability-adjusted life years among older adults are psychiatric and neurological disorders.

The most common mental and neurological disorders in this age group are dementia and depression, which affect approximately 5% and 7% of the world's older population, respectively. Most studies among older adults without dementia have been conducted on elderly depression.

While the prevalence figures range from 5% to 10% for overall depression rates, 1% - 5% have been estimated to be suffering from major depression. These rates are expected to be higher in the developing world. The prevalence of subthreshold depressive symptoms are reported to be higher and is associated with increased mortality and morbidity, such as stroke.

According to recent evidence, the prevalence of anxiety disorders such as generalized anxiety disorder (GAD), panic anxiety disorder (PAD), obsessive-compulsive disorders (OCD) and phobic anxiety disorders may be equal to or higher than depression among the older adults over the age of 65 years with figures ranging between 6% and 12%. The prevalence decreases to 10.5% in people aged 85 and 4% in those aged 95 years. The prevalence of GAD is estimated to be between 1% to 10%. The prevalence is 6% in older adults over the age of 85 and 2% in those aged 95. The prevalence of OCD above 65 years, 85 years and 95 years is 0.2% to 1.5%, 3.2% and 0.3% respectively. The prevalence of the commonest anxiety disorder among the elderly, phobic anxiety disorders, ranges from 2% to 12% among older adults over the age of 65 years.

Psychotic symptoms and disorders, such as schizophrenia, appear to be uncommon in older adults without dementia. Self-reported psychotic symptoms among the older adults without dementia are around 1.7% to 4.2%. When information on psychotic symptoms was obtained from several sources of information like self-reports, close informants, and patient records, the prevalence has been reported to be as high as 10% among the older adults over the age of 85 years and 8% in the group over the age of 95 years. The prevalence among the older adults without dementia aged 70 years was 1%.

Substance use problems affect almost 1%, and around a quarter of deaths from self-harm are among people aged 60 or above. The highest suicide rate among any age category is among the older adults aged 85 and older. Substance abuse problems among older people are often overlooked or misdiagnosed.

Higher prevalence rates of mental health disorders are reported among the older adults residing in residential homes and hospitals. The prevalence of significant cognitive impairment is around 33% in residential care homes, while the prevalence of any mental health disorder is as high as 50% in the hospital setting.

According to the Epidemiologic Catchment Area Study, which was conducted using DSM-III criteria, the prevalence of mental disorders across age groups varies significantly. The prevalence of severe cognitive impairment during the past month rises to approximately 6% by the age of 65 years. Although the prevalence of anxiety disorders decreases from 8% from age 18-24, the prevalence of anxiety disorders remains higher than severe cognitive impairment at the age of 65. The prevalence of substance use disorders and affective disorders decline as people age.

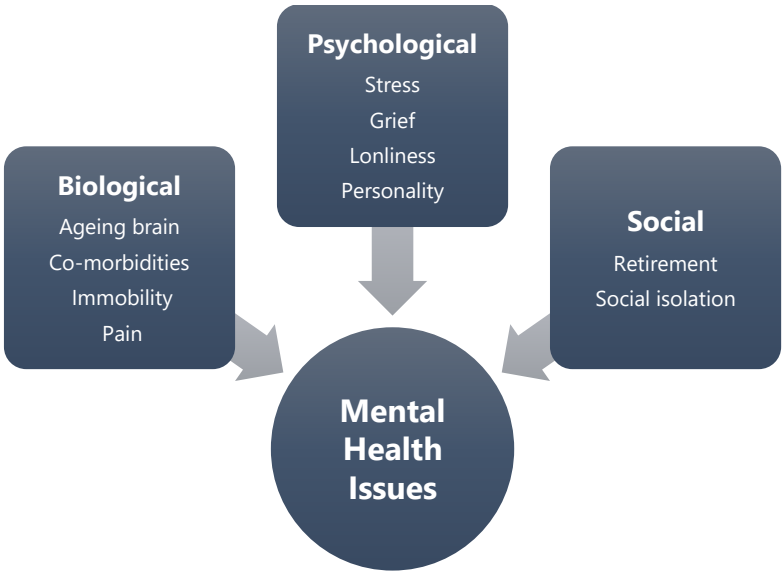
Studies of incidence, which is a better measure, is rare among older adults. The incidence of depression ranges from 2 to 140 per 1000 person-years. According to the Epidemiologic Catchment Area Program study, the incidence of phobic disorder in older adults aged 65 years and older was 27 per 1000 person-years for males and 55 for females. The incidence of OCD was 10 per 1000 person-years in females. 9% of people without dementia from age 70 to 90 years developed psychotic symptoms for the first time. The incidence for schizophrenia and delusional disorders were 0.03 and 0.16 per 1000 person-years, respectively.

Although the figures are high and predicted to rise, it is estimated that two-thirds of older adults with mental health problems do not have access to mental health services. Mental health problems are undetected by healthcare professionals, older people themselves and their carers due to lack of mental health literacy, and the stigma and the socio-cultural misconceptions surrounding these conditions make people reluctant to seek help. The co-existence of medical co-morbidities and physical signs and symptoms attributed to a physical illness rather than a mental illness and polypharmacy contribute to the diagnostic dilemmas.

BIOPSYCHOSOCIAL AETIOLOGY

Many factors associated with mental health disorders increase with age. These include loss of close relatives, social network, previous status in society, sensory functions, functional ability, and health. The positive aspects of old age are freedom of time, and less work stress and competition. Therefore, when the negative risk factors are controlled for, it is postulated that age is not a risk factor for depression.

The factors that contribute to the mental health issues and disorders of older adults can be explained using the bio-psycho-social model.



BIOLOGICAL FACTORS

Changes in the brain

The weight of the brain is reduced by about 5% by the age of 70 years. It is reduced by 5% by the age of 80 years and by another 10– 20% by 90 years. Ventricular enlargement, thickening of the meninges, changes in the grey and white matter and prominent reductions in the volume of the hippocampus, frontal cortex, and cerebellum are some of the notable changes. The reductions in synapses and loss of neurons to a

lesser degree seem to contribute to normal ageing, which is exaggerated in abnormal ageing. Accumulation of the pigment, lipofuscin, senile plaques, neuro-fibrillary tangles, and Lewy bodies are other changes observed in the brain. Apart from the changes mentioned above, acquired damage to DNA, epigenetic regulation, damage to mitochondria and changes in the signal pathways are thought to contribute to ageing at the microcellular level. Underactivity of serotonergic transmission, hypersecretion of cortisol, and low testosterone levels have also been implied as aetiological factors.

Changes in the other organ systems

Apart from the changes in the brain, factors like general frailty, reduced motility, and co-morbid medical illnesses also contribute to the mental health disease burden. Strokes and myocardial infarctions leading to depression are directly related to ageing and mental health disorders. Chronic pain due to rheumatoid arthritis and cancer not only contributes to depression but also anxiety. Polypharmacy contributes to the disease burden by acting as predisposing and precipitating factors for delirium and contributing to depression as medications such as beta-blockers are depressogenic.

PSYCHOLOGICAL FACTORS

The resilience and the life experience gained over the years by the older adults allow them to contribute immensely to the community and the country. However, the changes like role transitions and role reversals which occur with retirement and loss of functional abilities make the older adult more vulnerable to psychological issues. Grief due to loss events is one good example. They experience stressors like the ill-health of loved ones more than the younger generation. It is observed that the loss of a partner at old age after years of companionship can have detrimental effects than the loss of a partner in early life. Certain personality traits like obsessive-compulsive and paranoid traits tend to worsen with age, while others like emotionally unstable traits tend to improve. The increase in rigidity of ideas may predispose the older adults with obsessive-compulsive traits to interpersonal issues and depression.

SOCIAL FACTORS

One major contributory factor for the change in social circumstances is retirement. This impacts the income, role in the family and community, social interactions, and free time. Social isolation is a common issue faced by older adults, primarily in the developed world. In developed countries like the United Kingdom and the United States of America about one-third of older adults lived alone in 1993, compared with 7% in Chile and 3% in China.

ASSOCIATION WITH INDIVIDUAL MENTAL HEALTH DISORDERS

The most consistently reported associated factors for depression are female sex, adverse life events, physical health and disability, institutionalization, medications, lack of social network and support and organic elements. Past psychiatric history, family history of depression, low education, personality, smoking and alcohol have also been associated with depression to a certain degree.

Female sex, physical disorders, being single, low educational status, life events, disability, and personality is associated with anxiety disorders of the elderly. It is observed that the risk factors for depression to be more of biological origin than those for late-life anxiety disorders by some.

Factors related to psychosis among the older adults are female sex, schizoid and paranoid personality traits, being divorced, living alone, low educational level, poor social network and isolation, low social functioning, sensory impairments, especially deafness, vascular disease, and dependence in community care. Psychotic symptoms in older adults have also been linked to hypothyroidism, cerebral tumours, and cardiovascular and cerebrovascular disease. Medications like anticholinergics, antiparkinsonian drugs, steroids, and beta-blockers may lead to psychotic symptoms. and psychoactive substance intoxication and withdrawal.

Elder abuse is an emerging social factor contributing to long-lasting psychiatric morbidity, including depression and anxiety among older adults. The available evidence suggests that 1 in 6 older people experience elder abuse. Elder abuse is associated with an increased

mortality rate and other adverse outcomes like the residential placement of the victims.

OUTCOMES OF MENTAL HEALTH DISORDERS IN THE OLD AGE

The presence of mental health disorders has consistently been reported to have a poor outcome among older adults. The commonly reported consequences of depression are social deprivation, loneliness, poor quality of life, disability, increased use of health services, cognitive impairment, increased risk for physical disorders, chronic course of illnesses, suicide, and increased mortality.

The consequences of anxiety disorders are increased mortality rate, increased cardiovascular risk, and increased suicide risk. Social anxiety disorder is associated with lower psychosocial functioning and reduced quality of life. Disability in daily life, dependence on external care, cognitive dysfunction, increased risk for dementia, and increased mortality are recognized outcomes of psychotic symptoms of older adults.

Attempted and completed suicides have a stronger association with depression. The association observed with alcoholism and personality disorders seems to be less than in younger age. Psychotic and anxiety disorders are associated with an increased risk of suicide among older adults. One important finding is that lethal suicidal attempts are commoner among older adults.

PREVENTION

Preventions of mental health disorders of old age require multi-disciplinary and complex approaches. Disabilities, mobility and cognitive reserves should be considered when managing older adults while considering their strengths like resilience and wisdom.

Prompt diagnosis and initiation of psychotropics have shown efficacy in preventing recurrences of depressive disorders. Psychological therapies, particularly cognitive behaviour therapy and problem-solving therapy, has been shown to reduce the incidence of depressive and anxiety disorders. Pharmacological therapy for optimal physical co-

morbidities can also prevent mental health issues and adverse mental health outcomes.

Although psychosocial prevention has shown some promising results with available few studies, the evidence is inadequate to prove that psychosocial prevention can reduce the incidence of mental health disorders in older adults at risk.

Advanced technology assists in preventing mental health issues by improving mobility, transportation, or economic difficulties faced by older adults. Computerized programs benefit older adults by making their lives easier, such as scheduling appointments, assisting in transport, and allowing them to work at their own pace. Social networks and communication systems prevent loneliness by enhancing the strength of social interactions. Cognitive enhancing programs to keep the brain active is another modality of technology that helps prevent mental health issues. With increasing evidence, biomarkers may assist in targeted prevention of mental health disorders in those likely to develop them.

In general, leading a healthy lifestyle, exercise, healthy dietary habits, avoidance of psychoactive substances and maintaining social connectively will prevent mental health disorders in old age.

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2. Comprehensive assessment of older people with mental illness

Dr. Anuprabha Wickramasinghe

Old age is not free from mental illness. Conditions from younger days may carry on to older years. Furthermore, the ageing brain may give rise to new diseases. Numerous changes in circumstances can also lead to psychological issues such as difficulties in coming to terms with losses and adjustment. Society often take for granted the increase of life events in old age and expects the sufferers to cope in silence. To make it more complicated, older adults of the present are not as expressive or frank about their feelings as the younger members of the society. As a result, mental health conditions in this age group tend to go undiagnosed.

Patients show poor insight towards their cognitive deficits when it comes to declining memory. Families and care takers have a significant role in detecting cognitive decline and seeking help. Approximately a quarter of patients with dementia are currently not diagnosed worldwide. This leaves them without adequate support and treatment they deserve. In the Sri Lankan scenario patients often get detected of cognitive problems when they seek treatment for other ailments, or when family members seek help from primary or secondary care institutions or from specialists such as psychiatrist, physicians, or a neurologist directly for diagnosis.

Holistic assessment is essential in the older adults presenting with mental health problems. History, mental state examination, cognitive examination, physical examination and planning investigations usually happen in the first visit to the clinician. In mental illnesses, treatment can be initiated in the first day itself. A second visit should often be planned to interpret investigation and examination findings in cognitive deficits. Furthermore, it scrutinises cognitive test results after which a discussion about diagnosis is possible with the patient and the family, and plan treatment.

Assessment in subsequent follow up visits are mostly about reviewing symptom severity including risk assessment, response to treatment and inquiry about treatment side effects. However, in patients with dementia, follow up with cognitive assessments and assessments for development of behavioural and psychological symptoms of dementia are additionally carried out.

The clinician has an important role in making appropriate referrals to ensure other multidisciplinary assessments will take place. These include occupational therapy assessments of patients' baseline functional abilities, occupational therapy assessment of housing environment, mobility assessments, assessment for sensory deficits, driving assessments, social and financial assessments, and capacity assessments that may need to be carried out as need arises, especially if these components were not carried out in the beginning.

HISTORY

The history provided by the patient is central to the diagnosis of mental illness. Components are not different to that of an adult. However, a collateral history from a family member or any other person who knows the patient should be sought whenever possible (especially if the patient is experiencing memory problems). Some patients report forgetfulness, but others may not have insight into their illness.

When the main problem is declining memory, the history and collateral history should focus on the nature, magnitude, and the course of cognitive changes. It is also important to understand whether the cognitive decline has affected activities of daily living such as the ability to pay a bill or to use the telephone. Furthermore, the temporal course of symptoms such as speed of onset and pattern of progression are essential. Insidious onset and slow progression are characteristic of neurodegenerative dementias whereas rapid onset fluctuating and stepwise progression may indicate cerebrovascular disease.

Medical conditions that can affect cognition such as hypertension and diabetes, and conditions that affect the brain such as stroke, Parkinson's disease and head injury are noteworthy. Medications such as sedatives,

anxiolytics, opioid analgesics and drugs with anticholinergic properties like tricyclic antidepressants and bladder antimuscarinics can interfere with cognitive functions.

Family history might give clues to young onset dementia running in the family indicating rare inherited genetic risk. Functional illnesses may also be running in the families.

MENTAL STATE EXAMINATION

Mental state examination can provide important clues to diagnosis both in functional and organic illnesses in old age. In suspected cognitive impairment, the interview with the patient should mainly target at completing a mental state examination as patients may not be able to give a history.

COGNITIVE EXAMINATION

Cognitive examination of the patient also helps to identify the presence, severity and nature of cognitive impairment. These include memory, orientation, attention and concentration, calculation, visuospatial skills, language and executive functions. It is important to be aware that a patient's level of education, sensory impairment, sleep deprivation and cultural background may influence over performance at cognitive tests. Montreal Cognitive Assessment (MoCA) and Mini Mental State Examination (MMSE) are commonly used screening tools for dementia. Several tools are in use to quantify cognitive functions which is discussed later under psychometric assessment.

PHYSICAL EXAMINATION

Physical examination is an important component of assessment which is often overlooked in psychiatry. General examination and systemic examination may indicate physical illness or stigmata of substance use disorders. Neurological examination can indicate focal neurological signs and features like Parkinsonism, disinhibition and neurocognitive problems like aphasia, apraxia and agnosia. Evidence of systemic

vascular disease and other features that might indicate rare causes of dementia need to be examined.

ROUTINE INVESTIGATIONS

Routine investigations conducted in patients with cognitive impairment include a full blood count, liver and renal function tests, C reactive proteins, thyrotrophin (TSH) level, B12 level and folate levels (if available), fasting lipids and fasting glucose, urinalysis and culture, and ECG. Neuroimaging with MRI or CT brain is important to facilitate diagnosis and to identify potentially treatable causes of dementia like treatable tumours and normal pressure hydrocephalus which may be shunted if detected early enough.

SPECIAL INVESTIGATIONS

There are less commonly used tests that are often used in research or in special circumstances. In Alzheimer's dementia, FDG PET scan show temporal-parietal hypometabolism while cerebrospinal fluid (CSF) show low amyloid and high tau levels. Amyloid PET scans are used in all stages of Alzheimer's dementia. In individuals with family history of early onset Alzheimer's dementia, genetic testing for amyloid precursor protein (APP) gene on chromosome 21, presenilin 1 gene (PSEN1) on chromosome 14 and presenilin 2 gene (PSEN2) on chromosome 1 is helpful for accurately predicting the future risk of developing Alzheimer's disease.

Lewy body dementia (LBD) can be diagnosed with characteristic low striatal dopamine transporter uptake on SPECT/PET scan (DaT scan) with evidence of preservation of medial temporal lobe in CT or MRI scans.

Evidence of reduced blood flow on SPECT scans in different regions of the brain may also indicate the type of dementia based on the lobes mostly affected.

Fronto-temporal dementia (FTD) shows focal brain atrophy affecting frontal and/or anterior temporal lobes in the behavioural variant, middle, inferior and anterior temporal lobe atrophy in Semantic variant

and left posterior frontal insular atrophy in non-fluent language variant. Frontotemporal hypometabolism in PET scan, or reduced blood flow in the same region in SPECT scans may also be helpful in the diagnosis of FTD. Genetic mutations in genes encoding TDP-43, MAPT, GRN or FUS protein may also be tested.

Elevated protein 14-3-3 for Creutzfeldt Jakob disease (CJD), positive cultures in infection, oligoclonal bands in demyelination, serology for HIV and syphilis tests can be done. Improved gait after high volume CSF removal is a helpful diagnostic test for normal pressure hydrocephalus (NPH).

PSYCHOMETRIC ASSESSMENT IN OLDER ADULTS

Psychometric assessment is an important addition to the routine assessment, which help quantify behavioural, cognitive or emotional functioning of an older patient. There are several assessment scales that are used for objective measurement of function for screening, base line evaluations, for monitoring of change over time and to evaluate the efficacy of treatment.

There are a number of difficulties encountered in developing such measurements for the older population. Characterising normality of the psychometric tests for older age groups is difficult due to several reasons. Coexisting subclinical sensory impairment, physical illness, unrecognised brain pathologies, increased prevalence of sleep problems and increased use of medication especially anticholinergics can interfere with cognitive test results. The effects of premorbid IQ on the cognitive function in old age is often disregarded which can lead to false inferences. Literacy level and education markedly vary between older individuals. Their living environments and level of stimulation can also have an influence on cognitive test results i.e., institutionalisation can lead to immediate drop of several points in a MMSE. Norms for different geriatric age groups and populations are known for most of the tests, but norms for Sri Lankan population are rarely available.

Cognitive tests which come in the form of single item of assessment such as MMSE, incorporate many specific cognitive function tests and

can be useful in diagnosis as well as in differentiating between different types of cognitive impairment. Tests assessing targeted and specific cognitive functions like abbreviated neuropsychological batteries however are equally useful though underutilised. Tests gathering information from an informant can be useful in diagnosis too. Using a combination of different types of cognitive tests may give a more reliable picture of the deficits although time consuming and requiring expertise. Cognitive testing is being replaced by newer techniques like structural and functional neuroimaging in modern practice.

Other tests are used to assess the impact of psychiatric conditions on quality of life, on care givers, and on functioning, disability and participation e.g., Neuropsychiatric inventory assesses disability and handicap.

Computerized cognitive assessment has additional advantage of accurate recording of reaction time, and speed. Options like touch screen makes tests more interesting.

Further to diagnosis and assessing severity, quantification of problems enables more effective communication between health care professionals, facilitate audit, research, screening and health planning.

A few examples for scales used for assessment of cognition are discussed below.

Abbreviated mental test (AMT) is the briefest of all cognitive tests that can quantify cognitive impairment by bed side. It is a 10-item scale assessing orientation, memory and attention, requiring 5 minutes administration time. A score of 6 or less is abnormal in older people, and more than 6 rules out dementia. If positive will direct for more tests. AMT is however insensitive to change and culture specific.

The MMSE has become the gold standard screening tool for detecting cognitive impairment in the older adults, although it may not detect mild cognitive impairment or early dementia. It has 5-10 minutes administering time and scores of 24 or below out of 30 is regarded as abnormal. People with higher intelligence and higher educational backgrounds may be suffering from cognitive impairment even when

they score 24 or above. People from lower social classes, and with lower levels of education are more likely to have lower scores even in the absence of cognitive impairment. Mainly measures memory and attention, with minimal testing of language and visuospatial tasks, and no testing of executive performance. First language, age, sensory impairment is also known to interfere with scores.

Addenbrooke Cognitive Examination (ACE III) was developed as an attempt to overcome deficiencies in MMSE. It measures a variety of cognitive areas on a 100-point scale, incorporating MMSE, executive, visuo-spatial and complex language tests. Cut of point 88 has a high sensitivity but low specificity, cut of 82 provides very high specificity at the expense of low sensitivity. ACE III is designed to be sensitive to early stages of Fronto-temporal dementia, Alzheimer's and Parkinson's plus dementias.

MOCA is a 30-point cognitive screening tool of orientation, memory, language, attention and executive function. Further assessment is recommended when score is below 24/30. MOCA has a good sensitivity for MCI, Alzheimer's disease and neurodegenerative diseases.

The Clifton assessment procedure for the elderly (CAPE) measures cognition and behaviour competence. Two interrelated scales which can be used alone or in combinations, the cognitive assessment scale and the behaviour rating scale (measuring behavioural problems in dementia, mobility, continence, ADL and confused behaviour). Administering takes 15-25 minutes.

CLOCK drawing test is a screening test for cognitive impairment and dementia and is a useful adjunct to MMSE as it assesses many aspects such as memory, planning, comprehension, motor programming, executive control, global attention, visual memory and construction, visuo-spatial representation, spatial dysfunction and neglect, and frontal and temporo-parietal functioning. It has high sensitivity and specificity and is applicable across cultures and languages. A normal clock drawing test excludes dementia to a reasonable accuracy. Administering time is two minutes.

Tests assessing anxiety and depression includes Hospital Anxiety and Depression Scale, Hamilton Depression Rating Scale and Geriatric Depression Scale (GDS). GDS is a self-reported tool with yes or no answers which takes about 5-10 minutes to administer. Scores above 10 are suggestive of depression in the 30 item GDS. This scale is not valid in patients with cognitive impairment. Cornell Scale for depression in dementia (CSDD), in which the rating is based on both informant and patient interviews is more suitable to test depression in the presence of cognitive impairment.

There are several scales available for the assessment of other aspects of illness such as mobility, falls, nutrition, and impact on physical health.

Sometimes highly educated, highly functional individuals with compelling history of cognitive decline with normal cognitive tests can still have dementia. There may also be situations when presentation is atypical. When initial tests do not give a clear diagnosis, patients may need detailed neuropsychological testing to assess a broader range of cognitive abilities in details. Such tests are often carried out by trained neuropsychologists or other professionals specialised in cognitive examination. Sometimes, close longitudinal follow up with repeated neuropsychological testing is needed especially in cases where imaging and clinical examination have not been helpful.

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3. Neuroimaging in Geriatric Psychiatry

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Neuroimaging has evolved significantly with a multitude of techniques and technologies, facilitating our understanding of structural and functional correlates of normal aging and cognitive disorders, identified in day to day clinical practice in recent years. Some modalities are used mainly in ruling out treatable or modifiable illnesses that present with behavioural and/or cognitive symptoms in old age. Hence, it is a good practice to use neuroimaging tools wisely with the available clinical data (e.g., history, examination, laboratory studies) to more focally define, explain, and ultimately, manage clinical syndromes.

NEUROIMAGING TOOLS/ TECHNIQUES

Neuroimaging protocols can generally be divided into structural, functional and physiological studies. Routinely performed modalities are computed tomography (CT) and conventional magnetic resonance imaging (MRI). These are structural studies that not only highlight the neurodegenerative aspects but also help exclude other comorbidities that may exacerbate symptoms. Magnetic resonance spectroscopy (MRS) and other functional/physiological modalities and molecular studies (PET, SPECT and DaT-Scan) are newer agents used in diagnostic process.

Computed Tomography

Because of its wide availability and rapid image acquisition, CT is now accepted as the initial screening tool or work horse for neuroimaging. It is also widely accessible, fast, effective, and comparatively inexpensive.

CT uses the differential attenuation of x-ray beams passing through tissues to produce an image. The x-ray tube and detectors rotate continuously about the patient while the scan table advances the patient through the gantry. Various imaging algorithms generate CT images using the data which have good contrast resolution and depicts bone, soft tissues, fluid (CSF) and blood. Contrast of soft tissues are

relatively poor and can be enhanced with the use of iodinated contrast material.

The resulting volumetric/spiral CT images can be viewed in all orthogonal planes with multiplanar reconstructions. Number of post processing techniques are available to enhance diagnostic accuracy.

The use of iodinated contrast may result in local and systemic complications preventing its use in susceptible individuals. Further, iodinated contrast is mainly excreted from the kidneys hindering its use in renal insufficiency.

Artefacts resulting from patient motion and beam hardening due to bone and metal reduces the diagnostic value of the images.

Figure 3.1 - A CT of a 92-year-old patient presenting with confusion. There is a low density crescent shaped subdural collection on the right side suggesting subacute subdural haemorrhage. High density areas are seen posteriorly suggesting active bleeding giving the final diagnosis of acute on chronic subdural haemorrhage.

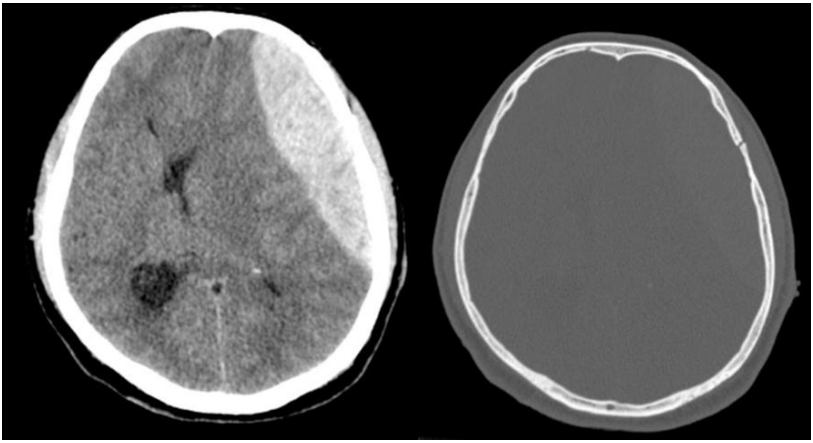

Figure 3.2 - CT of a 52-year-old patient following a road traffic accident. There is a large dense biconvex (lentiform shape collection in the left side suggesting an acute extradural haemorrhage. Bone window shows an overlying skull fracture.

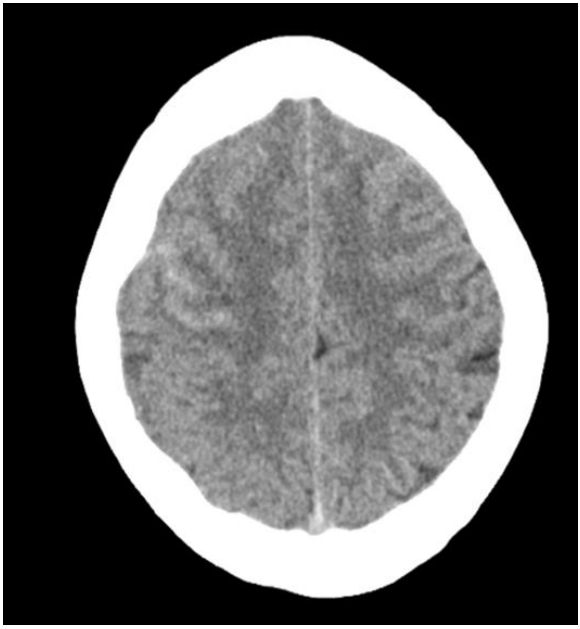

Figure 3.3 - A CT of a 50-year-old patient presenting with a severe headache. A linear dense opacity overlying the right frontal sulci suggesting acute sub arachnoid haemorrhage is seen.

Figure 3.4 - A NCCT image demonstrating a large intraventricular haemorrhage.

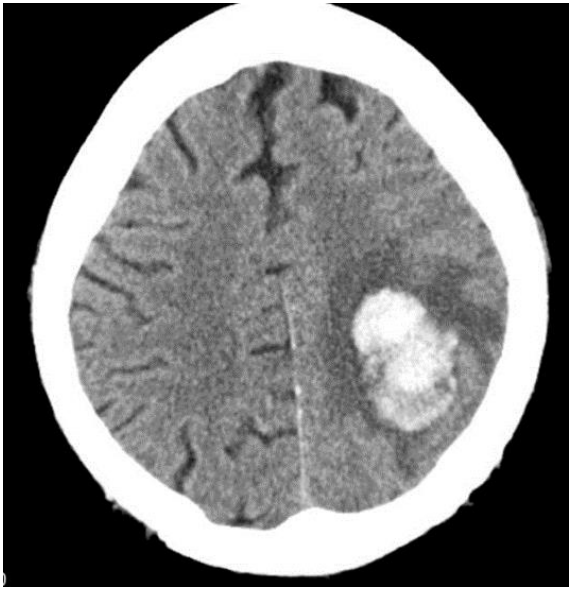

Figure 3.5 - A NCCT image demonstrating a large left intracerebral haemorrhage. There is surrounding white matter oedema and low-density rim is seen at the periphery suggesting a retraction clot.

Figure 3.6 - A disadvantage of CT. The image is grossly degraded by a metal artefact.

Magnetic Resonance Imaging

Clinical MRI relies on strong magnetic fields, hydrogen nuclei, radiofrequency pulses and radiofrequency coils to produce the images. To arrive at a diagnosis, it employs an array of sequences that are acquired by diverse means, used for different purposes (T1, T2, FLAIR, SWI, T2*). Sometimes these are designated by different acronyms by the manufacturer.

Most current MRI scanners have a magnetic field strength of 1.5 Tesla (1.5 T), but units employing higher magnetic field strengths of 3 T are also increasing in use. Both the 1.5 T and newer magnets offer an unparalleled look at anatomic structures, with relative safety and freedom from the concerns about radiation dose that are inherent in CT.

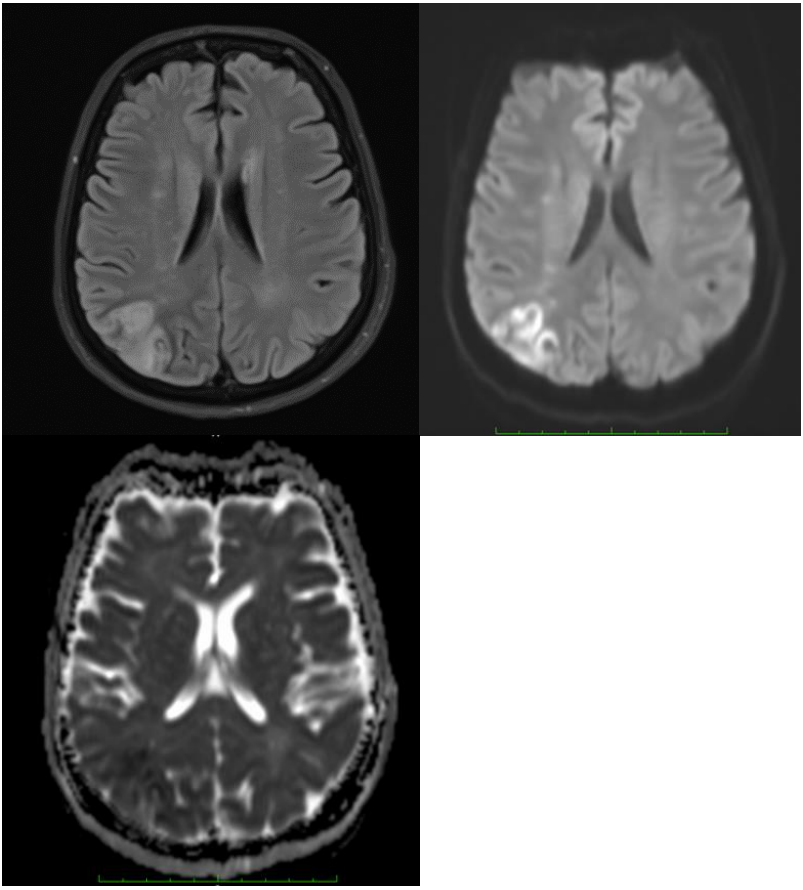

Figure 3.7 - FLAIR, DWI and ADC images of the MRI brain demonstrate an acute infarct with diffusion restriction involving the right posterior parietal lobe.

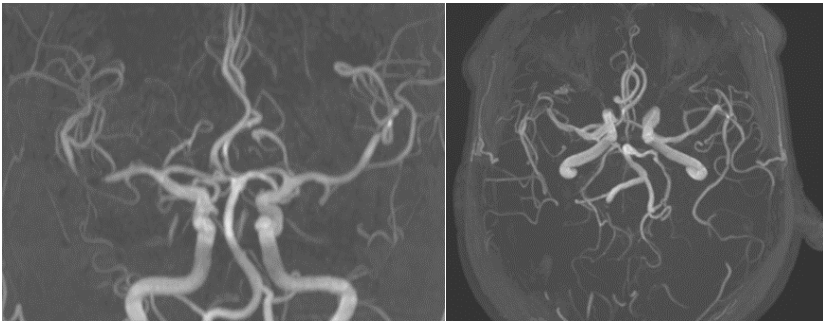

Figure 3.8 - MRA images of the (MIP) previous stroke patient demonstrates an abrupt segment of narrowing of the M2 segment of the right middle cerebral artery and reduced peripheral arteries in comparison to the left.

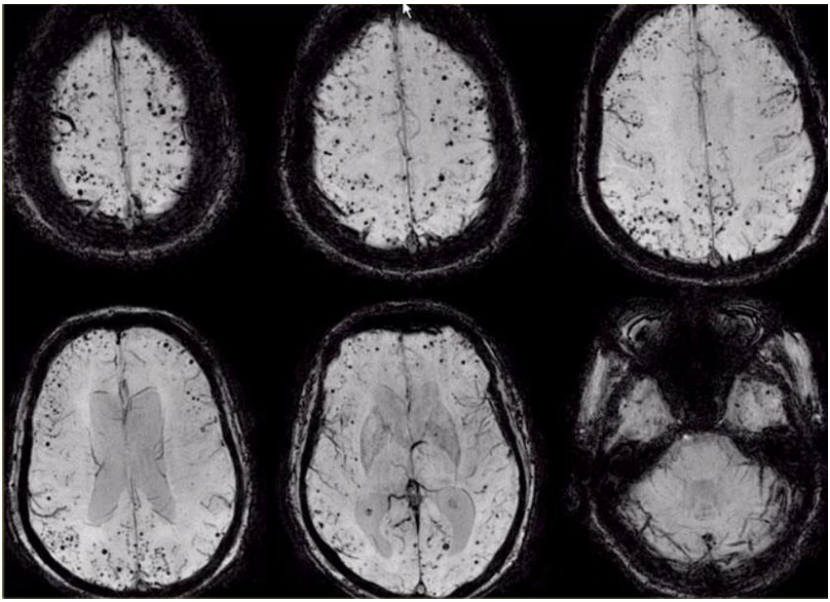

Figure 3.9 - An 80-year-old male with progressive cognitive decline. MRI study SWI images demonstrate multiple foci of blooming in the peripheral brain suggesting amyloid angiopathy.

MR Spectroscopy (MRS)

MRS uses magnetic resonance imaging techniques to measure metabolic activity in the region of interest. It has a lower resolution than structural magnetic resonance imaging, but it allows monitoring aspects of the intermediate metabolism that are not obtained by the other methods.

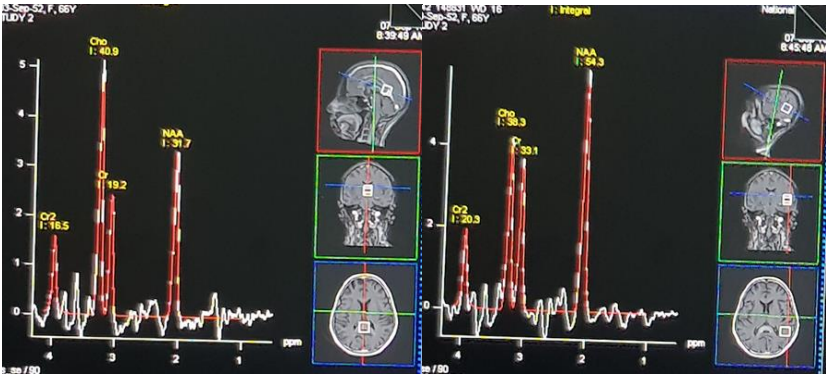

Figure 3.10 - MR spectroscopy of a patient with posterior corpus callosum lesion. Elevated choline (Cho) and relative reduction of N- acetyl-aspartate (NAA) is demonstrated. Controlled normal MRS tracer out-side the lesion is demonstrated on the right side. In an acute ischaemic event, NAA levels decrease while lipid and lactate levels elevate. In brain tumours there is decreased NAA and increased choline. If the tumour is aggressive, there may be elevation of lipid and lactate. In an abscess there is increased acetate and succinate.

Diffusion Weighted Imaging/ Diffusion Tensor Imaging (DWI/DTI)

DWI displays the molecular motion (diffusion) of water molecules using diffusion gradient sequences. MR signal intensity on DWI depends in part on the b value. When the b value is 0 s/mm2, there is no diffusion weighting so the image displays only the effects of T2 weighting. When the b is raised to 1000 s/mm2, diffusion weighting increases and signal from CSF (which has unrestricted diffusion) decreases.

Even at high b values, the T2 weighting does not disappear entirely, so the T2 signal may still appear within the image (T2 shine-through),

making it difficult to determine whether the bright signal seen on DWI represents true restricted diffusion or T2 prolongation.

This difficulty is overcome by calculating apparent diffusion coefficient (ADC) values of each voxel using DWI images (b = 0 and b = 100) and generating an ADC map which represents pure diffusion.

Diffusion Tensor Imaging (DTI) is an interesting application of DWI, which assesses water molecule diffusion in at least six different directions. Resultant data can be used to deduce axonal fibre orientation, map and thereby create 3D images of white matter tracts in the brain.

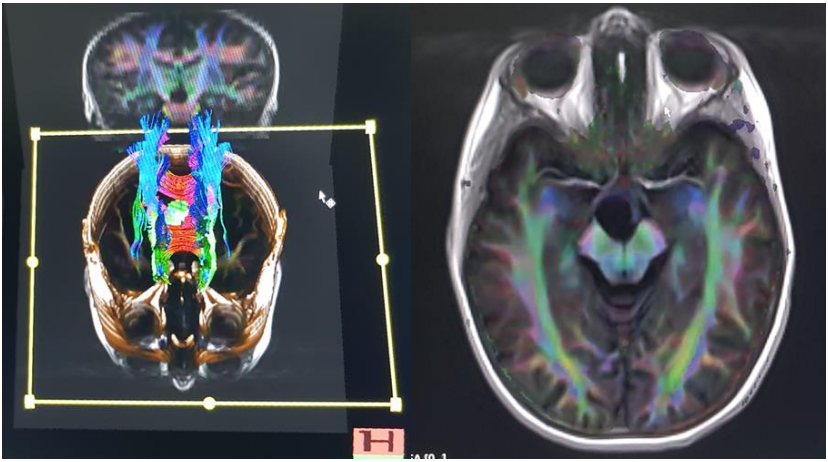

Figure 3.11 - Image on the left is a DTI image demonstrating white matter tracts in the brain. Image on the right is a fused image of DTI with axial T1 image demonstrating colour coded white matter tracts. A cystic mass at the right interpeduncular cistern indents and distorts the right optic tract and right cerebral peduncle.

Perfusion Weighted Imaging

These include arterial spin labelling (ASL), dynamic contrast enhanced (DCE), dynamic susceptibility weighted contrast enhanced (DSC). They provide a quantitative measurement of cerebral hemodynamic variables, such as cerebral blood flow (CBF), cerebral blood volume

(CBV), and capillary permeability. Unlike DCE or DSC, ASL does not require administration of contrast.

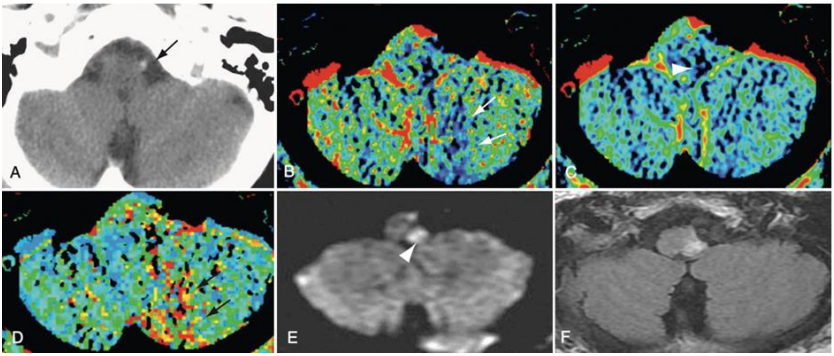

Figure 3.12 - A 48-year-old man presented with acute onset clinically suspected lateral medullary syndrome. ***A,*** *Non- contrast CT demonstrates hyperdensity within the left vertebral artery suggesting a thrombus (arrow) with no change in the brainstem. Dynamic contrast enhanced perfusion images* ***(B to D)****, demonstrate reduced Cerebral blood flow (CBF), reduced cerebral blood volume (CBV), and increased mean transit time (MTT) respectively confirming an inferior cerebellar peduncle infarct. Patient received tPA. DWI* ***(E)*** *and FLAIR imaging* ***(F)*** *24 hours later confirmed inferior cerebellar peduncle infarct.*

Compared with CT, MRI produces images with better soft tissue resolution facilitating identification of anatomical structures and certain pathologies. Gadolinium (Gd) containing contrast media are used to further improve diagnostic accuracy in specific situations. However, MRI examinations require patients to stay still within the scanner. Claustrophobic patients and patients with certain neurological disorders who cannot stay without sudden movements may require general anaesthesia before imaging. Patients with cardiac defibrillators, pacemakers and implants must be assessed for MRI safety.

Patients with impaired renal functions should be notified as inadvertent administration of Gd containing contrast may result in nephrogenic systemic fibrosis. MRI scan is a simple non-invasive study and does not use ionising radiation making it an ideal examination for follow-up except for the above mentioned exceptions.

Single Photon Emission Computed Tomography Scan (SPECT) including DaTSCAN

SPECT is a nuclear imaging scan which uses an intravenously administered radioactive tracer. The tracer emits gamma rays of specific energy which allows it to see how blood flows to different parts of the brain through a gamma camera. Images can be post-processed and colour coded to aid the diagnosis. The radioisotopes typically used in SPECT to label tracers are iodine-123, technetium-99m, xenon-133, thallium-201, and fluorine-18. The DaT SCAN uses a radiotracer 123I-ioflupane. This binds to specific dopamine receptors in the brain and deficiency suggests an abnormality.

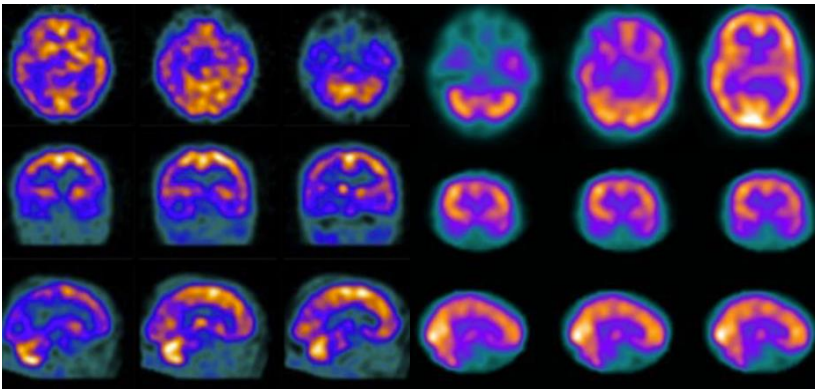

Figure 3.13 - Left - Tc99m SPECT study demonstrating bilateral temporal hypoperfusion. Right – Normal study for comparison.

Positron Emission Tomography (PET)

In PET scans intravenous administration of radioactive tracer/ radiopharmaceutical and imaging for the systemic distribution is carried out. The radioactive tracer most widely used is 18F–FDG (Fluorodeoxyglucose). Being closely analogous to glucose, this radiopharmaceutical is distributed mainly into metabolically active tissues and provides images according to its distribution.

The resulting images are usually combined with CT or MRI for anatomical localisation and attenuation correction. Images are then reviewed in orthogonal planes for an abnormality.

All nuclear medical studies are expensive and expose patients to ionising radiation. Hence, careful patient preparation and advice are important for better imaging outcomes. For SPECT scans the patients are usually required to stay still on the scanner for more than 20 minutes. Metallic jewellery and garments should not be worn for the study. Metallic prosthesis should be noted in the request.

For the PET scans patients need special preparation which includes 4-6 hours of fasting with blood glucose level of <150 mg/dL. It is also emphasized to avoid strenuous activity 24 hours prior to imaging and to avoid speech 20 minutes prior to imaging.

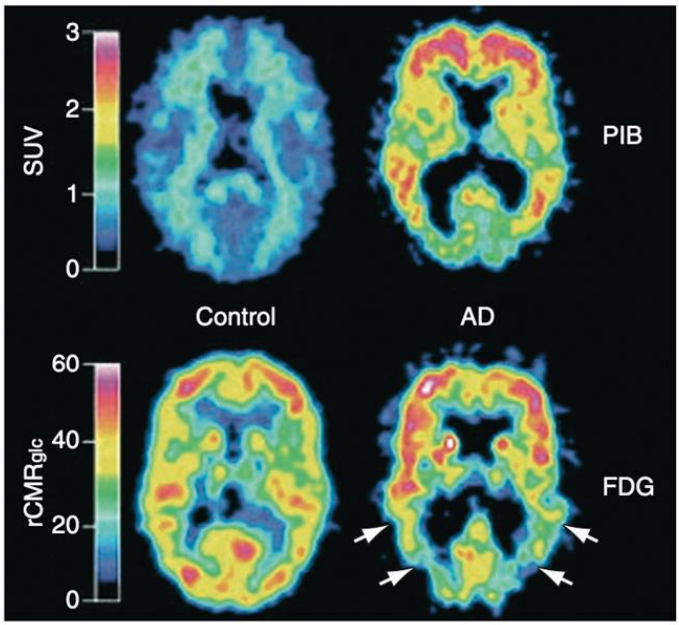

Figure 3.14 - FDG-PET image of a normal and an Alzheimer's patient demonstrates significantly reduced metabolism in the temporo-parietal cortex and normal metabolism in the frontal region.

AGEING BRAIN

The most relevant structural radiological findings identified from CT and/or MRI in cerebral ageing are, among others:

- Cerebral/hippocampal atrophy,
- Ventriculomegaly,
- Some patches of increased T2 signal in hemispheric white matter.
- Low signal of the extrapyramidal nuclei due to iron deposition.

These findings are identified in both normal and pathological ageing, although typically age-related changes are characterized by being less rapid and generally less severe than those of neurodegenerative diseases as described below.

NEURODEGENERATIVE DISORDERS

Alzheimer's Disease (AD)

AD is characterised radiologically by diffuse cerebral atrophy, ventricular dilatation (IIIrd and IVth) and profound atrophy of the medial temporal lobes and the hippocampus. With disease progression, symmetric atrophy extends to involve the posterior cingulate gyrus, praecuneus, and temporoparietal neocortex. There is relative sparing of the sensorimotor cortex, brain stem, and cerebellum. The volume of hippocampus and parahippocampal gyrus can be measured directly while the enlargement of the parahippocampal fissure can be indirectly measured. Various visual staging scoring systems are in use to determine the severity and extent. The medial temporal lobe atrophy (MTA) score correlates with disease progression. It is obtained at the level of the anterior pons through the hippocampus in a coronal MRI. The widths of the choroid fissure and temporal horn, and the height of hippocampal formation are used. The Koedam score or the posterior atrophy score assess the parietal lobe atrophy. It is useful in atypical or early onset AD when the MTA score is normal.

DWI/ DTI demonstrates white matter diffusivity alterations involving the frontal, temporal, and parietal association fibres excluding the corticospinal tracts in DWI/ DTI. The fornix, cingulum tract, inferior longitudinal fasciculus, uncinate fasciculus, superior longitudinal fasciculus, corpus callosum demonstrate reduced FA, which can be observed in early stages. These tracts constitute the main corticocortical association and limbic pathways connecting the temporoparietal

cortices and the frontal lobe, in concordance with the topographic progression of cortical degeneration, atrophy, and metabolic disruption in AD.

Several studies observed reduced activation of medial temporal lobe structures in AD patients while performing memory-encoding tasks due to neuronal loss in these areas in functional MRI.

A characteristic bilateral temporoparietal decrease in cerebral blood flow has been well documented in AD using nuclear medicine techniques (FDG- PET and SPECT).

Vascular Dementia (VD)

This is a cognitive impairment resulting from cerebrovascular disease and excludes the isolated disabling sequelae following a stroke. VD can be either due to large vessel disease or small vessel disease. It is important to diagnose and exclude vascular dementia as correct treatment can prevent further progression.

Intracranial haemorrhage is also a cause for vascular dementia. The haemorrhages typically affect the basal ganglia and thalamus as a result of hypertension or atherosclerosis.

In normotensive older adults, cerebral amyloid angiopathy (CAA) is often the cause of cerebral haemorrhage and in contrast to the hypertension and atherosclerosis, produce haemorrhages in peripheral cortico-subcortical region and cerebellar vermis.

Neuroimaging plays an active role in diagnosing vascular dementia, detecting new and old infarctions, lacunae and haemorrhages.

Fronto-temporal Lobar Dementia (FTLD)

FTLD are characterized by focal atrophy of frontal and temporal lobes. They have variable clinical manifestations collectively known as frontotemporal dementia (FTD) syndromes.

The two common forms are behavioural and language variants.

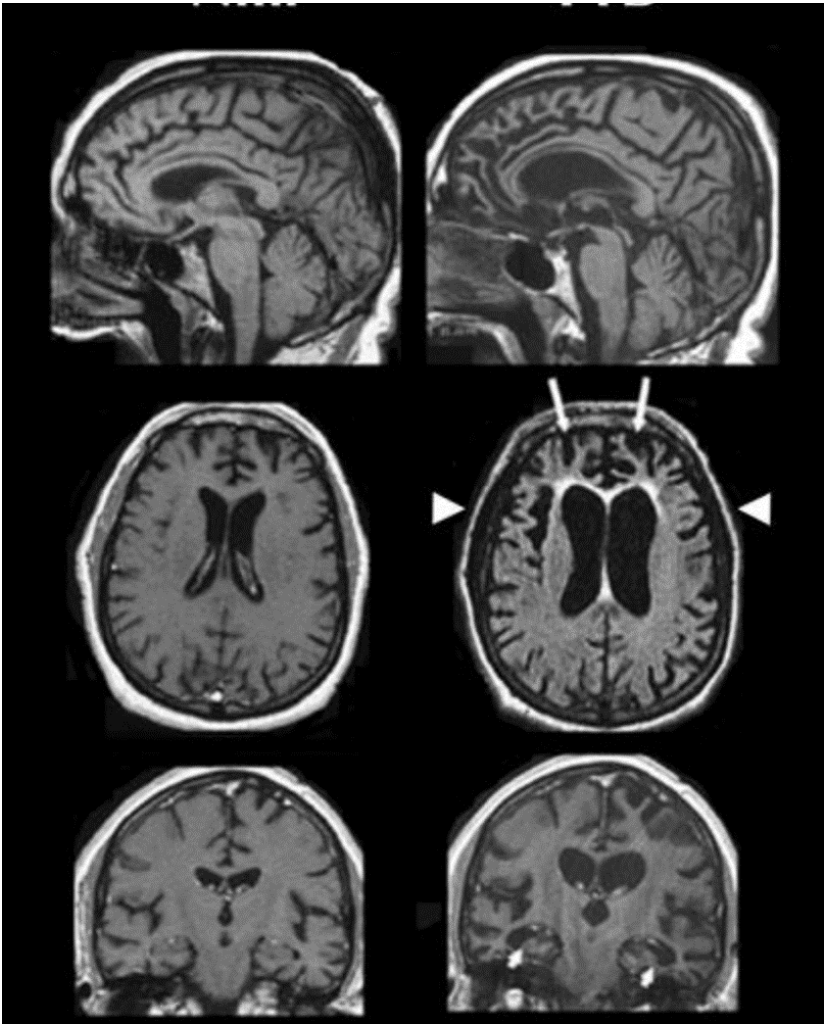

Figure 3.15 - MRI changes of frontotemporal lobe dementia. Note the severe atrophy of the frontal and temporal lobes.

Lewy Body Dementia

Structural neuroimaging is essentially normal but may show atrophy of the brain without an identifiable pattern, in some instances. The mesial temporal lobe and the hippocampi are unaffected and this feature helps to distinguish Lewy body disease from AD.

Nuclear medicine studies (SPECT and PET) demonstrate characteristic hypoperfusion of the occipital lobes with preserved metabolism of the posterior cingulate gyrus.

Normal Pressure Hydrocephalus (NPH)

Structural neuroimaging with CT and MRI includes characteristic ventriculomegaly and upward bowing of the corpus callosum. There is also crowding of the sulci at the vertex. The posterior part of the cingulate sulcus appears to be narrower than the anterior part and the bilateral sylvian fissures are widened. MRI CSF Flow studies demonstrate increased aqueduct CSF stroke volume and increased aqueduct peak velocity.

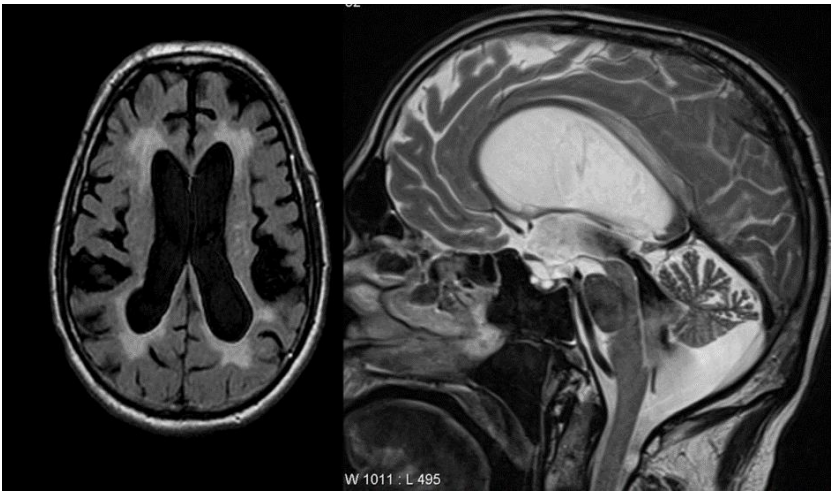

Figure 3.16 - MRI images of a patient with normal pressure hydrocephalus demonstrating characteristic ventriculomegaly and upward bowing of the corpus callosum. Also note the appearance of the cingulate sulcus and the increased aqueduct flow causing flow.

Parkinson's Disease

MRI is used to identify features of secondary parkinsonism, such as extensive small vessel/ ischemic change and atrophy. Most known feature of the disease is the loss of the normal swallow tail appearance of susceptibility weighted images in the substantia nigra on axial imaging. Apart from these changes, the signal intensity in substantia nigra depends on loss of neuromelanin and iron accumulation.

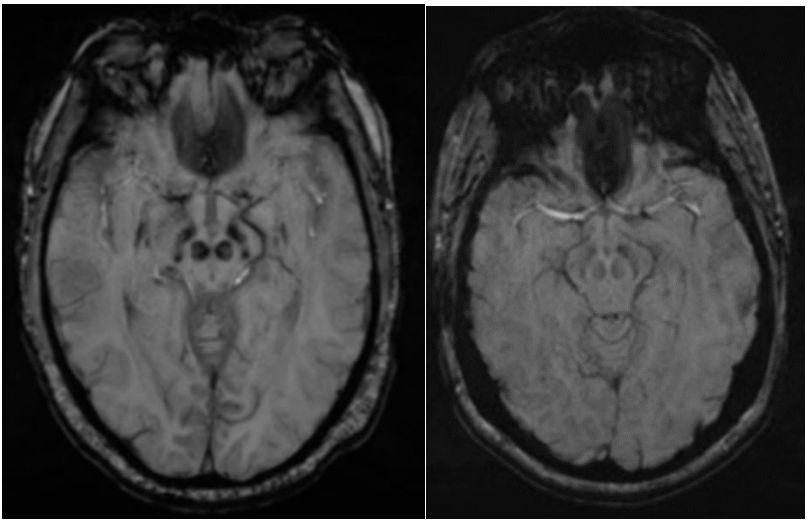

Figure 3.17 - SWI images – Left in a patient with Parkinson's disease demonstrating loss of swallow tail sign. Also, there is increased iron accumulation. Right shows the appearance of substantia nigra in a normal subject.

Nuclear medicine studies (SPECT and PET) can be used to diagnose Parkinson's disease. This shows characteristic loss of normal comma shaped appearance/ tracer uptake in the corpus striatum.

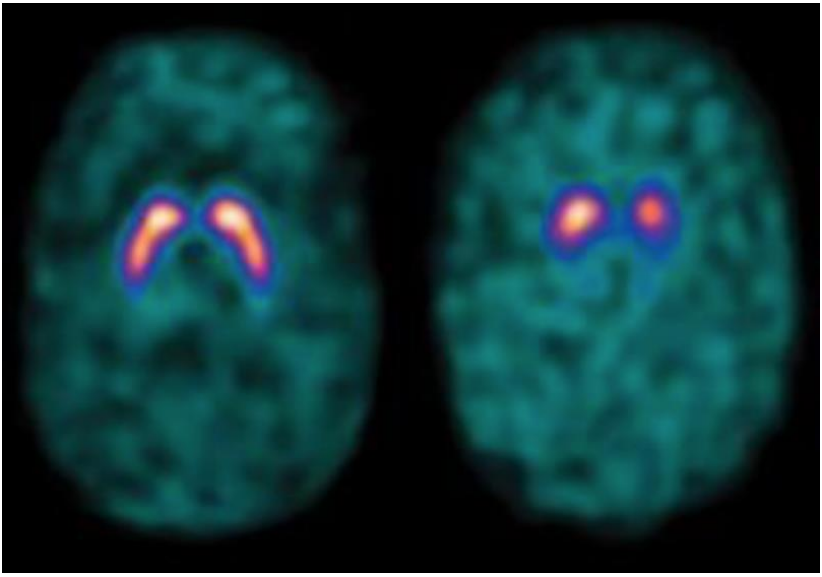

Figure 3.18 - DaTSCAN (123I-ioflupane SPECT scan) of a normal subject on the left. The patient with Parkinson's disease on right shows loss of normal comma shaped tracer uptake of the corpus striatum.

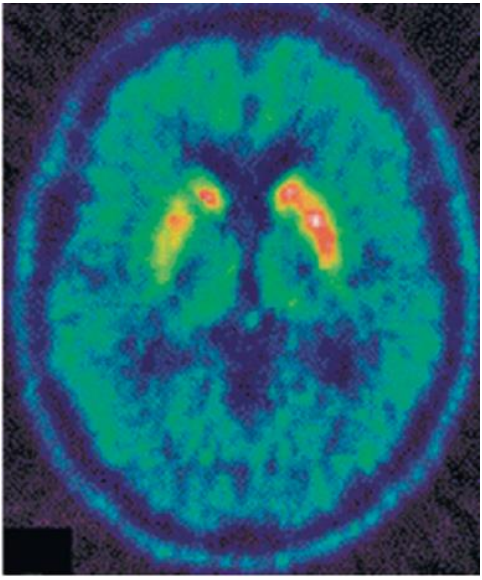

Figure 3.19 - 18F-Dopa PET images of the striatum in a patient with Parkinson's disease showing asymmetric bilateral reduced tracer uptake more severe in the caudal putamen than the rostral putamen or caudate nucleus.

Progressive Supranuclear Palsy (PSP)

Conventional T2W MR images show hypointensity of the substantia nigra. More specific abnormalities include T2/ FLAIR hyperintensity of the periaqueductal and tectal regions. Also, there is thinning of the quadrigeminal plate with T2 hypointensity in the superior colliculi. The third ventricle is dilated.

Midsagittal images show reduced diameter and concave superior surface of the midbrain, producing the characteristic "humming bird" configuration. There is atrophy of the superior cerebellar peduncles, producing the "morning glory flower"

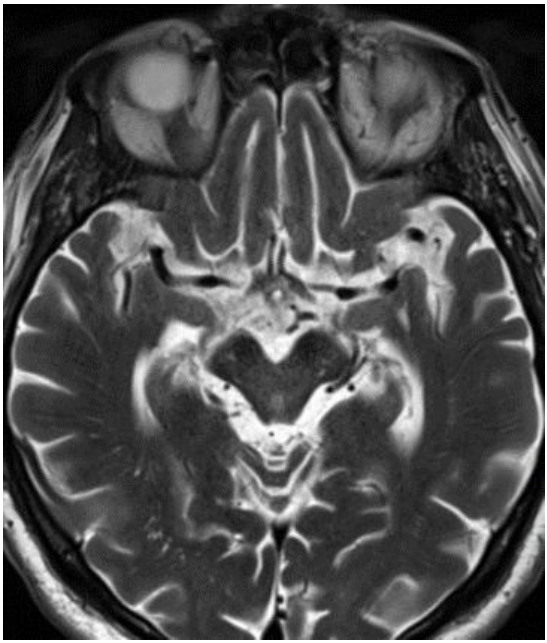

Figure 3.20 - PSP: morning glory flower appearance of the midbrain with reduced anteroposterior diameter.

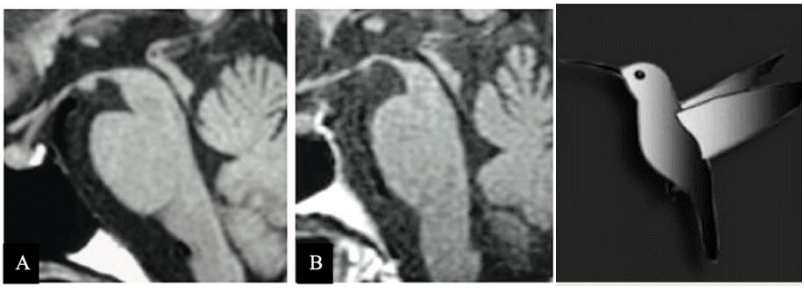

Figure 3.21 - A. Normal Brain, B. Patient with PSP.

Multi System Atrophy (MSA)

Multiple system atrophy (MSA) encompasses neurodegenerative disease characterized by autonomic, cerebellar, parkinsonian, and pyramidal features. MSA presents in the sixth decade and progresses for about 9 years from first symptom leading to death.

There are two clinical phenotypes of MSA according to clinical features. The parkinsonian subtype (MSA-P) accounts for approximately 80% of cases and the cerebellar subtype (MSA-C) for approximately 20% of cases.

On structural imaging there is reversal of normal T2 signal intensity of the putamen and the globus pallidus. Usually medially situated globus pallidus is darker than the putamen. In MSA this signal change is reversed and the putamen appears to be darker on T2. Also, the putamen often shows a hyperintense lateral border in MSA (putaminal rim sign). The putaminal rim sign is not specific and also seen in Parkinson's disease, but the combination of putamina hypo intensity and the putaminal rim is thought to be specific for MSA-P.

In MSA-C there is disproportionate atrophy of the cerebellum, brain stem and the middle cerebellar peduncles. T2 signal intensity is increased in the transverse pontine fibres, the middle cerebellar peduncles, the cerebellum, and the inferior olives, making unaffected structures such as the pyramidal tracts and superior cerebellar peduncles appear unusually dark and prominent. In the axial plane,

these features may give the pons the appearance of a "hot cross bun" or hyperintense cross sign.

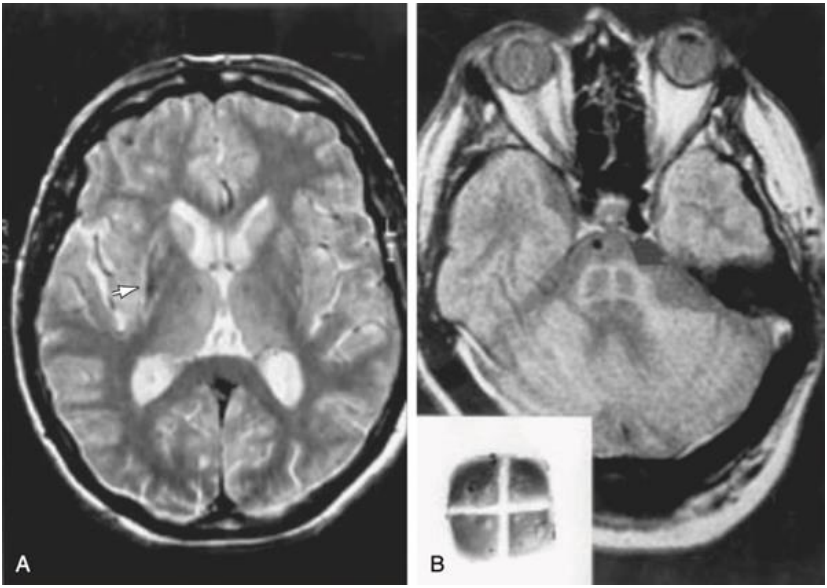

Figure 3.22 - Multiple system atrophy. A, Hyperintense putaminal rim (arrow). B, "Hot cross bun" appearance of the pons.

AFFECTIVE DISORDERS AND SCHIZOPHRENIA

It is long believed that the psychiatric disorders do not cause changes visible to the naked eye on neuroimaging. With the resent advancements in neuroimaging modalities specially fMRI, PET and SPECT they are, however, amenable to investigation and psychoradiology is an evolving field.

In a patient with psychiatric symptoms, structural neuroimaging modalities like an MRI are frequently normal and sometimes help to arrive at a diagnosis (see below). But its major use is to exclude any neurological disease or organic pathology masking as psychiatric disorder.

It is well known that the lesions in frontal and temporal lobes, most often tumours, can present with psychosis. In some cases, a behavioural syndrome is caused by focal seizures arising from a cortical tumour or from congenital or traumatic cerebral lesions. Similarly, psychotic features may also be found with thalamic or hypothalamic lesions. Sometimes, apathy caused by a frontal brain tumour may be mistaken for depression.

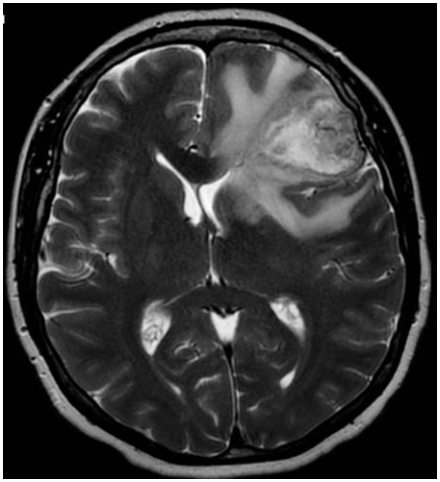

Figure 3.23 - A 56-year-old lady presented with depressive symptoms for 3 months. On imaging she was found to have a glioblastoma.

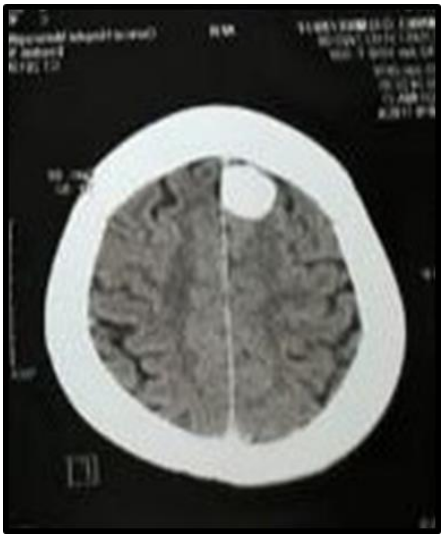

Figure 3.24 - 68-year-old patient presented with euphoric mood and disinhibition. She was found to have right parasagittal meningioma on CECT.

Neuroimaging can also detect drug related changes and changes related to the ECT. The following paragraphs discuss these in more detail. It is important to note that the current data and neuroimaging patterns alone do not allow for a confident nor accurate diagnosis.

Major Depressive Disorder

The whole mark is reduced cerebral activity or metabolism. There is decreased frontal and prefrontal cortex activity at rest, especially on the left side. The severity of depression is often related to the degree of frontal hypometabolism.

Several studies demonstrated that the hypometabolism normalizes after treatment if the patients improved. There is also increased limbic system activity with the treatment.

When a depressed patient performs a concentration task, the left prefrontal cortex often activates to normal levels. These changes are seen in SPECT/ PET studies and fMRI scans.

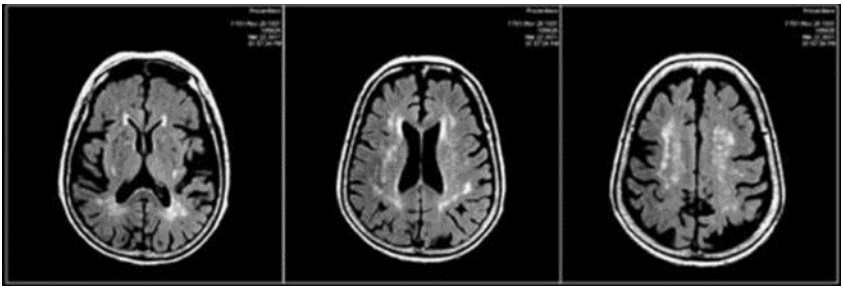

Figure 3.25 - Structural imaging in depression demonstrate cerebral atrophy and non-specific white matter changes. There is reduced thalamic volume and hippocampal volume. In contrast, there is an increased size of the amygdala.

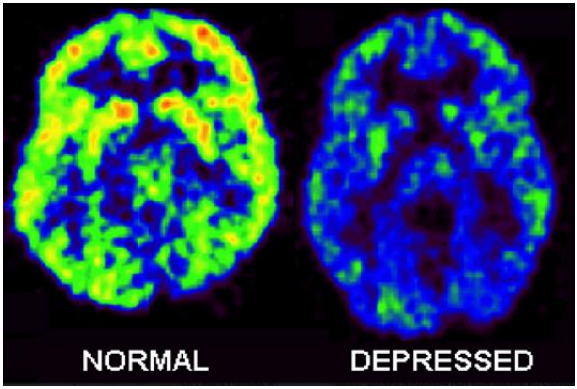

Figure 3.26 - PET study in a patient with MDD shows generalized reduction in activity.

Mania and Bipolar disorder

In chronic bipolar affective disorder, there is reduced cerebral cortical thickness in comparison to normal brains. During manic episodes there is increased activity and this increased activity is reduced by concentrating.

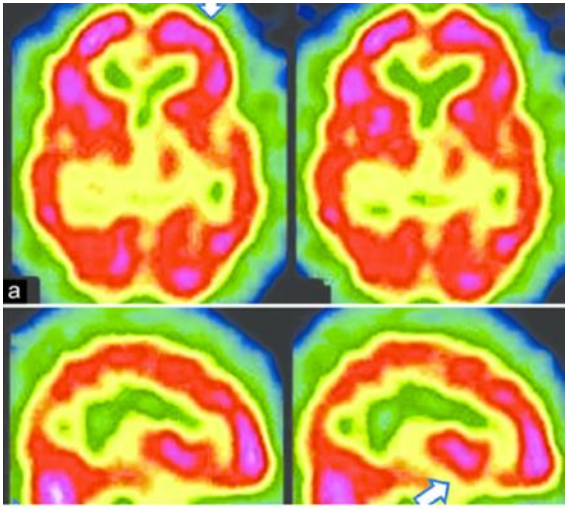

Figure 3.27 - SPECT of a patient with clinical mania showing increased activity in frontal lobes.

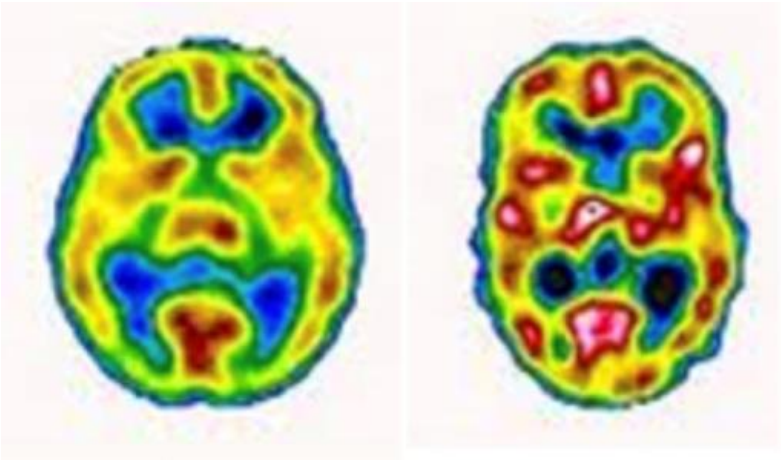

Figure 3.28 - a) Normal (SPECT) b) Bipolar Affective Disorder

Schizophrenia

There is diffuse cerebral atrophy with cortical thinning and prominent ventricular system. In patients with schizophrenia there is a reduction in activity and metabolism in the frontal lobes. In particular, the prefrontal cortex. The temporal lobes, amygdala-hippocampal complex also shows volume loss.

Differentiating the initial onset of bipolar disorder from schizophrenia is often difficult in an acute psychotic individual. Manic phase scans are often hyperactive as described previously.

Post-Traumatic Stress Disorder (PTSD)

PTSD is a mental health condition caused following a traumatic experience. It is observed in about 20 to 30% of individuals exposed to extreme traumatic stressors like war, sexual assault, and life-threatening accidents. Alterations in structural, metabolic, and molecular pathways in several brain regions including some cortical areas, neuroendocrine regions, the striatum, dopaminergic, adrenergic and serotonergic pathways, and the limbic system are found to be responsible for the condition.

Structural brain imaging (MRI) shows reduction in hippocampal volume (part of the limbic system) and the anterior cingulate cortex. Some studies suggested altered volume of the amygdala too.

Functional imaging (fMRI, PET and SPECT) demonstrate reduced connectivity and coupling of the;

1. The default mode network (DMN), this is composed of medial temporal lobe, the ventromedial prefrontal cortex (vmPFC), and the posterior cingulate cortex (PCC).
2. The salience network (SN), also known as the ventral attention network, which is composed by the anterior cingulate cortex (ACC), the amygdala (Amy), and the insula (Ins).
3. The central executive network (CEN), also known as the fronto-parietal control network, which is composed of the dorsolateral prefrontal cortex (dlPFC) and the praecuneous.

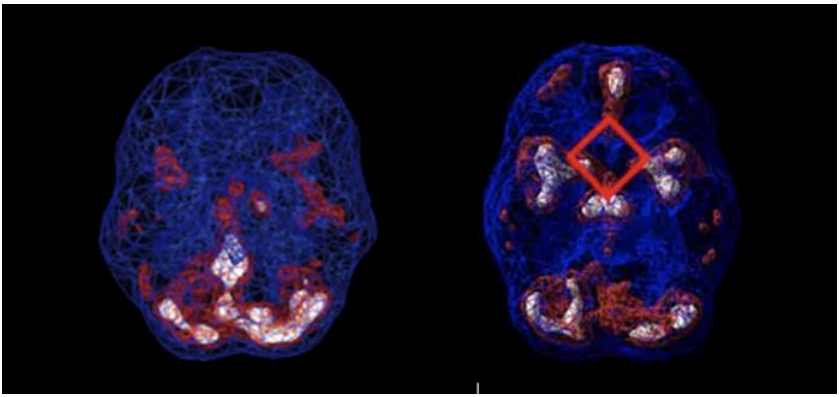

Figure 3.29 - SPECT scan of a normal (left) and PTSD (right) patient shows the most active parts of the brain with blue representing the average activity and red to white representing the most active parts of the brain. In the normal scan, the most active area is in the cerebellum and occipital lobes. In the PTSD scan, a diamond pattern of increased activity is evident in the deep parts of the brain including the limbic system as described.

There are targeted traces to directly image tau protein, which accumulate in traumatic brain following traumatic injury and

Alzheimer's disease and GABA receptors which will help to made the diagnosis with confidence in future.

Changes of cerebral metabolism can be observed in other psychiatric disorders namely substance abuse, OCD and ADHD. However, changes are not specific and out of scope of this chapter.

4. Common Psychological issues in the Older Adult

Dr. Madhushani Dias

Many older adults adjust to the changes occurring ageing successfully and healthily, while some face various psychological problems. Most of these problems do not meet the criteria required for a diagnosis of a specific psychiatric disorder. However, they still carry a significant impact on the quality of life, morbidity and mortality of older adults. Social isolation and loneliness, grief, and anxiety are some of the important psychological issues encountered by the older adults.

SOCIAL ISOLATION AND LONELINESS

Social connectedness is linked with longer and healthier life. Although social isolation and loneliness are not conventionally considered as health-related issues, they pose significant risks on physical and mental health of older people. A large number of adults around the world are affected by social isolation and loneliness (e.g. one in five people older than 65 are socially isolated).

Social isolation is the objective lack or limited extent of social contacts with others. Loneliness refers to the subjective feeling of being lonely. These two phenomena are not well correlated. Some feel lonely while having enough social connections, while some can be socially isolated yet do not feel lonely.

Loss of family or friends, presence of chronic physical illnesses, hearing and visual impairment, incontinence, heavy alcohol consumption, and living alone are some potential risk factors for social isolation and loneliness.

Consequences

Social isolation leads to 26% increased risk of mortality from all causes. This risk is comparable to the mortality due to smoking, obesity and lack of physical activity. In people with physical health problems, social isolation and loneliness lead to increased complications (e.g. In patients with heart failure, loneliness led to 4 times increased risk of death with

increased risk of hospitalization and emergency department visits. Social isolation and loneliness also increase the risk of having heart disease (29%) and stroke (32%).

Socially isolated people carry a 50% increased risk of developing dementia. It is a well-established fact that social connectedness protects against developing cognitive impairment. People who are socially isolated show higher incidence of depression, anxiety disorders and suicide. These could be the result of many negative behaviours associated with social isolation such as, smoking, heavy alcohol use, living a sedentary life-style, and malnutrition. The rates of falls, re-hospitalization and institutionalization are higher among isolated seniors.

Identification and management

Health care workers need to be aware of the impact of social isolation and loneliness among older people and attempt to identify and manage it pro-actively. Health care workers involved in community care and primary care have a unique opportunity in this regard.

There are several structured tools to screen for social isolation and loneliness. Asking a few questions about social connectedness and subjective feelings about loneliness as a part of routine assessment will be good enough in the absence of validated tools in Sri Lanka. However, such tools can give an idea of the type of questions that need to be asked (Tables 1 and 2).

Abbreviated 6-item version Lubben Social Network Scale (LSNS-6) can be used to detect social isolation (Table 1).

Table 1 - Abbreviated 6-item version Lubben Social Network Scale (LSNS-6) – Social isolation

		0	1	2	3	4	5
FAMILY: Considering the people to whom you are related by birth, marriage, adoption, etc…							
1	How many relatives do you see or hear from at least once a month?	none	One	Two	Three/ four	Five - eight	Nine/ more
2	How many relatives do you feel at ease with that you can talk about private matters?	none	One	Two	Three/ four	Five - eight	Nine/ more
3	How many relatives do you feel close to such that you could call on them for help?	none	One	Two	Three/ four	Five - eight	Nine/ more
FRIENDSHIPS: Considering all of your friends including those who live in your neighbourhood							
4	How many of your friends do you see or hear from at least once a month?	none	One	Two	Three/ four	Five - eight	Nine/ more
5	How many friends do you feel at ease with that you can talk about private matters?	none	One	Two	Three/ four	Five - eight	Nine/ more
6	How many friends do you feel close to such that you could call on them for help?	none	One	Two	Three/ four	Five - eight	Nine/ more

Scoring:	Less Social Engagement	More Social Engagement
Total	0	30

Table 2 - UCLA three-item Loneliness Scale - identify those who are feeling lonely

Question	Hardly Ever	Some of the Time	Often
How often do you feel that you lack companionship?	1	2	3
How often do you feel left out?	1	2	3
How often do you feel isolated from others?	1	2	3

Addressing social isolation and loneliness is paramount in optimizing physical and mental health in older adults. Hence, interventions to address these should become an essential component in the comprehensive care plan for any older adult presenting to medical services.

Many countries have launched nation-wide programmes to mitigate social isolation and loneliness in older adults. There is evidence to show that education and engagement in long-term group activities targeted at specific groups are effective. Group programmes offering social activity and/or support, especially where participants are actively engaged are more effective. The evidence for home visiting and be-friending is not yet established.

Primary and secondary prevention of social isolation can be done through community and public health care teams, liaising with the relevant authorities. As an example, referring older adults to village senior citizens' clubs or religious clubs can be therapeutic. Developing new programmes in the community to facilitate group activities should be initiated by relevant health authorities, collaborating with other agencies like social services.

GRIEF

Many older adults experience loss of a loved one. By the age of 65, one in two women and one in ten men experience the loss of a spouse, with many more losing their siblings and friends.

Bereavement is the experience of having lost a loved one. Grief refers to the physiological and psychological response to bereavement. According to the widely accepted stage-theory of grief, in the process of adjusting to the experience of bereavement, the bereaved person passes through different stages of psychological and behavioural changes. Bowlby and Parkes described four stages of grief, which occur over a period of several weeks to months. The four stages are;

- shock–numbness
- yearning–searching
- disorganization–despair
- reorganization

In contrast to this, the Dual Process Model of coping with bereavement proposes that grief is a state of oscillation between focusing on their loss (loss-oriented stressors) and distracting from the loss (restoration-oriented stressors).

Contrary to the common belief, there is evidence that most older adults cope better with bereavement compared to younger population. They come to a stage of acceptance and re-engage in life sooner. Anger and denial are less throughout the grieving process.

Complicated grief

However, about 9% of older adults fail to adjust well to their loss and go in to 'complicated grief'. Complicated grief can be abnormally severe, prolonged or delayed. It is marked by features such as intense yearning and emotional pain, frequent preoccupations about the lost one, inability to accept the loss, sense of loss of meaning of life and impaired daily functioning, and these last for a prolonged period of time. It is considered as a distinct mental disorder and needs specialized treatment. Complicated grief can be co-morbid with depression in around 10% of the cases.

Complicated grief is associated with female gender, older age, low social support, low education and socio-economic state, past history of anxiety or depression and past history of multiple trauma or multiple losses. Spirituality is known to be protective.

Consequences

Bereavement can have numerous adverse effects on older people. It leads to weight loss and malnutrition, increased illnesses, reduced immune functioning and dysregulated cortisol patterns in the bereaved adults. They can also experience disrupted social rhythm, impaired sleep, and decreased life satisfaction and well-being. Bereavement increases social isolation and loneliness among older adults. In addition to complicated grief, bereavement can also lead to other mental disorders like major depression, post-traumatic stress disorders and anxiety.

Evidence shows that bereavement is also linked to increased mortality, especially in the early period after the loss: 'broken-heart' phenomenon. These deaths are accounted for by suicide, accidents, heart disease and cancer. People experiencing unexpected bereavement are at a greater risk.

Complicated grief is more detrimental than natural grief. Suicidality among widowed older adults with complicated grief is twice as higher than those experiencing normal grief.

Identification and management

Grieving elders may find it difficult to express their grief or consequences. Hence health care workers, especially those involved in primary care should be vigilant on older adults who have lost a loved one. Health care professionals can assist the bereaved older persons to cope better with loss and its consequences by providing support and encouraging ventilation of emotions and expression of grief.

Complicated grief or grief co-morbid with depression or any other mental disorder needs input by a psychiatrist. Distinguishing between natural grief and complicated grief can be sometimes difficult, and professional help should be sought in such circumstances.

Traditional grief work focuses on techniques like providing a secure base for the grieving person, showing universality of grief and facilitating the expression of grief, addressing social isolation and exploring feelings that block natural grief.

There is good evidence for newer models of grief therapy such as behavioural activation, emotional regulation with the help of techniques like grief monitoring and mindfulness, cognitive-behavioural approaches to challenge dysfunctional thoughts, narrative work about the death, helping the patient to find meaning in the loss and aftermath, reworking the bond with the dead one by reviewing photo albums and guided conversations with the symbolic presence of him/her, guided reminiscence and life review, restoring long term life goals and , expressive arts.

Medication may be necessary to treat co-morbid depression and other psychiatric disorders.

ANXIETY

The prevalence of anxiety disorders falls at the old age. However, anxiety disorders and subthreshold anxiety symptoms continue to be common among elders, with a prevalence around 17% (MentDis_ICF65+ study).

Generalized anxiety disorder, panic disorder, specific phobias and obsessive compulsive disorders are the common anxiety related disorders seen in older people. A large number of older adults suffer from subthreshold anxiety symptoms which do not meet the full criteria for above disorders. Illness anxiety and health anxiety are particularly common in this age.

Fear of falls is a common anxiety type seen among older age group, with a prevalence varying between 29% and 77%. People with fear of falls show significant physiological arousal and avoidance of feared situations, similar to other phobic disorders. It is a major psychological issue which leads to restriction of activities, loss of dependence, lowered quality of life and falls itself.

Anxiety is seen more among females and people with medical problems. In older people, anxiety is particularly associated with dementia, stroke and other physical disorders. Anxiety and depression are highly comorbid in older people. The diagnosis of mixed anxiety/depression should be considered in this group.

Consequences

Anxiety disorders cause detrimental effects on quality of life, level of functioning and recovery from other illnesses. The sequel of generalized anxiety disorder in older people, for example is much worse than that of myocardial infarctions and diabetes mellitus. This is true even with subthreshold anxiety, and three in four older persons with subthreshold anxiety will experience significant distress and functional impairment.

Anxiety is also associated with deterioration of cognitive functions. Studies have shown that co-morbid anxiety can increase the rate of conversion of mild cognitive impairment to dementia. Older people with anxiety experience a higher mortality rate and this risk is greater when anxiety is comorbid with depression.

Identification and management

In addition to physical and psychological symptoms of anxiety, older people commonly present with medically unexplained symptoms. The diagnosis of anxiety may be difficult in the presence of physical illness and multiple medications. Sometimes, medical illnesses like thyrotoxicosis, angina, arrhythmias and hypoglycaemia, and medications like sympathomimetics can produce symptoms seen in anxiety. Hence, it is important to investigate the older patients presenting with anxiety symptoms for presence of any underlying physical disorder.

In some situations, symptoms of physical illness such as COPD can lead to severe anxiety and panic attacks, leading to agoraphobic avoidance similar to panic disorder. Although it is clear that anxiety occurs secondary to physical illness, it is vital to treat the anxiety disorder in its own right, to reduce disability and improve the outcome of physical illness.

Simple behavioural measures like psychoeducation, relaxation, sleep hygiene, balanced diet and physical activity can help alleviate anxiety symptoms in most. Suitable patients can be offered cognitive-behavioural therapy and mindfulness based therapies.

SSRI, SNRI and Buspirone are the treatment of choice, if pharmacotherapy is indicated. Benzodiazepines should be best avoided in older patients due to risk of falls, and cognitive impairment associated with long term use.

More severe forms or anxiety co-morbid with depression or physical illness need evaluation and treatment by a specialist.

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5. Dementia

Prof. Shehan Williams

Dementia is a debilitating disease that is often overlooked despite being a global public health challenge. It affects more than 50 million persons worldwide and at least 250,000 people in Sri Lanka. The numbers are estimated to rise exponentially with the increase in the geriatric population. It is therefore important that all health care professionals have a reasonable knowledge and understanding about this condition.

Dementia is a general term for loss of memory, language, problem-solving and other thinking abilities that are severe enough to interfere with daily life. Many people think of dementia as a problem of memory alone. However, all aspects of a person's thinking, mood and behaviour can be affected. By definition, dementia is a syndrome with acquired chronic global cognitive deficits. This includes which includes memory loss (amnesia), disorientation, losing execution, communication, personality and behavioural changes resulting in functional impairment and progression over a period of at least six months in clear consciousness.

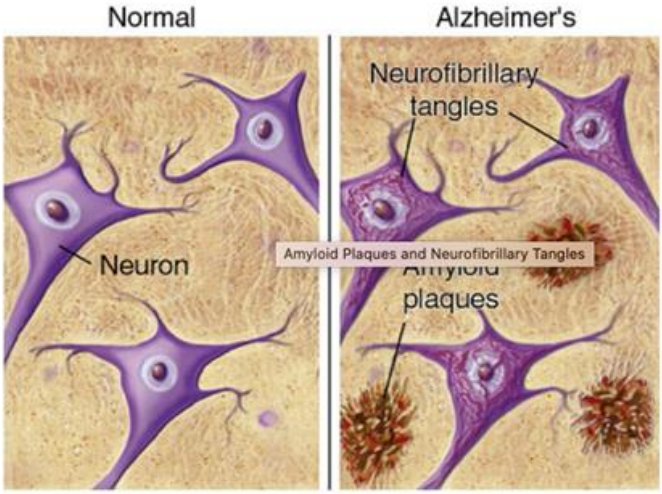
It is noteworthy that dementia is not a normal consequence of ageing. It is a disease that mainly affects persons when they age. Older people can live healthy with preserved memory and cognitive functions if they are not affected by this disease.

CAUSES

There are many reasons for a person to develop dementia. The commonest causes listed below are degenerative in nature and have no cure.

- Alzheimer's disease
- Vascular dementia (Multi – infarct dementia)
- Parkinson's disease and Lewy body disease
- Fronto-temporal dementias
- Huntington's disease

Alzheimer's disease is the predominant form of dementia and accounts for 50-70% of cases. It is characterised by an excess of intracellular neurofibrillary tangles and extracellular amyloid plaques.



BrightFocus Foundation 2000

There are however other causes which account for 5-10% of dementia which may be treatable if identified early. Therefore, it is important to look out for them in the assessment of a patient with dementia especially those presenting at a younger age.

- Benign tumours (e.g. sub-frontal meningiomas)
- Normal pressure hydrocephalus
- Subdural haematoma
- Vitamin deficiency states – B1, B12, B6
- Endocrine - hypothyroidism, Cushing's and Addison's disease
- Infections - AIDS dementia complex, Syphilis
- Vasculitides – systemic lupus erythematosus (SLE), polyarteritis nodosa (PAN), giant cell arteritis
- Alcoholic dementia / Korsakov's syndrome
- Chronic intoxications – heavy metals, drugs, carbon monoxide.
- Wilson's disease

ASSESSMENT

History

The progressive nature of symptoms, medical comorbidities, possible aetiological factors and functional impairment should be elicited. The risks encountered by the person such as accidents while cooking, falls, wandering away and getting lost, aggression, physical and financial abuse and exploitation should be explored. Support including assistance with taking medication, financial matters and emotional wellbeing should be understood.

Behavioural and Psychological Symptoms of Dementia (BPSD)

BPSD affects most persons with dementia at some point. They can be the most disturbing to the family and caregivers. These include disturbances in sleep and appetite, wandering behaviour, repetitive questioning, calling out, verbal and physical aggression, agitation, anxiety, apathy, delusions and hallucinations.

Mental State Examination

This exercise should involve looking for psychiatric co-morbidities. It is important to exclude depressive pseudo-dementia. Depressed persons may present with memory complaints and memory loss, and this can sometimes be mistaken for dementia. Furthermore, depression or anxiety can often be the first sign of underlying dementia.

Particular attention should be paid to delusions and hallucinations. Visual hallucination for instance, can be prominent in Lewy body disease.

Cognitive assessment

The cognitive assessment will be important to establish dementia. Although all cognitive abilities will decline depending on the severity of the dementia, initial deficits will be more apparent in short term recall.

It is useful to at least conduct a Mini Mental State Examination (MMSE) to document the baseline and then monitor the progression. MMSE is a 30-point scale now validated in Sinhala and Tamil. The following scores are generally indicative of the stage of dementia however this

should be always supplemented by clinical assessment and more comprehensive cognitive assessment if needed.

- Mild 20-24
- Moderate 12-19
- Severe <12

A more sensitive test is the Montreal Cognitive Assessment (MOCA) which is also available in Sinhala. The progression of the disease can also be mapped by using a simple clock drawing test.

Assessing the functional independence of the individual is also important in staging the severity of dementia and monitoring progression. Clinical assessment can be supplemented using scales such as the Bristol Activities of Daily Living Scale.

Physical Examination

A thorough examination including a general and neurological examination to look for all the causes of dementia has to be conducted, especially with the aim of excluding treatable causes.

Investigations

It is recommended that the following investigations be done to look for treatable conditions.

- FBC
- ESR
- Urea/creatinine/electrolytes/calcium
- Liver function tests
- Thyroid function tests
- Vitamin B12/ folate
- Syphilis serology/ HIV
- Blood glucose/ cholesterol
- Mid-stream urine
- Chest Xray / ECG
- EEG / CT/MRI

No particular test is diagnostic. However, hippocampal atrophy seen in a temporal lobe angled CT brain or MRI and ventricular enlargement is

characteristic of Alzheimer's disease. Vascular dementia in contrast will not show this degree of atrophy but will have an accumulation of white matter lesions. Lewy body or Parkinson's related dementia can be diagnosed on DaT scans that utilise Dopamine transporter ligands.

MANAGEMENT

A comprehensive and holistic approach should be taken in the management of dementia, with a multi-disciplinary involvement. At the beginning, the necessary information should be given to the patient and the family. Some patients may be keen to know about their illness while others may need help more to come to terms with their forgetfulness. It is essential to understand that a diagnosis of dementia, usually is a beginning of a journey that may last many years. The doctor will have to accompany the patient and the carer on this journey, assisting and supporting through its many challenges with their expertise.

Minimising risk

A degree of planning is important. The patient should be treated with dignity and respect and empowered to function autonomously as much as possible in the early stages. Too many restrictions should not be brought on overnight.

The safety of the patient will have to be considered and risks such as getting lost, putting themselves at danger while cooking and accidental injury will have to be minimised. Steps should be taken to prevent financial exploitation by carers and even emotional, physical and sexual abuse.

Medical management

In mild to moderate dementia, an acetylcholinesterase inhibitor may be commenced. Donepezil and rivastigmine are available and are commonly used in Sri Lanka.

Donepezil is commenced at 5 mg and increased to 10 mg after six weeks if there are no side effects. There is some reported benefit from its usage. Rivastigmine is given as a twice daily dose after meals starting

at 1.5 mg bd and slowly titrated up to 6 mg. Apart from initial gastrointestinal side effects, most patients tolerate them well.

Memantine is recommended in moderate to severe dementia. It can be given in combination with donepezil. It is administered twice daily doses usually commencing at 5 mg bd and titrated up to 10 mg bd.

Research on developing a disease modifying drug especially for Alzheimer's disease, has been on-going for many years. Recently, aducanumab (a monoclonal antibody against amyloid beta - Aβ) has been licensed in the USA amidst much controversy. Rodent studies have shown that it has the potential to dissolve amyloid plaques when given parenterally. However, critics argue that such a reversal may not necessarily improve cognition in patients.

Potential therapeutic interventions target pathways linked to the production of tau, which contributes to the formation of neurofibrillary tangles and the beta amyloid production pathway are been studied. Clinical trials are being conducted on

- Immunotherapy - against Aβ, β secretase
- GSK – 3 inhibitors
- Lithium (evidence for neuronal regeneration)
- FSH/ LH analogues
- Nerve Growth Factor gene therapy- injected into basal forebrain
- Intravenous immunoglobulins

Medical co-morbidities

In suspected vascular dementia, it may be prudent to consider an antiplatelet agent such as aspirin if no contraindications are present. Treatment of other medical disorders such as diabetes, hypertension, hypercholesterolaemia, hypothyroidism, chronic kidney disease, anaemia etc. should be optimised.

Nutrition and overall health

Often adequate attention is not given to a healthy diet. BMI and nutrition should be improved and vitamin supplementation done as necessary. However, over the counter 'memory boosters' are best

avoided as they are not of proven benefit and will invariably add to the polypharmacy and costs of medicines.

Smoking and excessive use of alcohol need to be addressed. Smokers are at higher risk of both Alzheimer's and vascular dementia. Similarly, excessive use of alcohol apart from its serious consequences (e.g. Korsakov's phenomenon where new learning is impaired) contributes to overall poor brain health and dementia.

Physical and mental activity

There is an increasing body of evidence that shows physical activity boosts brain health. Regular exercise and activity should be encouraged. Similarly, the person should be encouraged to participate in mentally stimulating activities. Playing board games, engaging in sewing, painting, religious activities and social interactions will all promote mental stimulation. Activities such as gardening will be useful for many of our patients. For a comprehensive account, please refer to the chapter on "Non-pharmacological therapies in managing dementia".

Behavioural and Psychological Symptoms of Dementia (BPSD)

BPSD is the most challenging as the disease progresses. Restlessness, poor sleep, wandering, agitation, irritability, calling out, anxiety and depression are common. These have to be managed as much as possible by educating the carer on environmental modification and a patient, non-confrontational approach. Frequent changes in the physical environment, carers and routines can exacerbate the condition. Furthermore, other causes such as pain and delirium, that may have precipitated this behaviour should be looked for.

Antipsychotics and anxiolytics should be used for short periods if the patient is extremely disruptive or difficult to contain. Quetiapine, risperidone, haloperidol, olanzapine or any of the antipsychotics can be used to manage acute disturbances. However, they should be prescribed at the lowest possible dose for the shortest duration possible. Benzodiazepines can worsen the confusion and agitation. All of these medicines can induce drowsiness and lead to falls and accidents. All antipsychotics can generate extra pyramidal side effects

although typical antipsychotics such as haloperidol are particularly implicated. They can also cause QTc prolongation (especially quetiapine and haloperidol) and hyponatraemia.

Carer support

The primary caregiver is usually a family member. They may often become anxious and distressed. They need to be supported and encouraged to look after themselves. Respite, rest and relaxation is needed for the caregiver.

Caregivers should be directed to information and support groups if available. Access to disability and social support should be facilitated.

End of life planning

In the initial stages of the disease, care planning and assessment of testamentary capacity should be done to enable the patient to write their last will and give advanced directives.

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Appendix I - Some Specific Causes of Dementia

Dr. Shehan Silva

ALZHEIMER'S DISEASE (AD)

Pathologically AD is characterised by amyloid containing extracellular plaques and intraneuronal neurofibrillary tangles containing tau protein. It was divided into early onset and late onset entities. Although the pathological appearance remains the same, management may be challenging in young due to effects on socioeconomic aspects.

There are rare autosomal dominant forms with mutations in 3 genes which probably increase brain amyloid levels. These include APP gene (Ch 21), presenilin 1 (Ch 14q), presenilin 2 (1q).

Risk factors of Alzheimer's disease include,

- Down syndrome (increased gene dosage of APP)
- Advanced age
- Female sex
- APOE ε4 gene
- Middle age obesity
- Head injury
- Raised homocysteine levels (Can be reduced by folate)

Protective factors for Alzheimer's disease are,

- APOE ε2 gene
- Higher level of education (threshold effect confounding with other associations with social class)
- Continued brain activity
- Social activity
- Exercise
- Diet rich in vitamin E (but not vitamin E supplementation)
- NSAIDS/ aspirin
- Statins

LEWY BODY DEMENTIA (LBD)

LBD should be considered if a patient has symptoms of AD with Parkinson's disease (PD) and neuropsychiatric phenomena (especially visual hallucinations and postural hypotension). The intracytoplasmic deposits of misfolded alpha synuclein which are found in substantia nigra in PD are found throughout the cerebral cortex in LDB. LDB is likely if cognitive functions precede physical symptoms by one year. The course of illness is rapid than AD. Hallucinations that can be troublesome may respond to rivastigmine.

FRONTOTEMPORAL DEMENTIA

Frontotemporal Dementia (FTD) originate 15% of dementia occurring below 65 years of age. However, they can present later and can have a rapidly progressive course than AD. Pathologically there is atrophy of the fronto temporal lobes with gliosis and deposition of intraneuronal inclusion bodies (tau). Another agent transactive response DNA binding protein (TDP-43) has been identified. Serotoninergic systems are affected than dopaminergic system with normal cholinergic and noradrenergic arms.

Typical symptoms of FTD include,

- Impaired executive functioning – planning, sequencing, prioritising, multitasking, self-monitoring and correcting
- Perseveration – repetition without sensibility
- Social disinhibition
- Compulsive eating
- Utilising behaviour – difficulty resisting
- Aphasia and dysarthria
- Apathy and abulia – loss of interest and motivation
- Loss of empathy
- Dystonia
- Gait problems shuffling and falls
- Unilateral tremors
- Clumsiness

SSRIs may be helpful for disinhibition, repetition and compulsion.

VASCULAR DEMENTIA

This is caused by chronic ischaemic injury to the brain. It can manifest in several ways

a) Multiple strokes (usually thrombotic or embolic although haemorrhagic is possible) leading to multi infarct dementia. Individuals strokes may be silent.
b) Single stroke in a critical region such as angular gyrus or thalamus (especially left side)
c) Subcortical ischaemic vascular damage
    i. Lacunar disease – small spherical strokes in deep parts of brain
    ii. Binswanger's disease – damage to small blood vessels of white matter (myelinated fibre tracts)
    iii. Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL) – this is associated with NOTCH3 gene on chromosome 19p. Although seen in younger patients with death occurring by 70 years it is noteworthy of the symptoms: multi-infarct dementia, strokes, migraine and mood disorders.
    iv. Cerebral amyloid angiopathy (CAA) – amyloid deposited in media and adventitia.

Vascular dementia is described of a stepwise deterioration classically. However, a slowly progressive cognitive and motor decline can be seen. The proportion of pure vascular dementia is small. Majority have an overlap of AD

The risk factors for VD are similar to stroke: hypertension, smoking obesity, dyslipidaemia, established atherovascular disease, atrial fibrillation, Asian/Afro-Caribbean origin. The feature of VD may be similar to AD.

Frequent symptoms include,

a) executive functions more affected than cognition. (encoding may be more difficult than retrieval, inattention and poor concentration
b) psychological symptoms such as apathy, depression, emotional lability, hallucinations and delusions. Insight may be preserved.

c) focal neurological symptoms and signs: parkinsonism, pseudobulbar palsy, marches a petits pas, incontinence and epilepsy.

Treatment requires control of risk factors although there are inconsistent reports. Controlling blood pressure and addition of statins are lacking good evidence

NORMAL PRESSURE HYDROCEPHALUS

NPH is seen in advanced maturity. It can present as primary absent aetiology where there are not causative factors. Secondary causes of NPH include post subarachnoid haemorrhage, trauma, meningitis. It occurs insidiously and is accompanied by a triad: intellectual failure, unsteady broad based (apraxia) gait and urinary incontinence. The diagnosis is made by a CT which demonstrates enlarged ventricles without widened sulci. Furthermore, the temporal horn enlargement, periventricular signal loss and absence of flow in aqueducts (jet sign). Improvement of cognition after a trial of removal of CSF is a useful diagnostic and therapeutic action. Ventriculoperitoneal shunts (VP) are used to treat patients and these should be taken in agreement as a multidisciplinary approach.

6. Non-Pharmacological Therapy for Dementia

Ms. M. G. Nadeesha Priyangani

The aims of a non-pharmacological interventions in dementia are to improve or (at least) maintain the individual's cognitive function, enable the person to continue to perform usual activities of daily living and/or address behavioural symptoms that often accompany memory impairment (e.g. depression, wandering, sleep, agitation, or aggression). Studies have shown that intellectual engagement and physical activity improve one's cognitive functioning; thereby providing support for non-pharmacologic interventions focused on individual's capabilities.

Evidence based non-pharmacologic psychosocial interventions demonstrate better cost effectivity than pharmaceutical treatments with the benefit of having no side effects. Thus this is an emerging modality for management of dementia. Cognitive rehabilitation, reminiscence therapy, reality orientation, validation therapy and cognitive stimulation activities are more helpful for dementia management.

REMINISCENCE THERAPY

The word 'Reminiscence' had been derived from *reminiscentia* (Latin: Act of remembrance or recollection). Older people reminisce more than younger people and may look back on the past to continue personal continuity. They may feel that their lives are aimless which would resort to reminiscing

Reminiscence therapy involve people relating stories about events and people from different times in their past, sharing their associated thoughts and feelings. It is therefore a popular psychosocial intervention for older adults, especially those having dementia.

There are different types of reminiscence sessions including interpersonal and intrapersonal reminiscence therapy. The occupational therapist can decide on the type, frequency, duration and purpose of the session and also on the materials used for the session according to the clients selected. Reminiscence materials should be carefully selected

to stimulate all five senses of human body. These include photo albums, vintage songs/music recordings, souvenirs, memorabilia, old newspaper articles, etc.

Reminiscence therapy has huge therapeutic effects such as increasing the level of cognitive functions, self-esteem, level of satisfaction and decreasing the level of anxiety and depressive symptoms. Furthermore, it supports and promote care-giver well-being as well as they often feel isolated, finding difficulty to establish new connections with their loved ones

COGNITIVE STIMULATION THERAPY

Cognitive Stimulation Therapy (CST) is an evidence based short term intervention created for people with mild to moderate dementia. It involves group or individual therapy sessions on themed activities to improve cognitive functions using techniques that stimulate various cognitive skills.

Occupational therapist can train the care partners to administer sessions at home with their loved ones with dementia.

A program is usually carried out over 14 sessions with each session following the same structure though themes may be changed. Themes include childhood, food, current affairs, using money, word games, memory games etc. Varied stimulating activities will be carried out around each theme. If it is a group, they will be small, often consisting of five to eight people. The group should provide a supportive atmosphere while activities should offer a range of multi-sensory experiences in an enjoyable way.

CST helps to improve general cognitive functioning, language comprehension, relationships and quality of life. Maintenance sessions may be carried out at the end.

COGNITIVE REHABILITATION

Cognitive Rehabilitation (CR) is a systematic, functionally oriented service of therapeutic cognitive activities based on an assessment and

understanding of a person's brain-behaviour deficits. Services are directed to achieve functional changes by reinforcing, strengthening or re-establishing previously learned patterns of behaviour, and by establishing new patterns of cognitive activity or compensatory mechanisms for impaired neurological systems.

It is a highly individualized intervention. The most problematic functional deficits are identified and specific goals are decided collaborating with the patient and the family. Thereafter the occupational therapist and team will decide on specific strategies to be used according to the rehabilitation plan. Outcomes will be measured through the re-assessments at the end.

CR of memory deficits encompasses strategies such as mnemonics, association techniques (face-name associations, visual imagery, etc.), organizational techniques (chunking, semantic clustering, etc.), errorless learning and use of external memory aids (large calendar, memory note book, reminders, etc.).

The therapist introduces the technique to the client who learns the strategy by modelling and cues. With regular practice there is learning to use the strategy in real life circumstances and in other similar situations.

REALITY ORIENTATION THERAPY

This is another widely used therapy that consists of verbal orientation and behavioural orientation. Verbal orientation is the ability to answer questions relating to time, place, and person orientation. Behavioural orientation signifies the ability to find the way from place to place without getting lost. It is an effective intervention in improving cognitive ability, communication and well-being.

A 24-hour reality orientation is a continuous process where the environment is manipulated with clear sign boards around home/ward, notices, clocks and calendars. The staff may also be trained to provide constant orientation when desired by the patient. ROT can also be done in group sessions where the patient meets with staff members for 30 minutes bi-weekly and discusses about current events.

VALIDATION THERAPY/ FANTASY THERAPY

This is based on the understanding that some of the disturbances associated with dementia are active strategies on the part of the patient to avoid stress, boredom, loneliness, etc., and to retreat into an inner world (fantasy) as the reality is often too painful.

The therapist validates the feelings of the patient and then gradually help him to move from his inner world to the shared reality of the surrounding. There is use of empathy, empathic communication, reminiscence and touch to establish emotional contact with the cognitively impaired person.

Validation therapy promotes contentment. Furthermore, it results in less negative effects and behavioural disturbance, production of positive effects and provision of insight into external reality.

CREATIVE/ EXPRESSIVE THERAPY

Each individual with dementia has a different experience of the disease and their own life stories. They can show creativity in ways which they and their care givers never thought possible under the guidance of a trained therapist. Creative art therapies help to improve quality of life of people with dementia.

Expressive therapy is the use of creative arts as a form of therapy. Through art the client will express the concerns and emotions that are in their inner mind. The therapist can identify and address those emotions.

Art therapy, dance / movement therapy, drama therapy, music therapy, poetry therapy and psychodrama are the most commonly used creative therapies. Each therapy has its own way of engaging and different therapeutic values.

Art Therapy **-** Participants work with paint and clay having an opportunity to extend their world with colours generating imagery and self-awareness. The mood and cognition significantly improves after sessions.

Drama Therapy – This uses performance and role playing improving quality of life for people with dementia by awakening memories and helping them to work through troubling issues from their past and also reawaken social skills. It facilitates coping with grief and cognitive and physical decline.

Dance Therapy - Movement therapy engages rhythm and body gestures to stimulate senses by exercising both body and mind. Non-verbal communication skills also improve by this method. An important role of this therapy is to help older people to reflect on final stages of life, express their grief about losing friends and loved ones.

Music Therapy - Helps to reduce ground anxiety of participants by a way of expressing joy and sadness. It comes together with playing music or singing and it helps to increase social interaction and communication with reducing social withdrawal.

OCCUPATIONAL THERAPY

Occupational Therapy (OT) is the use of assessment and intervention to support someone with everyday tasks. It is used as a part of rehabilitation after an illness or injury. OT can improve daily functioning, social participation, and well-being in people with dementia, and also improve the sense of competence and well-being of primary care givers.

Occupational therapist will work with someone with dementia to identify the difficulties in independent functioning and day-to-day activities and recommend ways to adapt the environment to support the person with dementia or improve basic skills through many ways. Occupational therapist also will ensure that well-being of care giver is being met, and will offer the care giver emotional support, coping strategies and information about support and networks available.

There are several ways how occupational therapist can help people with dementia.

- Advice on new techniques to continue and complete everyday activities (dressing, meal preparation, etc.)

- Support with right equipment to help with difficulties (correct wheel chair, etc.)
- Recommendations to ensure that home environment meets client's needs (adaptations)
- Fatigue management
- Introduce memory strategies
- Reminiscence work to help manage long term memory
- Orientation strategies
- Routine planning, to help structure the day and provide stability

BRIGHT LIGHT THERAPY

Mood swings and irritability is common in patients with dementia which becomes worse towards the end of the day. This therapy uses the practice of regularly sitting under a bright light lamp to help reset brain and balance mood. It is best done in the morning shortly after waking for 15-30 minutes. People can read the morning paper, watch television, or enjoy breakfast while sitting under the light.

The modality stimulates production of endorphins and serotonin in the brain, resetting mood and regulating natural circadian rhythm. This thereby helps to balance mood, improve overall well-being, and contributes for a better sleep.

AROMATHERAPY

Aroma Therapy is an ancient practice in which essential oils from plants, herbs, flowers, and trees are used to improve mental, spiritual, and physical well-being of patients. Essential oils are directed by inhalation or application on the skin. It thereafter works by stimulating olfactory receptors stimulating the part of the brain that is linked to the regulation of emotions. It has been widely used to relieve symptoms of anxiety and depression. Some essential oils stimulate cognitive functioning and memory (e.g. lavender oil, bergamot oil and lemon balm oil can help to calm the patient, and suppress aggression, agitation and other psychotic symptoms in patients with dementia).

SNOEZELEN MULTI-SENSORY STIMULATION

Snoezelen Multi-Sensory Stimulation provides a range of sensory stimulation that may be tailored to individual patients with dementia in order to heighten awareness and assist in the preparation for meaningful activity.

The Snoezelen should be considered as a 'tool box' with different sensory equipment to meet the different sensory needs of the person using it. It should not have all the equipment switched on at once. Equipment that might suit people with dementia may provide visual stimulation (bubble tube, etc.), auditory stimulation (wind chimes, etc.), olfactory stimulation (aroma therapy, etc.), gustatory stimulation (food types with distinct flavour, etc.), tactile stimulation (different textured fabrics, etc.) and proprioceptive & vestibular stimulation (rocky chairs, etc.).

The Snoezelen room can be adjusted up or down to manage the level of arousal such as anxiety or drowsiness and memory impairment and can be arranged to focus on a theme and encourage reminiscence.

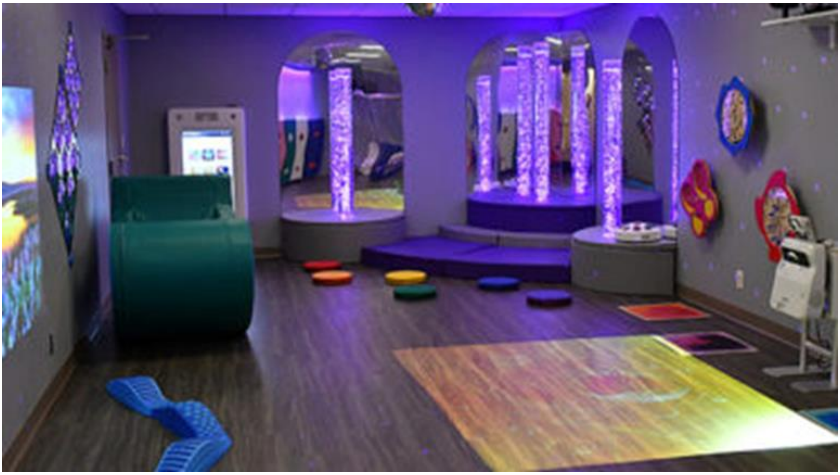

Figure 6.1 - A Snoezelen room

ANIMAL ASSISTED THERAPY/ PET THERAPY

Pet therapy is a relatively new therapeutic intervention which began in early 1990s. It quickly gained a wide acceptance within mainstream psychology. Pet therapy involves the use of dogs and other animals to help people cope with health problems and recover from diseases. For people living with dementia, it involves guided interactions with a trained animal.

There are lots of benefits of pet therapy for people living with dementia. It will help to increase pro-social behaviours and reduce behavioural disturbances while interacting with the dog. Neuropsychiatric symptoms are also reduced.

Pet therapy can reduce loneliness, depression, anxiety, anger, frustration, helplessness and confusion which are common in people with dementia. Increased mental stimulation from interacting with animals also increases memory recall.

BEHAVIOURAL THERAPY

This is used in the management of challenging behaviours in patients with dementia such as repetitive screaming, outbursts of temper, physical abuse of self or others, or wandering behaviours. The person's behaviour can be changed by changing the environment and/or by teaching him new skills through reinforcement. In dementia, the emphasis must be more on changing the environment, as the nature of dementia makes skills learning difficult.

Behaviour Therapy requires a detailed assessment where triggers, behaviours and reinforces are observed and their relationships made clear to the patient. Therapists use diaries/ charts to collect information about the behavioural symptoms and interventions are based on an analysis of these findings. Planning of an intervention should be focused on three key features, identifying individual's preferences, changing context in which the behaviours occur and using reinforcement strategies and schedules that reduce the behaviours. Reinforcement can be provided to patients in simple ways by patting back or talking.

ENVIRONMENTAL ADAPTATIONS/ HOME MODIFICATION

These are the changes made to adapt living spaces to increase usage, safety, security and independence. Occupational therapist plays a key role in identifying strategies that enable individuals to modify their homes, thereby maximizing their ability to participate in daily tasks.

Home modification process includes evaluating needs, identifying and implementing solutions, training and evaluating outcomes that contribute to the home modification.

Through assessment, occupational therapist will identify the functional areas affected due to environmental hazards. The skills of balance, coordination, endurance, safety awareness, strength, memory, attention, problem solving, vision, communication and others will be assessed while the individual performs daily tasks and leisure activities. The home environment will be assessed to identify home hazards such as risk of falls (steps, slippery mats, etc.) and risk of getting lost (no proper door locks, wall colours, etc.).

After careful assessment, recommendations will be given for alterations, adjustments, or additions to the home environment through the use of specialized, customized, off the shelf, or universally designed technologies, cues, finishes and furnishings and other features that affect the layout and structure of the home. For the complement of intervention plan, care giver education and training should be done.

For example, for a person who has memory impairment that affects functioning, pasting visual signs on the wall, using colour code systems, labelling, showing directions as visual signs, etc. can be used. For patients with a risk of getting lost because of wandering behaviour, setting an alarm system at gate or doors, hanging curtains of the same colour as the wall and installing a proper door locking system are some of the suitable adaptations.

ASSISTIVE TECHNOLOGIES

Assistive Technology is any aid that can assist the most frail and vulnerable members of our society to live safely and well at home or in

a care home environment. Assistive devices that can be used in dementia range from simple, standalone devices to complex, integrated systems that help the person to remain independent as long as possible. It employs technology to help everyday living, monitoring, safety, communication, as well as prompting and reminding.

To enhance safety, motion sensors, falls detectors, virtual doors/exit sensors, GPS tracking devices and safeguarding technologies can be used. Temperature sensors, garden sensors, point of care technologies can assist daily living. Some technologies which assist communication are video conferencing, network/ computer with internet. Automatic medication dispensers, orientation clocks, locator devices are used help functional independence.

Assistive devices have many benefits on patients such as increased choice, safety, independence and sense of control, improved quality of life, ability to remain at home, reduced burden on cares and reduced accidents and falls in the home.

There are some ethical considerations linked to using certain technologies such as erosion. of privacy with monitoring devices. Sometimes the technologies can make life more complicated and extend beyond the abilities of person with dementia. Excess use of technology may reduce human contact and service provided by carer.

7. Caring for a patient with dementia

Mr. S. V. Wickramasinghe

Caring for a patient with dementia is challenging and tiring. The quality of caring affects the patient's behaviour and this in turn affects the quality of care giving. Characteristics of a good care giver include demonstration of kindness, mercy and empathy. Furthermore, they need to be abreast on treatment, nursing care and other issues with knowledge and good understanding. The patient may exhibit undesired behaviours if these characteristics are deficient

The problems in caring for an aged and dementia patient can be due to the patient's physical condition or mental state. Physical deterrents include hearing and visual impairment, weakness in the bones, muscles and joints and presence of physical diseases. Aggression, agitation, wandering, restlessness and collection of unwanted material (Hoarding–Diogenes syndrome) are psychological issues that play a role

NUTRITION

Patient should be assessed for swallowing difficulties and dental health. Semi solid and liquid foods or only liquid foods should be prepared. Whenever possible, patient should be encouraged and empowered to take his meals on his own.

Food can be modified to fit the patient's capability. These include providing easy to chew food and mixing food for the patient. Assistive devices such as specially designed spoons and high tables can be used. An adequate daily fluid intake should be assured. If the patient develops cough during swallowing, it is important to give liquids in small quantities. The patient should be explained about dietary modifications. In severe dementia, patients usually do not have any feeling about food. Furthermore, it is important to consider patient's weight, body mass index (BMI) and other medical conditions such as diabetes mellitus when preparing and planning diet.

HYGIENE

Maintaining hygiene is very important in caring for a patient with dementia. The patient may forget or lose interest in cleaning and maintain hygiene of self and the environment.

The care giver can attempt to involve the patient as much as possible by keeping to a routine whilst paying attention to patient's concerns. The patient should be prompted as required without enforcement. The activity can be broken down to small steps allowing more time for adjustment.

The patient may need assistance in carrying out complex tasks such as shaving and brushing of teeth. The quality of water and choice of soap should be carefully selected depending on the nature of the skin (rough, soft, bruised, or with injuries). A particular attention should be placed on skin sensitivity, which varies from person to person. Awareness or activation of oral hygiene is also very important. The patient can be assisted to select and dress in suitable attire which can be easily worn and removed.

TOILETING

The caregiver needs to understand how the patient feels and behaves prior and during urination/defecation. Care should be planned accordingly. If the patient has no understanding on cleaning after defecation, it should be reminded. Those who are unable to adapt should be helped. If toileting is irregular and informal, it should be reminded and practiced daily at a regular time. It is important not to use accusation, warnings, or harmful words in this regard. In addition, it is important to notice the colour and amount of the stools.

Many patients develop incontinence sometimes with unawareness. In such circumstances the patient needs to be taken to the toilet/ assistive commode/ urinal at regular intervals watching for signs that the patient needs to go the toilet. The toilet needs to be easily identifiable and accessible. Furthermore, the patient's clothes should be easily removable. It is of utmost importance not to humiliate the patient. The amount of fluid intake should be limited. A hand-made pad or diaper is

easy to care for, but one needs to be careful as these can cause skin allergies and excoriation.

SKIN CARE

Skin hygiene is essential for optimum health and personal wellbeing. For older people with dry skin it is particularly important to achieve a balance between cleanliness and over washing, which may damage the barrier function. Skin becomes less sensitive to physical stimuli such as heat and pressure. Therefore, it becomes more prone to damage. Awareness of pressure on the skin is crucial and pressure ulcers should be prevented. Skin should be cleaned, dried and massaged every few hours. Dryness should be maintained in susceptible areas and pressure should be kept to a minimum. This requires a change of posture every two hours, especially for patients who have been bedridden for a long time. Cleansing and trimming the nails, and keeping the beard and hair short will help keep the skin healthy.

PHYSICAL AND MENTAL PAIN

The patient may become agitated and frustrated when their mental and physical pains are not recognized and not responded to appropriately. It is important that the care givers are sensitive to these situations so that the difficult behaviours of the patient can be controlled.

WANDERING BEHAVIOUR

Walking aimlessly is a common problem among patients with dementia. Although it may be troublesome, it should not be stopped suddenly, as the patient may become impulsive and aggressive. The reason behind patient's wandering (e.g. unfamiliar environment, living in the past, confusion) should be ascertained. If walking is not problematic, obstacles in the path should be removed (e.g. furniture, wiring) and setting a clear and safe path (well-lit and non-slippery). If wandering is hazardous (e.g. wandering that puts the patient at risk of accidents) distraction and diversion strategy should be adopted. As an example when the patient tries to leave the house, talk patiently to him and suggest to do something else. Frequent utterance of negative and

restrictive terms (e.g. No, do not) may distress the patient and increase his impulsiveness. Therefore, such words should be used sparingly.

Furthermore, adequate safeguards need to be placed such as gates, door locks etc. Identification ornaments such as bracelets containing the name and contact details will help to locate the patient if he goes missing.

SLEEP

An environment that is suitable for the patient to sleep should be fostered. Dim light is ideal, as they can get confused in the dark. Provision of a comfortable bed, with reduced noise and light, playing soothing music helps to create a calm atmosphere. Day-time exposure to sunlight should be encouraged. Excessive day time napping should be avoided. The patient should be engaged in regular physical activities at day time as it will help the patient feel more tired at bed time and sleep easily. The patient should have some rest with relaxing activities at least 4 hours before bed. A regular time for bed with a routine for getting ready for bed should be encouraged. Excessive exposure to television and smart devices should be avoided for few hours before bed time. The patient should be given a bath with warm water and some warm milk before bed. Tea and coffee should be avoided. The patient should be trained to use the toilet before bed time. A bedside commode or urinal for night time use is acceptable.

The patient's usual sleeping posture should be identified. Patients may even prefer to sleep in a couch or chair. If the patient finds it difficult to fall asleep, rest his head on the pillow and talk/ soothe him until he falls asleep, or, with help of someone else, hold hands on both sides and hold on until he falls asleep.

AGITATION

Common symptoms of agitation include uneasy feelings, urge to move with no purpose, crankiness, lack of patience, nervousness and too much excitement. Patient with dementia may sometime show restlessness. It is important to systematically control it and calm the

patient. Observation is the key step for successful management. The posture adopted should be understood which should lead to finding out the reasons why he is restless. Addressing with love and kindness and with attempts to divert the attention before the situation escalates should be adopted. The patient can be directed to an activity of their choice.

AGGRESSION

Removal of harmful objects from the environment should be done as soon as possible. The safety of the patient and others should be considered. Shouting and ordering should not be practiced. However, attempt to approach him slowly and talk to him calmly and intimately. If possible, try to distract him from the situation by talking about something else or moving out. Keep the conversation focused and give clear direct instructions.

Identification of the reason for aggressive behaviour is very important. Attempt to make the patient aware of the correct situation, and come in to an agreement. This should be done calmly and patiently. If the patient's problem or idea does not match the place and time, distract him to another related issue or action.

PSYCHOTIC SYMPTOMS

Some patients with dementia may develop delusions and hallucinations. It is important not to argue with the patient. Rather than trying to show that his belief is wrong, try to acknowledge it and empathize with his experience. Attempt to understand the emotions behind these symptoms and reassure. If the patient is experiencing illusions or hallucinations, remove ambiguous stimuli from the environment and provide adequate lighting.

8. Depression in late life

Dr. Dewasmika Ariyasinghe

EPIDEMIOLOGY

Mental illnesses in general, affect the quality of life in many ways irrespective of age. Depression is a common illness across all age groups that can have a chronic course if not properly managed. Internationally, the prevalence of depression among the older adults' ranges between 4-11%. This is a colossal number considering the rising proportion of seniors around the globe.

In Sri Lanka 13.9% of older adults living in the community and 56% for those in 'elder's homes' have been reported. The incidence of depression is comparatively low contrary to the common belief, but the prevalence remains high as many patients with onset before the age of 60, live up to their old age. However, 'clinically significant depressive symptoms' shoot up to as 27.8%. Presence of these symptoms furthermore lead to significant functional impairment and reduced quality of life and these themselves increase the later development of depression (10% of these people develop full blown depressive episode every year, if not properly managed).

CLINICAL FEATURES

The high prevalence of physical illnesses and other disabilities masks the presence of depression in geriatric age groups. Moreover, the symptoms may be attributed to 'normal ageing' by the patient himself, relations or by the medical staff. Thus, when diagnosing depression, it is imperative that the health care staff look into it intently and the diagnosis should not be by exclusion of other medical problems, since physical and mental illnesses co-exist.

Common symptoms of depression include

- Low mood (may not be prominent due to 'smiling depression' in seniors)
- Anhedonia (neglect of previously pleasurable activities)

- Easy fatigability/ reduced energy/ lethargy
- Suicidal ideation/ death wishes/ attempts to take life
- Difficult concentration
- Forgetfulness (consider dementia as well)
- Reduced self-esteem
- Frequent complaints of being neglected even though is well taken care of
- Disturbed sleep and appetite
- Body aches and pains (burning pain all over the body)
- Preoccupations about dysfunctions of the body (e.g. not passing stools regularly)
- Worrying over trivial matters
- Neglect (self-care, medications etc.)

Diagnosis of a depressive episode as per ICD 10 requires at least 2 'major criteria' and at least 2 'minor criteria' for at least for two weeks.

Major Criteria	Minor Criteria
• Depressed mood • Loss of interest/ enjoyment • Reduced energy/ easy fatigability	• Reduced concentration and attention • Reduced self-esteem and self-confidence • Ideas of guilt and unworthiness • Bleak and pessimistic views of the future • Ideas or acts of self-harm or suicide • Disturbed sleep • Diminished appetite

IMPACT OF DEPRESSION IN THE OLDER ADULTS

People including health care staff, often fail to acknowledge the agony of a patient with depression. This can be quite distressing to the patient as well as to the family/ caretakers and the attending team.

Personal suffering – The presence of depression makes the patient see everything negatively and think that he will never be independent again. Therefore, frustration and irritability generate whenever others

'force him to do things which are of no help for him'. Development of complication of medical comorbidities will reduce the quality of life. This will be followed by more and more dependency on others. The presence of untreated depression worsens the prognosis of all the physical illnesses. Untreated depression is a well-known independent risk factor for increased mortality.

Caretaker suffering – Disheartening and distress of loved ones and caretakers along with health care workers will disturb the therapeutic effect of relationship. It will place additional burden on carers and someone may have to stop working to look after him. The quality of life of almost all the family members will be affected badly.

Depression and socioeconomic aspects - Depression in older adults can affect the society and economy adversely. Those who are still working may not be able to work in a productive way. Absenteeism (not present at work) and presenteeism (reduced productivity even if they are physically at the work place) can affect the patient as well as their care givers. Patients present to health care services frequently due to various physical symptoms and may have increased perception of disabilities they are already having. They may be subject to unnecessary investigations affecting one's own financial status and the economy in the country as a whole.

Suicide and depression - Depression accounts for 60% of the suicides in the older age group. The number of attempts in this age group are less compared to younger age groups although the attempts tend to be more lethal. Thus the proportion of completed suicide is higher. It is important to look for the possibility of acts of omission, since they are more worried about suicidal acts being sinful or the reputation of their children being affected by 'committing suicide'. The acts of such omission may be by not taking the medications properly leading to worsening of previously well controlled physical illnesses.

RISK FACTORS FOR LATE LIFE DEPRESSION

Several factors increase the risk of developing late life depression including. These include cognitive decline, age-associated

neurobiological/vascular changes, stressful events (grief, isolation), disabling medical conditions, sleep disturbances, genetic factors (less important), females gender, care giving, less social engagement and medications (such as beta blockers, benzodiazepines, calcium channel blockers and statins).

These factors should be identified especially in the primary care setting to help in reduction and early recognition of depression in those who are more prone to develop depression.

DIFFERENTIAL DIAGNOSES

Delirium and dementia are important differential diagnoses. If symptoms are only of few days, exclusion of delirium should be prioritised. Prominent cognitive complaints of a longer duration would point towards the presence of dementia as a co-existing condition or as a second differential diagnosis. A patient meets diagnostic criteria for depression as well however must be treated for depression first as it is treatable and improves the quality of life despite the nature of co-existing medical or other psychiatric illnesses.

MANAGEMENT

A physical examination is a must in any patient where features that have been missed in the history could be revealed. These include signs of elder abuse, nutritional deficiencies, deformities, skin problems, visual or hearing impairment etc.

Relevant investigations and liaison with relevant specialists is essential. Conditions such as anaemia, endocrinological (e.g. thyroid and adrenal imbalances) and metabolic conditions (e.g. hyponatraemia and hypercalcaemia) and rheumatological disorders (e.g. inflammatory arthritis/ vasculitis and fibromyalgia) need to be considered. A holistic approach towards managing a patient with depression is essential. Optimizing the management of medical conditions, hearing and vision, mobility (by giving supports), physiotherapy and modification of environment are important aspects.

Sub-syndromal depression

Pharmacotherapy is not recommended in the management of subsyndromal depression. Mainstay of therapy is to look out for possible contributing factors and address them. Some strategies include grief therapy (e.g. those losing a loved one) enhancing social support, problem solving skill development and counselling, optimization of management of physical illnesses, addressing hearing/ visual impairment, improvement of mobility, regular exercises and improvement of social connectedness.

Clinical depression

A person already diagnosed with depression and on treatment needs identification of possible causes for the relapse. This includes compliance with medications, control of co-existence of medical/ surgical conditions (especially undiagnosed), ongoing stressors etc. After addressing such precipitating factors, the dose of the current antidepressant should be increased if possible and if the patient tolerates the medication. A change of antidepressant is required in such situations.

A selective serotonin reuptake inhibitor (SSRI) such as sertraline or citalopram is most of the time the best option, although this depends on what antidepressants he has been given in the previous episodes and the presence of side effects (e.g. hyponatraemia and bleeding tendencies). A serotonin and norepinephrine reuptake inhibitors (SNRI) like venlafaxine or duloxetine can also be considered. Duloxetine has additional advantage of pain relief in patients with neuropathic pain. Mirtazapine is an effective medication with sedative properties. Tricyclic antidepressants like imipramine or amitriptyline are generally not used in this age group due to their adverse side effect profile.

A newly diagnosed patient with depression is recommended SSRI as the first line treatment. Commence with a small dose and increase gradually depending on the efficacy and tolerability. It is essential to monitor patients on SSRI or SNRI for hyponatraemia for those who are prone to sodium imbalances (e.g. multiple co-morbidities, frail patients, very old, females).

The antidepressant drug may be augmented with a low dose atypical antipsychotic or other agents in selected patients. Electro-convulsive therapy is also an effective and safe mode of treatment for those who show poor response to medications and who have a high risk of suicide and self-neglect.

The response to an antidepressant could take 2-3 weeks in seniors. This should be explained to the patient and the family members. Consensus on duration of treatment for late onset depression varies. Some guidelines recommend it to be two years although studies have shown high rates of recurrence following discontinuation of the antidepressant after two years of treatment. The decision to stop treatment should be made by a specialist.

Depression in the older should be managed with a holistic approach. Therapeutic nihilism should not deprive older patients of proper care. Treatment of depression will improve the quality of life of the silver age and those concerned.

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9. Manic Syndromes

Dr. Malsha Gunathilake

Manic syndromes in old age encompasses two main groups. One group includes patients with late-onset bipolar disorder (LOB) who experience their first manic episode at advanced age, irrespective of history of depressive episodes in early life. The second group also known as 'graduates' includes those with early-onset bipolar disorder (EOB). Traditionally 50 years is considered as the determinant.

The prevalence of bipolar disorder (BD) amongst older adults is lower than that of the younger population (0.4% vs. 1.4%). Out of all the cases of bipolar disease, approximately 10% falls into the late onset category.

AETIOLOGY

The knowledge on the aetiology of LOB is limited. In general, bipolar disorder has a higher heritability, but LOB is less likely to be associated with positive family history compared to EOB.

Of all the best evidence available so far, a role of cerebrovascular disease supports the occurrence of bipolar disease. Similar to the vascular hypothesis for depression in late life, there is evidence to support a vascular aetiology. Increased white matter hyper-intensities on neuroimaging has been a consistent finding in patients with LOB. There is more vascular involvement in deep frontal and parietal lobes and the putamen in LOB patients compared to age-matched older people with EOB.

Reduction in brain derived neurotrophic factor (BDNF) and brain volumes in BD are another consistent neurobiological findings related to LOB.

CLINICAL PRESENTATION

The DSM 5 and ICD 10 classification provide standardised diagnostic criteria for manic episode and bipolar disorder. Generally, a manic episode is characterised by

- Elevated mood or marked irritability
- Grandiosity
- Increase in energy manifest over activity
- Increase in mental activity leading to flight of ideas
- Increase in speech manifested as over talkativeness
- Disinhibition
- Distraction
- Engagement in risk behaviour (driving fast, unprotected sexual activities, risky business ventures, overspending)

They also have increased appetite and reduced need for sleep. In some cases, these symptoms may be accompanied by psychotic symptoms which usually tend to be mood congruent e.g. grandiose delusions. Hallucinations (commonly auditory) are not uncommon. In manic episodes these symptoms lead to interruption in the patient's day to day activities and/or lead to hospitalisation.

Hypomanic episodes are a milder form of mania. They usually do not have psychotic symptoms and do not interfere with patients' functioning or lead to hospitalisation.

The clinical picture of mania in old age is more or less similar to that of younger patients. Some studies have found that LOB has fewer manic symptoms and the episodes resolve early. Interestingly, depressive episodes occurring immediately after manic episodes are frequently seen in older adult patients with mania. Mixed affective episodes may be somewhat more common than in younger patients too. Older patients also tend to experience more psychotic features in the context of depression.

DIFFERENTIAL DIAGNOSIS

The new onset of bipolar symptoms (especially manic symptoms) warrants thorough assessment for other causes than bipolar disorder (medical, pharmacological or other organic dysfunction).

Early stages of dementia may present with manic symptoms such as irritability, emotional lability, sleep disturbance, and impaired judgment as a part of behavioural and psychological symptoms of dementia.

However, dementia is typically associated with decline in cognitive functions, such as aphasia, apraxia or impaired visuospatial functioning which is not a characteristic feature of bipolar disorder.

Hyperactive delirium can mimic mania. The co-occurrence of significant signs of confusion, fluctuation of alertness, or evidence of autonomic dysfunction may indicate the presence of delirium.

Frontal lobe dysfunction including fronto-temporal dementia, vascular lesions, traumatic brain injury or tumours involving the frontal lobe may present with disinhibition, poor judgement, and mood changes. They also have neurological signs and symptoms of frontal lobe dysfunction.

Medications and psychoactive substance such as steroids, antidepressants and stimulants can also induce manic symptoms.

MANAGEMENT

A thorough assessment including careful history, mental state examination, physical examination (focusing on frontal lobe signs), and cognitive assessment is essential based on our current understanding of the illness. Indeed, neuroimaging may be considered as an important component of the investigation of the older manic patient, especially LOB, looking into frontal lobe pathologies.

Treatment of bipolar disorder in older adults follows the same principles for younger patients. As a general therapeutic approach, one needs to be aware that pharmacological treatment of any disorder in older patients is challenging because of pharmacokinetic and pharmacodynamic changes of ageing as well as an increased risk of drug interactions.

Antipsychotics including haloperidol, olanzapine, risperidone, quetiapine and aripiprazole have gained a place in managing bipolar disorder in younger patients. These medications can also be used for older patients with manaia with caution, commencing with a low dose and increasing it slowly. Some antipsychotics such as quetiapine and aripiprazole have displayed efficacy in late-life BD, especially in the management of acute mania.

Lithium continues to be the most used mood stabilizer in old age. Traditionally, some clinicians and patients have been reluctant to use lithium as first-line treatment due to concerns regarding frequent blood level monitoring, nephrotoxicity, and the narrow therapeutic window. There is, however, evidence to demonstrate that patients using lithium for BD report better health and social functioning than counterparts using anticonvulsants or other medications. Evidence also suggests that lithium may help in reducing progression to dementia in late-life BD.

Valproic acid, lamotrigine, and carbamazepine are standard medications in the treatment of bipolar disorder in the adult population. Moreover, there is limited data on anticonvulsant use in older bipolar populations and a paucity of specific guidelines for their use. They have some important side effects which the clinician need to be mindful of when prescribing for older population. These include sedation, reduced bone mineral density and increased fracture risk and memory impairment, although the latter may be more of a concern for the older generation anticonvulsants (valproic acid, carbamazepine) than lamotrigine.

Benzodiazepines are used short term to manage acute manic episode in younger patients. However, they should be better avoided or used cautiously in older patients as they can lead to sedation and falls.

Limited information is available regarding maintenance treatment and prevention of subsequent episodes of late-life mania. Traditional mood stabilizers (lithium, anticonvulsants) as well as antipsychotics (olanzapine, aripiprazole, risperidone) which have demonstrated efficacy as maintenance therapy in younger adults are used in geriatric population as well. Lamotrigine, is attractive for treatment in older adults but it is effective to treat and prevent depressive episodes only. Maintenance ECT is an option for patients who show poor response to maintenance medication regimens.

Before deciding on the maintenance therapy, it is important to assess the necessity of maintenance therapy following the acute episode weighing the risks vs benefits and to have a discussion with the patient.

PROGNOSIS

There is evidence to support that late-life bipolar patients are, at increased risk of developing cognitive impairment, and possibly dementia. It is also associated with a higher rates of medical and neurological comorbidity, and an increased vulnerability to relapse.

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10. Delirium

Dr. Shehan Silva

Delirium is acute fluctuation of altered attention, awareness and cognition precipitated by an underlying condition or event in vulnerable persons such as older adults and children. It is also described by different names such as altered mental status, acute confusion state, sundowning, encephalopathy and acute organic brain syndrome. Furthermore, it is a neurobehavioral syndrome caused by transient disruption of neural activity resulting from systemic disturbance.

Prevalence of delirium in older persons during hospital admissions range greatly. Medical inpatients range from 3-30%, while surgical patients show 15-60% (orthopaedic surgery showing greater proportions). In the intensive care setting this is shown to be 20-50% and 60-805 in non-ventilated and ventilated patient. Hospices demonstrate 30% of prevalence while in community it is 15%

RISK FACTORS

Advanced age is shown to be an independent risk factor il medically ill patients. In the critically ill delirium increases by 2% per year of age for each year after 65. In the non-critical patient, the risk progress from 3% to 14% to 36% among <65, 65-74 and > 75 years of age.

Male sex is considered as a predisposing factor. Geriatric syndromes such as dementia, depression, decubitus ulcers, elder abuse, falls, malnutrition, neurological diseases, polypharmacy and pressure ulcers are predisposing factors a person to be pushed to a delirious state. Premorbid states of inactivity poor functional status and social isolation are also known factors.

Delirium influences increased morbidity by increasing suffering and adverse sequelae both physical (falls, dehydration, malnutrition, frailty and sarcopaenia, pressure sores, incontinence) and cognitive (dementia). It also results in increased risk of hospitalisation and in long-term institutionalisation. Mortality is also raised. However, delirium is most often missed. Over 70% of patients in non-critical medical and

surgical units as well as 65-85% of intensive care patients are not detected of having delirium.

AETIOLOGY AND PATHOPHYSIOLOGY

The causes of delirium can be categorized as follows as DELIRUM

D - Drugs
Dehydration
E - Electrolytes (Hyponatraemia, hypercalcaemia, hypernatremia)
Emotions (Pain, fear, anxiety, sleep deprivation)
L - Lung (Pneumonia, pulmonary embolism)
Liver (Hepatic encephalopathy)
I - Infections
Ischaemia (Cerebral, cardiac)
ICU setting
R - Restraints (Physical restraints, catheters, intravenous access lines
Retention (Urinary, faecal impaction, constipation)
I - Intracranial (Brain metastasis, stroke, seizures, subdural haematoma)
Severe Illness (Including surgery and shock)
U - Uraemia
M - Myocardial infarction
Metabolic (hypoglycaemia, alcohol, toxins, poor nutrition)

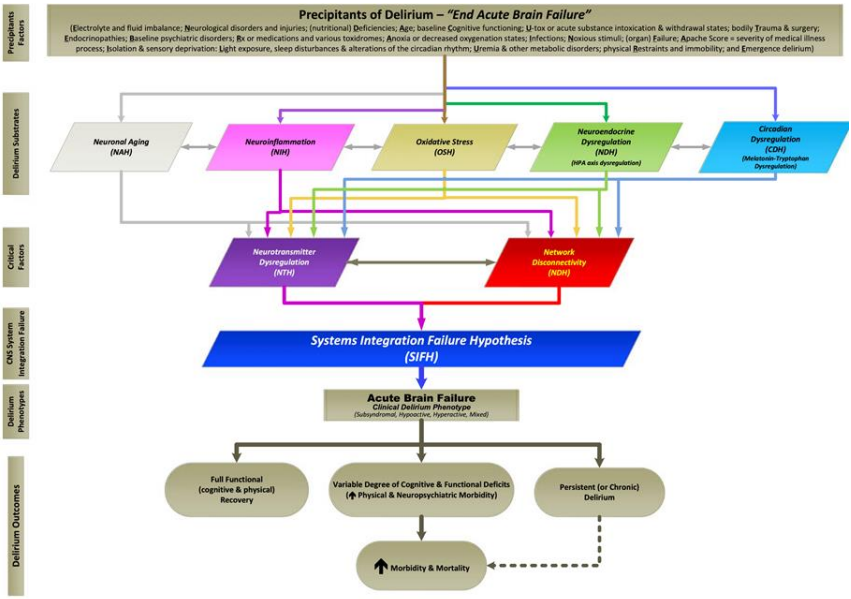
High risk	anticholinergics (antihistamines, muscle relaxants, antipsychotics, benzodiazepines, dopamine agonists)
Moderate to low risk	antibiotics (quinolones, antimalarials, isoniazid, linezolid, macrolides) anticonvulsants antiemetics (metoclopramide) antihypertensives (betablockers, clonidine) antivirals (acyclovir, interferon) corticosteroids low potency antihistamines (H2 blockers, urinary and gastrointestinal, antispasmodics) narcotics non-steroidal anti-inflammatory drugs sedative/ hypnotics tricyclic antidepressants

There is overlap of the following domains

a) Circadian rhythm – disturbance of sleep wake cycle
b) Global disturbance of cognition – perception, abstract thinking, comprehension, memory impairment, disorientation
c) Psychomotor disturbance
d) Emotional dysregulation – irritability, anxiety, anger, fear, perplexity
e) Impaired consciousness and attention – reduced ability to direct, focus, sustain and shift attention

In delirium there is waxing and waning of alertness (readiness to integrate stimuli enabling possible responses) and vigilance (attention to crucial external events).

The systems integration failure hypothesis (SIFH, Maldonado 2015) describes the interplay of multiple systems in the generation of delirium which include neuronal ageing, neuroinflammation, oxidative stress, neuroendocrine (hypothalamo-pituitary axis) dysregulation, circadian (melatonin-tryptophan) dysregulation. These are initiated by precipitants of delirium. The complex interplay of the five delirium substates gives rise to neurotransmitter dysregulation and network dysconnectivity.

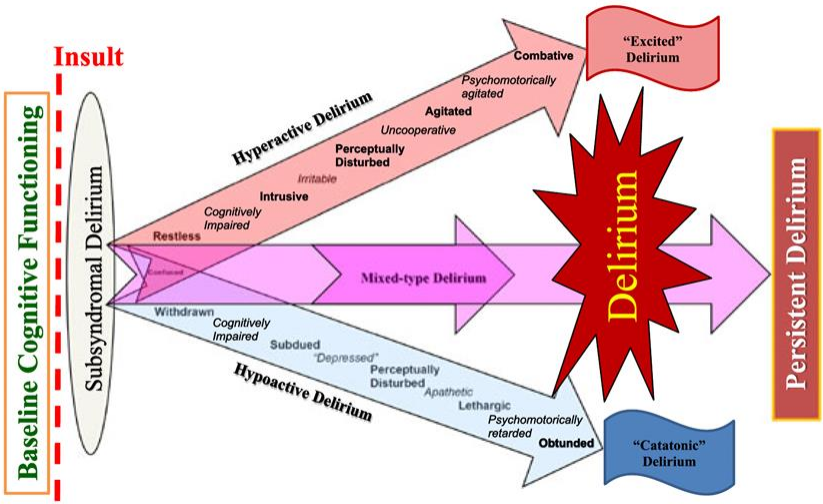


CLINICAL FEATURES

Delirium manifest as a spectrum of hypo and hyperactive states. Hyperactive delirium occurs in 8% of presentations and can be described as 'excited' delirium (catatonic excitement). Hypoactive delirium best described as 'catatonic' delirium (catatonic retardation) occurs in 66%. However, it is likely to be missed by medical and nursing staff. The remainder has mixed type of illness which can linger on (persistent delirium).

Hypoactive Delirium *At least four of the following seen*	**Hyperactive Delirium** *At least three of the following seen*
Unawareness Decreased alertness Sparse of slow speech Lethargy Retarded movements Staring Apathy	Hypervigilance Restlessness Fast or loud speech Irritability, combativeness Impatience Swearing Singing Laughing Uncooperativeness

	Euphoria Anger Wandering Easy startling Fast motor response Distractibility Tangentiality Nightmares Persistent thoughts



It is essential that delirium is differentiated from dementia. It causes diagnostic uncertainty. Furthermore, it can coexist with delirium. Table 1 shows some differentiating features

Table 1 – Difference between delirium and dementia

Delirium	**Dementia**
Acute/ subacute	Insidious
Altered consciousness	Clear consciousness
Fluctuating severity	Stable or gradual temporal deteriorate
Global disordered attention and poor short term memory	Normal attention with poor short term memory

Hallucinations may be present	Hallucinations absent (except in Lewy body dementia)
Hyper or hypoactive	May not have psychomotor disturbance
Reversible	Rarely reversible

Other differential diagnoses of delirium include depression (hypoactive delirium) and mania (hyperactive delirium)

DIAGNOSIS

The Confusion Assessment Method is used as a diagnostic algorithm in delirium. It consists of 4 aspects.

Confusion Assessment Method
1 Acute onset and fluctuating course *Is there evidence of acute change in mental status from the patient's baseline?* *Did this behaviour fluctuate during the past day (did it tend to come and go or increase and decrease in severity)?*
2 Inattention *Does the patient have difficulty focusing attention; e.g. being easily distracted or having difficulty keeping track of what was being said?*
3 Disorganised thinking *Is the patient's speech disorganized or incoherent; e.g., rambling or irrelevant conversation, unclear or illogical flow of ideas or unpredictable switching from subject to subject?*
4 Altered level of consciousness *Overall, how would you rate the patient's level of consciousness: alert (normal), vigilant (hyperalert), lethargic (drowsy, easily aroused), stupor (difficult to arouse), coma (unarousable)?*

The diagnosis required features 1 and 2 with either 3 or 4. The CAM diagnostic algorithm takes less than 5 minutes and has a sensitivity of 94-100% with a specificity of 90-95%. This is so with a short cognitive test such as the mini mental state examination (MMSE). The abbreviated mental test score is (AMTS) is also an initial pragmatic screening. AMTS although has culturally specific items and is considered more outdated,

has shown correlation with Montreal Cognitive Assessment (MOCA). Furthermore, it is brief and does not need paper or pencil.

AMTS

Age	Recognise 2 people
Time (nearest hr)	Date of birth
Recall (42 West Register Street)	World War 2 (Start or end year)
Year	Monarch
Location	20 to 1 backward
AMTS Total = /10	

The DSM-V Diagnostic Criteria for Delirium are also clinically useful in diagnosis

A. A disturbance in attention (i.e. reduced ability to direct, focus, sustain and shift attention) and awareness (reduced orientation to the environment)

B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness and tends to fluctuate in severity during the course of a day.

C. An additional disturbance in cognition (e.g. memory deficit, disorientation, language, visuospatial ability or perception)

D. The disturbances in criteria A and C are not explained by another pre-existing, established or evolving neurocognitive disorder and do not occur in. the context of a severely reduced level of arousal such as coma

E. There is evidence form the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (I.e., due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple aetiologies.

MANAGEMENT

Medical Conditions

It is essential that the modifiable risk factors and causative agents are addressed in managing delirium. Correction of hypoglycaemia, hydration status and electrolyte imbalances, addressing organ failure temperature control and chemotherapy for infection, and pain control (especially post operatively) are some important steps that need to be carried out. The clinician need to probe into medication and substance toxicity as well. Address deliriogenic drugs. Furthermore, withdrawal states (especially alcohol) need to be addressed as well. Wernicke encephalopathy is not common; however most vulnerable seniors have thiamine deficiency. Furthermore, chronic alcoholism may not be easy to differentiated from Wernicke encephalopathy. Therefore, thiamine supplementation should be considered as it is inexpensive and risk free.

A patient with delirium has a risk for immobility and confusion. These may be complicated leading to a high prevalence of irreversible functional decline. The outcome could be improved by early identification and comprehensive intervention. Complications such as immobility, sarcopaenia, deconditioning, aspiration, orthostasis, thromboembolism and skin breakdown. An interdisciplinary should focus upon maintaining ideal hydration and nutrition, improving mobility and range of motion, addressing pain and discomfort, preventing skin breakdown, ameliorating incontinence (and minimizing the risk of aspiration pneumonitis.

The family or other caregivers should be also taken into the care planning process. They may be frightened or exhausted]. Caregiver burnout and resources must be explored.

Managing agitation

Disruptive behaviour (agitation and combativity) is challenging. These place the patient at various risks and hazards such as falls, wandering behaviour or inadvertently removal of intravenous lines, feeding tubes, catheters and physical abuse of staff, care takers and other patients. Symptom control may be therefore necessary to prevent harm or to allow evaluation and treatment.

Nonpharmacological interventions should be the mainstay of treatment. Mild symptoms may respond to interpersonal and environmental manipulations. Confusion worsens with new environment (i.e. the hospital) with high ambient noise, poor lighting, lack of windows (absence of day-night differentiation), frequent room changes and restraints. Establishment of special units that address these will improve the outcomes. Frequent, patient caring reassurance, touch, and verbal orientation can reduce disruptive behaviours. Family members or other familiar persons are preferred. It is essential to understand that delusions and hallucinations should be neither endorsed nor challenged.

Physical restraints are only to be used as a last resort. Restraints have been shown to increase agitation and worsen loss of mobility, pressure ulcers, aspiration and also to prolong delirium. Constant observation (preferably by someone familiar to the patient such as a family member) is a suitable alternative.

A cautious trial of psychotropic medication may be warranted in these circumstances. There is limited data to guide treatment. It noteworthy that the use of psychotropic medication to manage delirium appears to correlate more strongly with caregiver distress than with the actual severity of delirium symptoms.

Antipsychotics should be used to treat severe agitation when there is presence or possibility of self-harm. There is no medication currently approved by the US Food and Drug Administration (FDA) for the management of delirium, so the use of these agents for such an indication is off-label.

Oral haloperidol 1.5 – 2 mg (maximum 5 mg) as needed can be prescribed. Continuous or prophylactic prescription is not recommended. Intramuscular, intravenous and subcutaneous administration of the same agent is also possible for rapid effects. There are some newer antipsychotics that can be used. Levopromazine is another drug used as 12.5 mg single dose followed by 12 hourly intervals. Other oral drugs employed include risperidone (0.5-1 mg bd), olanzapine (2.5-15 mg bd) and quetiapine (25-100 mg bd). It is essential

that prolonged QT as well as extrapyramidal symptoms are proactively monitored well.

Benzodiazepines should not be used as the first choice for insomnia or agitation as they have been shown to have a limited role in the treatment of delirium. They are primarily indicated in cases of sedative drug and alcohol withdrawal or when antipsychotic drugs are contraindicated. Lorazepam 0.5 – 1 mg have a rapid action. Studies have also shown that drugs such as midazolam have significantly more probability of causing delirium. Other sedatives such as dexmedetomidine and propofol can worsen delirium. Cholinesterase inhibitors do not have any role in the management of delirium or its prophylaxis.

Symptom control is not employed in management of hypoactive delirium. There are case reports that have suggested treatment with the stimulant drug methylphenidate may improve alertness and cognition. Absence of strong evidence for psychostimulants such methylphenidate or modafinil therefore cannot recommend using them due to potential risk of precipitating agitation or worsening psychotic symptoms.

Routine use of antipsychotics in terminal delirium for palliation is not recommended. However, haloperidol can be used as a case by case basis.

It is essential that the health professional understands that patient, family/care givers and fellow patients are greatly distressed. They along with other fellow health professionals may request immediate sedation for ease of care. Explanation should be provided regarding manifestations, that they are a result of organic cause and are transitory, subsiding in a short duration. It is essential that the care givers are explained well and engaged in the management of delirium.

Cognitive impairment or disorientation needs to be prevented and treated actively. A consistent health care by limiting the number of staff and the staff turnover needs to be adopted. A one to one dedicated care needs to be provided. Adequate lighting and cleared environment, devoid of clutter and minimal essential items in a safe environment

should be maintained. A functioning clock and an up to date calendar should be placed in the patient's room. The patient should be orientated and reorientated by explaining who they are, where they are and what the health care workers' role is in a patient conversation. Cognitively stimulating activities should be introduced. Furthermore, regular visits from family and friends should be facilitated.

Nursing Care

Dehydrating and constipation should be addressed. All patients should be encouraged to drink adequate fluids. If the patient is unable to adequately hydrate by mouth, intravenous or subcutaneous fluids should be considered. The patient should be assessed for ongoing hypoxia and oxygenation should be optimized as appropriate. Early mobilization with active range of motion exercise have shown to be effective as well. Presence of infection should be assessed and treated. Unnecessary catherization is avoided and infection control manoeuvres should be employed.

Pain should be assessed by verbal and non-verbal signs of pain. Appropriate pain management strategies should be employed and re-evaluated.

Adequate supplementation of nutrition and culturally sensitive meals should be provided. The closest family members are encouraged at meal time but restricting other visitors and non-essential health professionals (meal time protection). The patient should be provided dentures that fit properly.

Visual and hearing aids should be available and in working conditions. Check on other reversible conditions such as impacted ear wax. Sleep hygiene should be encouraged; this include promoting good sleep patterns. Medical, nursing and supportive procedures during sleeping hours are avoided. The environmental noise should be reduced. A proper and predictable sleep wake cycles and patient cat napping. Physical restraints to manage behavioural symptoms should not be adopted.

Just as per management of dementia a well visible clock and calendar should be provided. The lighting should be adequate with clear signage. All staff and visitors should be encouraged to reorientate the person by explaining where and who they are while explaining what roles are played. Early mobilisation should be arranged after critical illness and in particular surgery. Walking aids and physiotherapy are useful. All patients should be encouraged on working on range of movement.

11. Psychosis

Dr. Iresh Perera

The presence of psychotic symptoms in older adults is not an uncommon occurrence. This entity is seen more in in-ward patient groups. The aetiology can vary with different clinical presentations. Late life psychosis is associated with significant morbidity and mortality. Furthermore, irritability, aggressive behaviour and disorganization associated with psychosis will give rise to significant amount of distress and burden to the treating team and the care-givers. Psychosis in old age has further negative consequences to the patient like negligence, elder abuse and subsequent institutionalization.

CLINICAL FEATURES

The hallmark of 'psychosis' can be broadly defined as distortion of reality. However, the term psychosis is not clearly defined for the geriatric population. The presence of delusions, hallucinations, disorganized behaviour and disorganized thought process manifesting in the speech have been recognized as indicators of psychosis.

Delusions are firmly held ideas on unsound grounds, which can't be explained by the patient's socio-cultural background. Those beliefs will not be changed by rational arguments. Hallucinations can be defined as the perception-like experience with the clarity and impact of a true perception but without the external stimulation of the relevant sensory organ. The presence of negative symptoms like alogia (paucity of speech), asociality (reduced or absent engagement with others and interest in social interaction) and avolition (general lack of drive, or lack of motivation to pursue meaningful goals) may also be included in some descriptions. More often than not, these psychotic symptoms in older adults indicate the presence of one of the most disruptive mental health conditions leading to functional impairments. If left unidentified or untreated, the impact and consequence can be detrimental to the individual, carers as well as the health care system.

DIFFERENTIAL DIAGNOSIS

Psychosis arising in the old age can have various underlying causes, which can be quite challenging to determine accurately. The aetio-pathologies of those conditions can interact in a complex manner, complicating the management process further. Unlike in younger population, a secondary organic cause should always be looked into and excluded, as a guiding rule in assessing and managing psychosis in older adults. Frailty, reduced cognitive reserve and presence of multiple medical co-morbidities will contribute to the development and maintenance of the psychotic symptoms. Although the bio-psycho-social model operates at every stage of the disease process, the impact and the contribution of biological factors are more significant in old age. Furthermore, seniors are vulnerable to developing more than one psychotic syndrome at a given time. A good example is delirium superimposed on dementia or depression.

Delirium and dementia related syndromes, drug induced psychosis, substance related psychosis, primary psychotic disorders and psychotic symptoms arising in primary mood disorders are the main clinical entities seen in the older adults with this regard. Hence, identification of a psychotic symptom in older adult should prompt the clinician to look for these diagnostic entities as well as the underlying cause. Comprehensive psycho-geriatric assessment with collateral information, multidisciplinary team input and individualized treatment plans are the cornerstones of evaluation and management of psychosis in the older adults. Care should be taken to see the possibility of overlapping syndromes, to take necessary measures to prevent recurrences and to prevent long term consequences.

Delirium

Delirium can present with psychotic symptoms. Since delirium needs rapid evaluation and treatment, detection of psychotic symptoms should always trigger the suspicion of having delirium as the underlying cause for the psychosis. Relatively acute or sub-acute onset of fluctuating levels of cognitive functions like attention and concentration, giving rise to clouded sensorium and sleep-wake cycle

disturbances will show a clear change from previous status of the patient. Hallucinations which are mostly visual can present in other modalities as well. Patients can be very distressed due to psychotic symptoms. Furthermore, carers may suffer immensely with the difficulties in handling the patient. Since older patients are highly vulnerable to developing delirium, they need a comprehensive assessment. Management requires the urgent identification and correction of underlying cause/s. Non pharmacological management and nursing care are essential components of delirium management. There is a place for the use of antipsychotics which needs to be individualized and closely monitored. Since the condition is reversible, prevention of consequences and recurrence should be the long term goal.

Dementia

Psychosis is a common clinical presentation of dementia. It has been reported as the commonest diagnosis accounting for psychosis in the older adults. Dementia is an acquired syndrome of impaired cognitive functions, with insidious onset and relentlessly progressive course, resulting in functional dependency. In addition to cognitive symptoms, patients with dementia commonly present with behavioural and psychological symptoms. Psychosis is one such cluster of symptoms and causes significant distress to both the patient and the carers. Delusions of persecution and theft, delusions of misidentification and delusions of reference are more commonly seen in Alzheimer's dementia. These are mostly simple delusions without elaborations or systemizations. These psychotic symptoms can be aggravated by the presence of visual or hearing impairments. The psychotic symptoms seen in dementias with Lewy bodies are mainly clear visual hallucinations, which can be accompanied by auditory hallucinations and can be frightening as well. Other classical symptoms of Lewy body dementias includes fluctuation of cognitive functions, parkinsonian motor symptoms, frequent falls and sensitivity to neuroleptic medications. Management should begin with a comprehensive assessment, in order to exclude ongoing delirium or other secondary causes, for which they are highly vulnerable. Correction of these causes

followed by starting or optimizing cognitive enhancers together with non-pharmacological management are the next main steps. Pharmacological management with antipsychotics should be the last resort and need a careful evaluation due to possible adverse consequences. Second generation antipsychotics are preferred with lowest possible doses and for shortest duration possible. Lewy body dementias are highly sensitive to antipsychotics with detrimental outcomes including irreversible, severe extrapyramidal side effects and other life threatening adverse effects.

Depression

Depression is another common clinical entity in old age which can present with psychotic symptoms. The syndrome of depression comprises of persistent low mood, lack of energy and anhedonia. However, in old age the core symptoms and the associated features of depression can be atypical. The presence of cognitive symptoms, biological symptoms and somatic symptoms can be more pronounced and thus mask the presence of depression. The psychotic features seen in severe depression are mostly mood congruent nihilistic delusions, delusions of poverty, delusions of persecution, guilt, poor self-esteem and related hallucinations. These symptoms during a depressive episode indicate the severity of the depression. In the background of depression, their physical condition as well as medical morbidity may deteriorate. Hence a state of delirium, where psychotic symptoms can develop, can also complicate the clinical picture. Although the aetiology always needs to be understood through the bio-psycho-social model, in old age depression, there will be more biological factors involved. Vascular factors are implicated in old age depression and those can make it difficult to identify as well as difficult to treat. Since the presence of multi-morbidity and more severe episodes have been excluded in most of the treatment trials, clear evidence on treatment is lacking. Antidepressant and antipsychotic therapy should be individualized and carefully chosen, considering the presence of co-morbidities. Combination of psycho-social interventions with the medical treatment and electro-convulsive therapy when indicated will improve the outcome.

Primary psychotic disorders

Primary psychotic disorders can also present as psychosis in old age, where the core symptoms of the disorder are psychotic symptoms. This group mainly comprises of schizophrenia spectrum disorders (late or very late onset) and delusional disorders. Relapse of a primary psychotic disorder, with the onset in younger age also can present in old age.

Primary psychotic disorders occurring for the first time in old age carry some differences compared to those of someone who grew older with a psychotic illness. Late onset category will have better pre-morbid personality and social skills, less cognitive symptoms and less negative symptoms related to the psychiatric condition. There will not be features of thought disorder or affective flattening, but they will have more paranoid delusions. However, the most important step in the management is to exclude an organic aetiology. Management will comprise of the above mentioned principles. Late onset primary psychotic disorders will usually respond to relatively lower doses of antipsychotics.

Substances and medications

Psychotic symptoms in the older adults can be a presenting feature of a substance use disorders. The effects of substance intoxication, withdrawal and effects of long term use need to be considered. The increasing trend in use of substances among the geriatric population should remind us to inquire about this possibility. Many types of psychotropic substances are implicated including alcohol and cannabis.

Parkinson's disease is another common clinical entity in old age that is associated with psychotic symptoms. Those can be intrinsic symptoms of the Parkinson's disease itself. However, the commonest cause of psychosis in patients with Parkinson's disease is the anti-parkinsonian medications like levodopa, dopamine receptor agonists, dopamine release enhancers and monoamine oxidase inhibitors.

Prescribed medications, over the counter medications and herbal products may produce psychotic symptoms with their intoxication or withdrawal effects and even within therapeutic dose ranges.

Benzodiazepines, anti-histamines, anti-arrhythmic, anticonvulsants and steroids are some of such categories.

Organic diseases

Rarely, conditions like autoimmune encephalitis may present with psychotic symptoms in the older adults. Charles Bonnet syndrome typically involves the experience of complex visual hallucinations, in the context of visual loss with insight that the experience is not real. Although they do not have a clinically detectable cognitive dysfunction, follow up is indicated. Hallucinations can occur in healthy older people as well. This is much less frequent than that of younger population and need to exclude the possibility of sensory, neurological, medical, neuro-degenerative and psychological disorders.

ASSESSMENT AND MANAGEMENT

Psychosis in older adults is a challenging and diverse clinical entity with a multitude of interacting aetiologies. A comprehensive geriatric assessment is needed to capture the gamut of management goals. A multidisciplinary team involvement is of paramount value in the treatment of these patients. Involvement of family or the carers in the management and addressing their concerns should be given special attention. An individualized management plan should be developed after giving careful attention to co-morbidities. The combination of judicial pharmacological and non-pharmacological methods for the treatment and prevention is one of the many goals of the management. Medication should be started at the lowest possible doses, slowly titrated and given for the shortest possible duration. Possible long term consequences of each condition has to be monitored with the proper education of the carers.

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12. Alcohol and substance use disorders in old age

Dr. Venura Palihawadana

Although substance abuse, which in this context mean all possible chemical dependencies, may not be a common occurrence in this demography, due to the presence of physical co-morbidities and poor nutrition, its consequences can be more detrimental. However, it has been shown that the number of elderly people seeking help for substance use are increasing. It is an indication perhaps the problem is becoming increasingly severe.

The types of substances of abuse encountered in the elderly tend to differ from those of other age groups. The most common substances reported to be abused by the elderly population include alcohol, prescription opioids and anxiolytics such as benzodiazepines and hypnotics. The National Surveys on Drug Use and Health (NSDUH) conducted in the USA showed that more than two-third of men and half of women aged 50 and above used alcohol in the preceding year. However, there had not been any exploratory studies done in Sri Lankan setting.

CONTRIBUTING FACTORS

Various individual, social, and familial factors contribute to substance addiction in the elderly and most of the data available are related to alcohol misuse. However, there is a common theme found underpinning all substance dependence issues. According to literature, older males with more financial resources and longer, broader financial horizons are most likely to abuse alcohol. This may not necessarily be true in the Sri Lankan setting, as availability is a big factor in addition to the cost. For example, illicit alcohol (*kasipppu*) is cheaper and potent with possible other toxins in it. Some may even use methyl alcohol. Females are more likely to abuse other prescription drugs.

When considering substance abuse in general, two broad groups can be identified. The first group is genetically, environmentally or in both ways predisposed to develop addiction spectrum issues, either to seek

pleasure or as a coping mechanism to deal with life's distresses. They may have had parents or close relatives with addiction and may have been exposed to the use of substances at an early age with the development of psychological acceptance while growing up. In this group, receptor tolerances develop rapidly, with the need to increase the amount of substance used, to get the same desired effect.

The second group usually which develop alcohol addiction when societal roles are disrupted with the resultant loss of structure over emotional life and lack of validation of the individual as a productive member of the society. The use is secondary to a life event or an inner turmoil and is a way of coping with pain. The phenomenon can happen similarly with physical pain as well. Medical professionals need to have a good awareness on this. Patients are commenced on well-deserved pain medications and hypnotics often. As a feature of human conditioning, people tend to dislike and steer away from the unpleasant. Therefore, it is easy to develop both a receptor level tolerance, giving rise to withdrawal symptoms and a psychological crutch on these medications, thereby generating a fear of the return of the symptoms treated. Hence, it is easier to keep going, which tend to exacerbate the problem. A good deal of time is needed to explain the phenomenon of habituation and the need to proceed through despite the unpleasant withdrawal which will be eased off gradually, by just facing it while not reaching for the substance.

In both groups, overriding behaviours related to the use of substances can be seen, while neglecting usual life matters and relationships. These individuals tend to revolve their life around substance use which will increase in quantity, while there can be debts, disruption of family bonds, medical co-morbidities such as organ damage (liver, heart, nervous system, pancreas etc) and accidents, falls, fits and legal issues. With time they become shells of their former selves, with new problems like mental illnesses developing to add to the burden.

Although there is little research about psychiatric comorbidity with substance use among older adults, some evidence suggests that there is a high correlation between substance use, specifically alcohol use,

and depression and other affective disorders among older adults. The co-occurrence of depression and alcohol use disorder (AUD) can greatly complicate the diagnosis and treatment of both Diagnosis of depression can be complicated, especially in Sri Lankan setting, since patients tend to present with non-specific physical (malaise, various pain, lack of energy, clouded head etc) or psychological symptoms.

Sometimes elderly people might use alcohol as a sleeping aid since sleep problems are common among them.

When it comes to prescription medicine abuse, medical exposure to prescription medication is a major risk factor. Therefore, doctors need to be careful when prescribing for older adults. Sometimes use of concomitant alcohol and prescription medication can cause interactions as well as toxicity.

Interestingly, people who used avoidance to cope with problems are more likely to develop late life dependence issues. So do people who rely on substances to cope with tension. Similarly, people who had drinking problems during their younger days are more likely to develop problematic drinking in later life.

Social factors too play a significant role in substance addiction in older adults. Bereavement, physical health issues, loneliness, change in life's arrangements, loss of occupation, and caregiving for an ill spouse have been identified as some stressful events that can increase the risk of substance abuse.

Both high job satisfaction and work place stress in pre-retirement can lead to alcohol problems after the retirement. Involuntary retirement and wide social networks after retirement or isolation are found to increase alcohol consumption post-retirement.

However, above findings are largely obtained from developed countries and the factors leading to substance use among Sri Lankan elderly are not widely explored. Clinical experience suggests social isolation, disrupted family structure, presence of a steady income and untreated mental health conditions like depression as associated factors for substance use among elderly.

Social backgrounds that promote alcohol use such as presence of illicit alcohol can promote use in the elderly. Presence of alcohol at home and presence of other family members who frequently consume alcohol can lead to alcohol abuse among elderly. Unhealthy family dynamics can be risk factor for alcohol use in older adults.

The author's experience also suggests chronic painful medical conditions and poor family relationships as factors leading to prescribed medication abuse among elderly. Some elderly individuals with insomnia, depression or anxiety problems become dependent on prescribed benzodiazepines which are usually obtained over the counter. Not infrequently, they become revolving door patients at GP clinics and are prescribed long term medications leading to considerable iatrogenic harm.

DIAGNOSIS OF SUBSTANCE DEPENDENCE IN ELDERLY

Usually substance use disorder (SUD) is diagnosed using a clinical interview. Due to embarrassment and various social reasons, elderly individuals are less likely to present for a diagnostic interview. Therefore, treating doctors have to be vigilant to suspect it in vulnerable people. Typical addiction features like tolerance might not be seen among them, so family might not notice an increase in drinking. Since alcohol stays longer inside the body, damage caused by it can be even severe.

Because of the above factors, problematic use cannot be reliably diagnosed among the elderly leading to delays in treatment. Maintaining a low threshold for diagnosis and a high degree of awareness like searching for clues by talking to the family, when elevated liver enzymes are noted or there are many falls, traffic accidents or mental health problems presenting as unexplained physical problems, can be helpful in this group.

TREATMENT

Prior to commencement of pharmacological agents, it is important to treat any treatable mental illness.

Naltrexone has good evidence for effectiveness when tailored to the individual, combined with training of psychological coping mechanisms that need to be practiced as a routine. Well-adjusted premorbid personality traits devoid of mental illness and good social support do help in the prognosis. Naltrexone has the best evidence base to treat alcohol and opioid misuse and dependence. It is FDA-approved for this role combined with behavioural and cognitive psychotherapies. It is an antagonist at the mu- opioid receptor and can block endogenous opioids which tend to modulate and reinforce the effects of these substances. It also modifies the hypothalamic-pituitary-adrenal axis to suppress ethanol consumption. The side effects can be abdominal cramps, nausea, diarrhoea, signs of autonomic hyperactivity, anxiety, headaches etc.

Disulfiram blocks the enzyme alcohol dehydrogenase, which breaks down alcohol in the liver. If alcohol is consumed while taking disulfiram, an extremely unpleasant flushing of the skin, nausea, headaches, sympathetic over arousal with high blood pressure and sometimes collapse, delirium, and neuropathies can occur.

It is important to use it with a repertoire of psychological therapies. Extreme caution and close supervision should be exercised when using disulfiram in older people.

Acamprosate is an N-methyl-D-aspartate receptor modulator, which appears to promote a balance between the excitatory (glutamate) and inhibitory (GABA) neurotransmitters in the brain. Main benefit seems to be the reduction of withdrawal-associated distress. It has a safe side effect profile and it is not metabolized by the liver. It can be given despite alcohol use and can be administered to patients with mild to moderate hepatitis or liver disease. In trials it has helped to reduce returning to drinking but not the amount of use if they do drink. It is less efficacious than naltrexone or disulfiram clinically.

In some studies, fluoxetine, ondansetron and topiramate have been used to reduce drinking frequency and increase abstinence especially when there is associated depression in the case of fluoxetine.

As older patients are more vulnerable to alcohol induced cognitive impairment, they should be prescribed thiamine supplementation.

However, when prescribing, one must be cautious about side effects. Cross tolerance and drug interactions are common. It is important to be mindful about pharmacokinetic effects of drugs in a compromised physiological system.

There is no robust evidence for formal psychological therapies on older people, though in small samples mindfulness-based therapies promise some efficacy. As there are serious social network disruptions in this patient group, supportive psychotherapy while strengthening ego mechanisms is beneficial.

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Appendix II - Smoking in Older Adults

Dr. Iresh Perera

Tobacco use via cigarette smoking is one of such substance prevailing among the elderly. Although the local data is scarce about the matter, clinical observations and global trends indicate rising substance use among elderly. This is especially a concern due to the increasing older population and current pandemic situation. More often than not, use of other substances can be present in elderly who smokes compared to a non-smoking counterpart. As with other harmful substances, smoking will affect multiple aspects of elderly life.

One-half of smokers who do not stop using tobacco will die early from a tobacco-related illness. This may lead to an apparent reduction of smoking prevalence in this group as many will not reach old age. Smoking-related morbidity reported in more than one-half of tobacco users. Common medical diseases from smoking are cardiovascular illnesses, chronic obstructive pulmonary disease and cancers. Most medical conditions result from exposure to carbon monoxide, tars, and other non-nicotine components of tobacco. Apart from these, the metabolic pathways of various substrates including many medications, can be altered. Elders who are on multiple medications will have clinically significant effects due to the interactions.

Tobacco use disorders found to be associated with other substance use disorders, depression, anxiety disorders and personality disorders. Since the new onset of smoking can be rare in elderly, we should be more vigilant about the possibility of co-morbid psychological disorders in remaining long-standing smokers. Cognitive impairment is another aspect that needs evaluation due to high prevalence among the elderly with smoking. There will be significant effects on psychotropic drug levels as mentioned, hence dosages need adjustments with stopping smoking during restricted environments (like inward care) and with possible reinstating after discharge.

The risk factors and the associations of smoking in older adults have not been systematically studied in the local setup. However, available

data and inferences points at certain possibilities. Genetic factors will contribute to the onset of tobacco use, continuation, development of the tobacco use disorder and degree of withdrawal syndrome experienced by the user. Since the new onset smoking can be rare in this age group, genetic contribution may play a major role. As the sources are readily and legally available, the impact of socio-cultural factors are also important. Financial resources, peer influence, marital status, level of social support, retirement and loss of identity, boredom, lack of structure for daily life, social isolation and loneliness can be regarded as influential factors.

Identification and management of various levels of tobacco use disorder (harmful use and dependence syndrome according to the ICD-10 classification) in older adults is challenging as with other substance use disorders. Barriers are not only at the individual level, but also at the social and professional levels. Lack of data about the prevalence, associations and the effectiveness of the interventions are major hindrances. Ageism, other negative attitudes and negative assumptions at a wider socio-cultural level affect the matter. Medical service providers are reluctant to intervene as they may believe that the interventions are not possible due to long term disorder or that there will be no benefits. Contrary to that, clear data exists showing improvement in quality of life, reduced risk of disability and increased life expectancy after cessation of smoking in older adults.

Medical practitioners should take every possible opportunity to grasp the first step of management at each contact with an older adult, which is asking about smoking. Just inquiring and giving brief advice may have an impact on smoking. After assessing the interest in stopping, further help can be offered with advice and follow-up. If the client is not motivated despite the harmful effects, principles of motivational interviewing can be used in appropriate patients. However, the contribution of aforementioned individual factors need to be carefully considered and adjusted in each older adult.

Although several pharmacological options are available, the evidence is not clear for the elderly population. Varenicline is a selective partial

agonist of nicotinic acetylcholine receptor, shown to be effective in smoking cessation. Bupropion is another pharmacological option, commonly used as an antidepressant due to its dopaminergic and adrenergic actions. It also acts as an antagonist at nicotinic acetylcholine receptor, hence possessing efficacy for smoking cessation. Nicotine replacement therapy is another option, which will assist transition the discontinuation of smoking and prevent relapse back to smoking. This is available in several formulations including trans-dermal patches, lozenges, gum, oral strips, sublingual tablets and mouth sprays. Combinations of different formulations have revealed superior efficacy in some studies. Nicotine delivery devices like e-cigarettes have some conflicting evidence.

Clear evidence for the interventions in smoking cessation, data about prevalence and risk factors for smoking in old age is still insufficient. However, good therapeutic alliance, comprehensive assessment and individualize management strategies are essential and will have a positive impact on lives of older adults with smoking.

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13. Sleep disorders

Dr. Kishara Gooneratne

The importance of sleep for the well-being of the older adults is well recognized. As many as 50% of older adults, compared to 16 to 22% of the general population, complain about sleep problems. A large contributing factor to sleep disorders is the high prevalence of medical and psychiatric comorbidities in addition to the issue of polypharmacy. Patients with sleep disorders are often more likely to develop cardiovascular and cerebrovascular disorders, and individuals with a history of these medical disorders are often at a high risk of developing sleep disorders. Sleep disturbance in the elderly should be considered a multifactorial geriatric health condition, requiring consideration of multiple risk factors and a comprehensive treatment approach.

SLEEP PHYSIOLOGY

A sound understanding of changes to sleep physiology that occurs during aging is imperative to identify disordered sleep. The human 24-hour sleep/wake cycle is tightly regulated by the circadian master clock located in the suprachiasmatic nuclei of the hypothalamus. There are 2 systems which regulate sleep. The homeostatic system promotes the amount of sleep we need, whereas the circadian system optimizes the best timing to sleep. The suprachiasmatic nucleus regulates melatonin secretion by the pineal gland. Melatonin modifies circadian rhythm and signals day-night transitions. Melatonin levels in the pineal gland are low during the daytime and increase after the onset of darkness, reaching peak levels when it is darkest. A decrease in the melatonin peak is observed as age progresses which results in less intense sleep. Decline in the efficiency of the suprachiasmatic nucleus is another cause for age-related decline in sleep efficiency (percentage of time spent asleep while in bed). This can result in interrupted sleep, falling asleep earlier, and waking up earlier in the morning.

Sleep is divided into non-rapid eye movement (NREM) and rapid eye movement (REM) sleep. NREM sleep is further divided into light sleep (stages N1 and N2) and slow-wave sleep (stage N3). REM sleep occurs

periodically in cycles of approximately 90-120 minutes of sleep. In young adults, sleep of 7.0–8.5 hours is considered restorative while in the older adults 6.0–7.5 hours or less is considered normal. In polysomnographic studies, four changes related to aging are observed: decreased total sleep time, sleep efficiency, and slow-wave sleep; and increased waking after sleep onset. Thus older adults spend more time in the lighter stages of sleep (N1 and N2) than in deep sleep (N3 and REM) and they would wake up several times during the night. This is defined as sleep fragmentation.

DISORDERS OF SLEEP

Advance Sleep Phase

As part of aging, a common change in the circadian rhythm is termed advance sleep phase. Advance sleep phase in the geriatric population may be due to changes in the suprachiasmatic nucleus, as described above. It is often seen in the retired adults, who begin to go to bed earlier in the evening, such as at 8 to 9 PM, because there is little for them to do at that time of day, and subsequently experience early morning awakening at 3 to 4 AM.

Bright light therapy or being outside in the daylight in the late afternoon can help to reset their internal clock resulting in a more socially acceptable sleep schedule. It has also been shown that taking naps results in an increase in 24-hour sleep amounts and enhanced cognitive and psychomotor performance in the older adults.

Insomnia

This is indeed one of the most common sleep disorders observed in the older adults. Insomnia is defined as difficulty in sleep initiation, reduction in duration, consolidation, or quality that occurs despite adequate opportunity for sleep. There is an emphasis on the perceived dissatisfaction associated with insomnia. People with insomnia often experience excessive daytime sleepiness, difficulty in concentrating, and significantly reduced quality of life. Comorbid health conditions have a huge impact on the clinical severity of this condition. Anxiety and depression are common in the aged population and are closely linked

with insomnia. Prevalence of chronic pain is higher in older women than in men thereby reducing quality of sleep. Common medical problems such as ischaemic heart disease, hypertension, diabetes mellitus, renal failure, respiratory diseases such as asthma, immune disorders, and gastroesophageal reflux disease are all associated with a higher risk of insomnia. Moreover, certain medications including beta blockers, theophylline, analgesics and nonsteroidal anti-inflammatories have all been associated with poor sleep.

Treatment of this condition can be challenging. There are both non-pharmacological and pharmacological treatment strategies available. Non-pharmacological strategies are preferred and include cognitive behavioural therapy (CBT) and improving sleep hygiene. CBT aims to improve sleep by correcting misconceptions about the effects of aging on sleep, improving sleep hygiene, and developing strategies to overcome negative emotions that accompany insomnia. CBT strategies broadly include: sleep hygiene, sleep restriction, stimulus control, relaxation techniques, and cognitive therapy. Sleep restriction involves limiting time spent in bed at night and sleep during the day. The purpose of stimulus control is to re-establish an association between bed and sleep, restricting the bed for sleep alone and no other activity. Any single therapy does not appear as effective as when interventions are combined.

Recommendations for sleep hygiene include avoidance of caffeine and nicotine for 6 hours prior to sleep, avoidance of alcohol at bedtime, avoidance of a heavy meal before sleep, avoidance of exercise close to bedtime, and minimization of noise, light, and heat during sleep. Furthermore, advise should be given to older adults with insomnia to go to bed only of one is sleepy and the fact that the bed should only be used for sleep should be reinforced. It is important to maintain a regular sleep routine with regular sleep and wake-up times. If an older adult is unable to fall asleep within 20 minutes and if he/ she feels that one's mind is racing, it would be advisable to get out of bed and to engage in an alternative activity until one is sleepy. Avoiding daytime naps can reduce the likelihood of naps decreasing the 'sleep debt' that is necessary for easy sleep onset. Which means that naps decrease the

amount of sleep older adults need the following night – which in turn causes sleep fragmentation and difficulty in initiating sleep.

Bright light therapy (BLT) can be especially beneficial when it comes to treating insomnia in older adults. It usually entails just sitting next to a special light box for about a half hour, usually upon waking or during the evening especially in advance sleep phase. A study outlined by the National Institutes of Health found that BLT was effective in reducing daytime nap duration, helping to advance the peak circadian rhythm and increasing activity levels during the day and melatonin levels during the night.

Pharmacological treatment includes: sedating antidepressants especially in patients with concurrent depression, melatonin and nonbenzodiazepine hypnotics. Mirtazapine has demonstrated improvement in sleep efficiency and total sleep time in depressed patients though this data is limited. Melatonin has been demonstrated to decrease sleep latency, awakenings per night, and movements per night. It should be administered early evening rather than closer upon sleeping time. Limited data available suggest that nonbenzodiazepine medications such as zolpidem and zopiclone (Z-drugs) improve sleep latency and quality. Benzodiazepines are used around three times more frequently in older adults, and nearly a third of the elderly use them on a long-term basis. Since the older adults are more sensitive to the adverse effects of benzodiazepines, which include tolerance, withdrawal, over-sedation, cognitive impairment and risk of falls and fractures, they are not recommended as first line therapy.

There are newer drugs that have been introduced for the treatment of insomnia. Suvorexant is the first dual orexin receptor antagonist (DORA) that is FDA-approved in the US at doses of 5–20 mg to treat sleep onset and sleep maintenance insomnia. Low-dose doxepin is a sedating tricyclic antidepressant that blocks the wake-promoting effects of histamine through selective H1 receptor antagonism. Low-dose doxepin improves sleep continuity and sleep duration and appears to be a good alternative for older adults with sleep maintenance problems. Ramelteon, is highly selective melatonin agonist. It is used for the

treatment of sleep-onset and sleep-maintenance insomnia at a dose of 8 mg taken 30 min before bedtime.

When sleep onset is problematic, then either ramelteon or a Z-drug, such as zaleplon or zolpidem fast-acting formulations, is prescribed. If sleep maintenance problems predominate, then either suvorexant or low-dose doxepin can be considered. If both sleep-onset and sleep maintenance issues are present, one needs to consider long acting zolpidem.

A word of caution: hypnotic drugs should not be used in cases where obstructive sleep apnoea is suspected. SSRIs should be avoided in conditions such as REM sleep behaviour disorder and restless leg syndrome in which these drugs could aggravate the said conditions.

Obstructive sleep apnoea (OSA)

OSA is thought to be more common among the geriatric population. The classic signs and symptoms for OSA are upper airway obstruction during sleep, insomnia, and daytime hypersomnolence. The traditional risk factor such as obesity and short and thick neck may not be as prevalent in this population and thus identifying such patients might be challenging. Recent evidence suggests that OSA is associated with the loss of muscle mass and function commonly seen with sarcopenia in the elderly. OSA can result in an increased risk of hypertension, ischaemic heart disease and cognitive impairment and needs to be screened for, in the older adults.

Treatment for OSA includes positive airway pressure as well as lifestyle changes, such as weight loss, blood pressure control, and avoidance of alcohol and sedative drugs. Surgical options are also available for treatment of patients with OSA. Uvulopalato-pharyngoplasty with or without tonsillectomy, genioglossal advancement, and maxillomandibular advancement are a few of the surgical procedures used for OSA.

Central Sleep Apnoea

With aging, there is an increase of the prevalence of central sleep apnoea. Damage to the brain can occur with cerebral vascular disease,

Alzheimer disease, brain tumours and Parkinson disease and can increase the risk of both obstructive and central sleep apnoea. Other causes of central sleep apnoea include congestive heart failure (Cheyne-Stokes breathing), prolonged hypoxia, and opioid medications. Geriatric patients are also more susceptible to a "complex" or mixed sleep apnoea in which respiratory drive is reduced for reasons mentioned above, but the central component only becomes evident after obstructive events are treated.

Restless leg syndrome (RLS – Willi-Ekbom Disease)

Clinical features of RLS include: urge to move the legs, usually associated with unpleasant leg sensations which are worsened by rest and relieved by getting active, and nocturnal predominant symptoms. Sensations that are described are: crawling, creeping, pulling, itching, drawing, and stretching. RLS is associated with iron deficiency, thyroid disease, end-stage renal disease, diabetes, multiple sclerosis and Parkinson's disease. A family history of RLS is common. The need to ambulate to relieve the symptoms of RLS results in sleep fragmentation and decreased sleep time resulting in insomnia.

The first-line pharmacological treatment of RLS involves the use of dopamine agonists (i.e.: - ropinirole, pramipexole). Other medications include anticonvulsants, benzodiazepines, opioids, and levodopa. Iron supplementation is recommended in the presence of low serum ferritin, Nonpharmacological measures, such as sleep hygiene, exercise, restriction of caffeinated beverages, and pneumatic compression stockings, may help with symptoms.

Periodic Limb Movement Disorder (PLMD)

PLMD is characterized by repeated leg jerks or kicks during sleep that are accompanied by clinical sleep disturbance. Similar movements can occur in the upper extremities. PLMD occurs during sleep while patients with RLS are awake. There is significant overlap between the 2 conditions. PLMD is often reported by the bed partner. This condition id often associated with Parkinson Disease. Treatment options are the same as for RLS.

Rapid Eye Movement Sleep Behaviour Disorder (RBD)

RBD is a parasomnia characterized by movement during REM sleep in which atonia and lack of movements are normal. This condition is often associated with Parkinson Disease, Lewy Body Dementia and multi-system atrophy. Bed partners describe the individual engaging in purposeful violent movement such as s kicking, punching, or leaping from the bed. Clonazepam is suggested for the treatment of RBD. This should be used with caution in patients with dementia, and concomitant OSA owing to its sedative effects. More recently, melatonin has been recommended.

SCREENING TOOLS FOR ASSESSING SLEEP DISORDERS IN OLDER ADULTS

There are several screening questionnaires available for assessment of sleep quality, daytime sleepiness, and functional outcomes. A general assessment of sleep quality can be obtained using the Pittsburgh Sleep Quality Index (PSQI) or the Patient-Reported Outcomes Measurement Information System (PROMIS) sleep disturbance instrument. Two commonly used questionnaires for assessment of daytime sleepiness and functional impairments associated with daytime sleepiness are also discussed, the Epworth Sleepiness Scale (ESS) and Functional Outcomes of Sleep Questionnaire (FOSQ). The ESS which is often used in clinical practice is a 8-item questionnaire that assesses subjective daytime sleepiness. The ESS assesses the likelihood of dozing in different common situations using a 4-point Likert response format (scored from 0 to 3 with higher scores indicate more severe sleepiness). Item responses are summed to obtain a total scores ranging from 0 to 24, with a score greater than 10 indicating excessive daytime sleepiness.

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14. Sexuality in Old Age

Dr. Kapila Ranasinghe

Humans are never too old to enjoy the pleasures of sex. Older adults are concerned about the ability to stay sexually active as it gives them self- confidence and sense of general well-being However, it is generally assumed that old age invariably hinders sexual interest and makes the person less than able.

Human sexuality is a function of intimacy or partnership, attitudes, activity, behaviour and physical health. Limitation in any of these areas due to age or any other factor does not fully incapacitate the person of enjoying sex.

SEXUAL DESIRE AND ACTIVITY

It is natural that the older adult would bring forward the sexual desires, fantasies and intimacies they enjoyed during their younger days. What may actually change down the years would be physical health, availability of partners and the quality of the relationships.

Older men and women continue to have sexual desires and consider sexual activity as an important aspect of life, wishing to enjoy intimate sexual relationships in the forms ranging from cuddling and kissing to vaginal intercourse, oral sex and masturbation. The frequency of this pattern is similar to what is seen among younger individuals.

However, sexual activity among old may be less vigorous adapting to a variety of changes. They may not experience orgasm as intensely as they did before. Nevertheless, sexual activities are satisfying and enjoyable to the majority of them.

Sexual activity in later life mostly depends on the level of sexual desire and activity in the past. Other correlates of sexual activity are health-related issues, medical problems, marital status, and gender.

SEXUALITY AND GENERAL HEALTH

Poor sexual function may reveal an underlying serious health condition; the relationship between sexual dysfunction and cardiovascular disease being an example.

Evidence also shows that interest in sex, regular sexual activity and a good quality sex life are positively associated with health in midlife and later life.

SEXUAL DYSFUNCTION

There is a steady increase of sexual problems with age, both in men and women. The main contributor for this in men is erectile dysfunction (30% of men aged 65-74 years). Among men, the inability to experience orgasm is also positively correlated with age needing more time and greater stimulation for arousal and orgasm and the refractory period may be significantly longer. The most prevalent sexual problems among women are low desire (43%), difficulty with vaginal lubrication (39%) and the inability to climax (34%). Anxiety during sex declines with age in women.

These sexual concerns are the result of an interplay of biological, psychological and social factors. There are three domains of optimal sexual functioning: the drive (biological), the will (psychological), and the wish (the social context). Disruption of any or several of these may result in suboptimal sexual experience,

Biological factors

Medical and surgical conditions can directly affect the physiology of sex, or indirectly contribute by influencing self-esteem and body image.

As men grow old there may be a decline in testosterone levels. However, it does not hamper sexual desire and activity, as only a certain minimal level of testosterone is required for adequate sexual functioning. Furthermore, it is determined by the availability and the sensitivity of the testosterone receptors. The decline in sexual function among older women is most often due to decreased vaginal lubrication and thinning

of vaginal epithelium secondary to hormonal changes in old age, which may lead to dyspareunia.

Cardiovascular disease and risk factors lead to endothelial dysfunction and early development of erectile failure. Risk factors such as smoking, hypertension, diabetes, pro-inflammatory molecules, increased body mass index, and dyslipidaemia are major culprits. It is long established that erectile dysfunction can be a marker for asymptomatic coronary artery disease.

Diabetes mellitus leads to neurovascular insufficiency and may underlie frequent urinary tract infections and reduced vaginal lubrication. These patients may experience erectile dysfunction and reduced intensity of orgasm and report fatigue and embarrassment about their disease. In older women diabetic neuropathy results in low desire.

Lower urinary tract symptoms (LUTS) are common in older males due to benign prostatic hyperplasia. They increase in severity with age and cause poor sleep quality, anxiety and fatigue which may lead to erectile dysfunction, ejaculatory dysfunction, and hypoactive sexual desire. In women, the common urogenital concerns are of urge incontinence, pelvic organ prolapse, and urinary tract infection. These are associated with arousal disorders, dyspareunia, orgasmic phase difficulties, and reduced sexual satisfaction.

Incoordination and other motor effects of older people with neurological diseases (e.g. Parkinson's disease, strokes and motor neuron disease) can lead to sexual disorders and diminished sexual activity. Chronic pain syndromes may cause reduced libido and affect the intimacy between partners (e.g. Arthritis that gives rise to pain and stiffness especially in females). Hearing and vision are important for sexual arousal and impairment of these faculties may lead to retarded sexual expression.

Antidepressants, especially selective serotonin reuptake inhibitors cause anorgasmia, erectile dysfunction and decreased libido. Anti-hypertensives, which are commonly prescribed for older people can affect sexual functioning. Other drugs which are notorious for sexual side effects are diuretics, antiarrhythmics, benzodiazepines,

chemotherapeutic agents and antacids. While drug interactions and adverse drug effects are reported much more frequently in older adults than in the general population, they influence sexual responses including desire, by non-specific effects on general well-being, energy levels and mood.

Furthermore, illnesses such as respiratory diseases, multiple sclerosis and malignancies and surgical procedures such as abdominal and genitourinary surgery, reconstructive surgery, and use of medical devices such as catheters, all contribute to sexual functioning and expression.

Psychological factors

Psychological factors which modulate 'the will' for sexual activity, act as main determinants for sexual desire. Interestingly, strong psychological factors with strong 'will' can compensate for a weak physiological 'drive'.

Being mentally ill affects the sexual desire and activity at any age. Depression and anxiety are common in older people. The relationship of these two disorders with sexual dysfunction is complex and bidirectional. They can affect sexual desire and arousal either directly through the disease process or indirectly through the medications used to treat them.

Patients with schizophrenia experience orgasm less but among patients with bipolar disorders there is no significant orgasmic impairment. Interestingly those with personality disorders are associated with erectile dysfunction in later life.

Dementia, with all of its other vices, impact sexuality of both the patient and the partner. While in some people sexual interest may be diminished, others may show intense, aggressive or inappropriate sexual behaviours. It is difficult to understand whether a certain sexual behaviour is unnatural and inappropriate for the patient. Current behaviour should be compared with the patient's normative sexual desires and interests to differentiate the abnormality from nature. Genuine sexually abnormal behaviour can occur in any stage of

dementia of any aetiology. The general prevalence stands at 1.8% and it is commoner in vascular dementia. Inappropriate sexual expression can most commonly be indifference, and also intimacy-seeking and disinhibition.

Social factors

'The wish' or social factors, contribute largely to the sexual problems in the geriatric age group. Even the reported decline in sexual desire and activity in older women could be due to social factors. Continuing sexual activity in females is correlated with marital status, as the availability of a sexually willing, capable and socially sanctioned partner is essential for female sexual expression. As females generally outlive men, most females by their older years have lost their partners to death, which may directly affect their level of sexual activity. Even if they enter a new relationship, they may experience sexual difficulties after an interim period of abstinence (widower syndrome).

Sexual difficulties experienced by the partner can augment the problem. This is especially encountered in older females and should be inquired during clinical assessment.

In Sri Lanka, a lot of cultural beliefs and practices affect the lifestyle and behaviours of people. Traditionally they are less permissive towards sexuality in old age. In most extended families, which form the majority of families in the country, seniors usually do not get separate rooms ensuring privacy needed for sexual intimacy. Grown up children commonly oppose remarriage and relationships of their widowed parents.

Older adults with 'empty nest syndrome' and struggling to pick up the strands of their lives from where children and jobs have left them, may find it difficult to enjoy the pleasures of life including sex.

Treatment

When managing sexual dysfunction in the older adults, it is important to have an open mind and a broad view. Understanding the barriers, having an empathetic attitude and willingness to help go a long way. Detailed account on medical, sexual and social history and thorough

general and systemic examination are mandatory. Relevant investigations to assess metabolic indices, hormonal profile, relevant psychiatric scales and neurocognitive assessment also can be helpful.

The role of chronic illnesses should be appreciated and their management should be optimized. If there are offending medications, the choices and doses should be re-considered.

There is a scarcity of evidence to manage specific sexual problems.

Dyspareunia in older women can be treated with water or silicone-based lubricants or oestrogen supplementation. Mainstay of management of hypoactive sexual desire disorder in the older women remains sex therapy. There are currently no approved medications for postmenopausal women with the condition, but correcting oestrogen deficiency with oestrogen therapy is known to improve sexual desire and dyspareunia. Psychosocial issues such as the absence of a partner, a partner with sexual dysfunction, and depression also should be looked into and managed.

When treating the sexual problems of the older men, testosterone increases sexual desire, but has no effect on erectile function. It is definitively effective only for hypogonadism. Premature ejaculation, which is not so common among older males can be treated with tricyclic antidepressants and SSRIs with caution. Erectile dysfunction should be addressed according to its aetiology. While marital discord and depression are the gateway to erectile dysfunction in the young it is endocrine and vascular factors that trouble older males.

Sildenafil is effective, even in iatrogenic erectile dysfunction although the efficacy is lower above the age of 80 years. Surgical aids such as vacuum devices or prosthesis are not yet studied in the older adults. Troublesome bladder obstructive symptoms can be improved by treatment with alpha-blockers.

Non-pharmacological strategies including sex therapy can be utilized in certain situations. However, declining cognitive functions, not having much faith in talking therapies and difficulty in attending the sessions may all be barriers, especially in Sri Lankan set up. They may also be

embarrassed to talk about a topic which is already made a taboo by the society. Aetiological factors such as depression should be addressed primarily or concurrently, to achieve maximum results.

Management of sexual problems in dementia needs a multidisciplinary approach. Available options are selective serotonin reuptake inhibitors and cautious use of low dose antipsychotics. Non-pharmacological strategies with education and caregiver support are superior to pharmacotherapy.

PSYCHOSOCIAL BARRIERS TO SEXUALITY

Psychosocial barriers to sexual expression are performance anxiety (specially in men), marital conflicts, low self-esteem, negative body image, stress and life changes, cultural attitudes, knowledge and misconceptions related to sex. They are mostly common to both young and the aged.

However, older adults can be affected by other factors which are mostly brought about by the old age. Death of a spouse does not terminate the human need for further affection and intimacy, however it may be difficult now due to lack of availability of partners, societal restrictions and self-stigma.

Older adults influenced by the sociocultural misconceptions seek help for sexual problems only rarely. Negligent attitudes and restrictions of the society and health care system prevent old people from expressing sexuality and seeking help.

Sexuality in geriatric care raises a number of conflicting ethical issues. The right to enjoy sex and the autonomy of the client may conflict with the safety of the index person and the others. While there are no fixed solutions to these situations, they should be provided with case-based solutions while ensuring the best interest of all involved at heart.

SEXUAL MINORITY GROUPS

Ageing with the rest of the world, the LGBTQ (Lesbian, gay, bisexual, transgender, questioning) community also reach the silver years. It is

postulated that, by 2030, LGBTQ and other gender and sexual minority communities will make up 4% of the geriatric population globally. When physical health is considered, older LGBTQ people experience greater ill health and disability.

Strained relationships with family might worsen with age. Even in care facilities, conflicts can occur as they do not receive the sense of freedom or respect to open up on the subject of their sexuality.

SEXUALLY TRANSMITTED DISEASES

Sexually active old persons may be at risk for acquiring sexually transmitted diseases and this risk can be multiplied by the factors such as reluctance to adhere to safety precautions under the misconception that they are not susceptible to sexually transmitted disease. Moreover, they may be less aware about sexual matters, originating from an era where sex education was hushed. Even today, as health care professionals are reluctant to provide necessary information and instructions on the subject, they are at a higher risk and may go untreated for long.

THE HEALTH CARE SYSTEM

Health care system tends to turn a blind eye towards the sexual distress of the older adults. The reasons may be rooted in personal attitudes, and stereotypes based on cultural and societal values. Other factors are ageism and not appreciating sex as an attention-worthy area for the old.

Without proper knowledge and particularly training, professionals are not equipped to take a satisfactory history and examine. They may also assume that seniors do not wish to talk about sexual matters., it makes them uncomfortable to inquire on the subject, and this is sensed by the clients and make them uncomfortable too.

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15. Elder Abuse

Dr. Anoja Rajapakse

The World Health Organisation (WHO) has estimated that 15.7% of older people 60 years or older are subjected to abuse. The prevalence of elder abuse is higher in institutions such as nursing homes and long-term care facilities, with 2 out of 3 staff reporting that they have committed such acts in the past year. Furthermore, it is expected to rise with the rising population.

DEFINITION

Elder abuse is defined as 'a single or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust which causes harm or distress to an older person' (WHO, 2007). It is important to emphasise that this has to happen in a relationship where there is expectation of trust by the older person. A burglar who robs an elder does not commit elder abuse as there is no expectation of trust between the victim and the offender.

Elder abuse can be categorised into 5 types: physical abuse, psychological abuse, financial abuse, sexual abuse and neglect. Psychological abuse is the commonest form (11.6%), followed by financial abuse (6.8%), neglect (4.2%), physical abuse (2.6%) and sexual abuse (0.9%) in the community. Elder abuse in institutional setting has shown to have psychological abuse (32.5%) as the commonest followed by neglect (12%), physical abuse (9.3%) and sexual abuse 0.7%. There is insufficient data about financial abuse from institutional settings. The rates are higher as expected when considering reports by residents and their proxies. This is projected psychological abuse 33.4%, physical abuse 14.5%, financial abuse 13.8% neglect 11.6% and sexual abuse 0.7%. These figures are the tip of the iceberg.

PSYCHOLOGICAL OR EMOTIONAL ABUSE

This can be reflected when a person who is trusted upon to care and protect behaves in ways that causes anxiety, fear or distress to an older

adult. These behaviours could be verbal or non-verbal in nature. Psychological abuse may range from uttering hurtful words, yelling, threatening, or repeated ignorance. Restricting a person from meeting friends and relatives and pursuing delightful activities may be some other forms.

Emotional abuse can be detected with ease in the presence of the abuser. The victim will show the above mentioned emotions and will fail to have eye contact with the offender. Furthermore, they will look depressed, confused, withdrawn and may act agitated or violent. Signs of trauma like rocking back and forth may be present and may stop taking part in activities they used to enjoy. Difficulty in falling asleep or unintentional loss of weight are other physical symptoms.

PHYSICAL ABUSE

Intentional use of physical force by the person who is supposed to provide care and protection to the older person is identified as physical abuse. Physical manifestations such as skin abrasions, bruises, burns, cuts, tears, lacerations and scars of varying stages of healing can be detected by careful inspection. These may be present at unusual sites such as the back, chest or abdomen. There will be inadequate explanation as to how they were sustained. Furthermore, the patient may have accessories such as broken eyeglasses/frames or torn clothes. Ligature marks may be present due to past physical restrain. Chemical restrain, even oversedation is often used in care homes. Urinalysis may show myoglobinuria and increased serum creatinine kinase (CPK) due to rhabdomyolysis.

Older persons may attend with fractures. These can be non-fragility fractures in long bones and ribs or of spiral in shape. There could be a radiography of fractures of different temporality.

FINANCIAL ABUSE

The use of funds and assets allocated for the older person's care and/or protection been used for another person non-consensually amounts to financial abuse. An older person with intact mental capacity can make

decisions of their care, protection and finances, and can decide to give money and/or properties to another person. This is not financial abuse. Usually the healthcare professionals do not get involved in financial decisions but rather a bank manager or lawyer. Representative from the National Secretariate for Elders (NSE) can advise.

An older person with financial stability accompanied by late bill payments, interrupted utilities and short supply of provisions and medication, may reflect the possibility of ongoing abuse.

NEGLECT

Failure of a person who is in the role to protect and care for the older person failing to do so is defined as neglect. This could be intentional or unintentional. Older person may self-neglect as essentials cannot be acquired or due to abandonment.

The victim will have unwashed and unkempt hair, body and clothes. Head and body lice, skin rashes (e.g. scabies), malnourishment and lack of medical aids such as like eyeglasses, walker, dentures, hearing aid or medication, pressure ulcers or other preventable conditions are noteworthy. Living condition may be hazardous, unsafe, unclean and unsuitable for living. In extreme cases there may be sign of dehydration like high sodium levels, high urea levels, high uric acid levels or haemoconcentration with false high haemoglobin and packed cell volumes. Low cholesterol levels may be due to malnutrition.

SEXUAL ABUSE

Forced, unwanted or unconsented sexual acts could be verbal or behavioural.

An older person attending a healthcare facility complaining of pain, soreness, bleeding, bruising, lacerations of anogenital region or showing venereal diseases in oral, anal, genital regions should be assessed for sexual abuse. A detailed history including an explicit sexual aspect is essential.

RISK FACTORS

Understanding about the risk of being abused can help adoption of safeguarding measure to protect them. According to data collated by WHO from all available studies, 20 sub-categories are recognised. These include the presence of physical impairments, mental and neurological disorders, cognitive impairment, poor health and substance abuse. Low socio-economic status, low level of education, female gender, ethnic minority, younger age, unmarried or single person, employed, behavioural problems, low life satisfaction, homeownership, history of violence perpetration, irreligiosity, previous violence victimisation, and traditional cultural values.

When reviewing an older person, it is ideal to review along with the care giver and then without the care giver in the consultation. This will help recognise the risk factors in a care giver which places older person at risk. The burden on the care giver, care giver suffering from mental or neurological disorders. Care givers with low level of education and self-esteem, male gender, use of narcotics and a past history of violence perpetration are more likely to abuse older person under their care.

In relationships there can be identified risk factors. These include families with low social support, living with others or sharing accommodation, larger family size and poor family relationships. Older people living in urban community are more like to be abused than their counterparts.

PREVENTION

Detection of elder abuse can be done by conducting a comprehensive geriatric assessment (CGA) for older patients attending clinical services. Recognition of the at-risk groups and intervening will prevent the physical and mental damage they sustain by being abused. Education of the healthcare workers in the community to conduct a CGA or referral to a team to perform and discuss on a multidisciplinary team (MDT). Geriatricians should take referral from other specialties like orthopaedic, surgical, burns units, ambulance crew and general practitioners.

Support systems for care providers (caregiver support systems) will improve the care provided to older people and reduce the strain on family and care givers. Education is the corner stone of all these interventions. Furthermore, older people should be made aware about their legal rights; carer givers should also know their limits and how to ask for help when in trouble. General public should also be educated of limitations or problems older people are having and how they can help their neighbours, friends', and older relatives.

In Sri Lanka, the National Secretariate for elders (NSE) lead welfare for older people. This is placed comes under department of social services. There are care homes, day care centres maintained by central government as well as by the provincial governments. The NSE provide free eyeglasses, hearing-aids, financial support towards noncommunicable disease prevention, surgery of older persons with low income may need. Programs to strengthen rural committees dedicated for the welfare of older people are conducted. The project includes building houses, toilets for disabled and supply of equipment needed to improve functioning in the community like walking-aid.

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HELPING THOSE WITH ELDER ABUSE

Most victims of abuse do not come forward due to various reasons. They may have cognitive impairment and may forget the abuse they There may be fear of punishment if they complaint and/or repercussions to the perpetrator, who can be a family member. Therefore, it is important if we suspect of elder abuse to investigate in an MDT and take immediate action to safeguard the victims. We may have to admit the person to a hospital or short-term care facility, or delay discharging until the investigation is complete. We may need our forensic medical colleague to help understand some situations better and should refer when appropriate.

SAFEGUARDING TEAM

A multidisciplinary team led by a geriatrician to review the probable abuse could be carried out in the community or in hospital. The team should aim to protect the health, wellbeing, and rights of older person at risk enabling to live safely, free from abuse and neglect. Rejection of false accusations of loved ones and unnecessary separation, isolations and institutionalising of older people. We know certain conditions are commoner in older people. Fragility fracture are common and could occur with minimum trauma like turning in bed. Another is pressure sores. These occur in acute hospital settings and commoner in long-term care settings. Here it is important to decide beyond reasonable doubt whether the older person has suffered intentional neglect or whether there is failure to follow standard care. In patient with pressure ulcers there should be documented evidence of turning frequently to redistribute pressure points. Using pressure relieving mattresses and cushions as part of standard measure/care. Appropriate recognition and treatment of the ulcers when pressure damage noticed. Poor nutrition can lead to poor wound healing and the dietician should consider this when reviewing. Wasting could be due to a chronic illness, malignancy, or frailty. If the standard care is given, and medical causes excluded it should not be considered as abuse. Standard care includes ensuring person has teeth to bite and chew the food, or food is cut and given, or altered to a consistence that can be safely eaten. Weekly monitoring of weight, diet charts with nutritional supplements where needed and advise from a dietician.

A safeguarding team could include an elders right promoting officer or a representative of the NSE, a nursing officer, a mental health nurse, a psychiatrist, a dietician, a pharmacist and a physiotherapist. All medical notes from hospital admissions and community healthcare records should be accessible to the team. A safeguarding team should meet on a regular basis and review all cases referred. A case handler or the lead person taking the referral should take time to talk to older person, family, and carers as a fact-finding mission. Referrals should be encouraged from emergency department, ambulance crew, surgical

wards, gynaecological wards, fracture clinics and forensic medical officers.

By working together, we can recognise, timely intervene and make it safer for older people to enjoy the last years of their life.

Further reading

Elder abuse, World health organisation website

National secretariate for elders (NSE) website

Protection of the Rights of Elders Act, No 9 0f 2000.

Mental Capacity Act, 2009 UK.

16. Impact and burden on caregivers of old persons

Dr. Gayani Siriwardhana

Older people can be considered as important pillars in the society as they possess a wealth of knowledge, skills and experiences accumulated over the life span, and their contribution in providing wisdom and guidance to the younger generations is invaluable. However, older people also have unique needs due to changes in their abilities, functional level and social role posed by the process of aging. While the increased longevity and improved health status of the aging population represent a major accomplishment in 20th century, these increased aging population trends also present significant challenges at different levels. The level of capability and resourcefulness of the community to provide adequate care for the aging persons is one such major challenge identified.

CAREGIVING FOR OLDER PERSONS

Old age is associated with deterioration of physical and cognitive abilities and development of age related health complications which compromises the old person's ability to care for themselves and make them more dependent on others. The physical and cognitive frailty associated with old age may become further worsened with the development of health problems such as cardio vascular and cerebrovascular events, Parkinson's disease, arthritis, chronic pain conditions, and mental health issues such as dementia and depression. Caregiving involves provision of physical and emotional support, assistance with activities of daily living and provision of basic medical care for old individuals with the aim of improving their quality of life. Caregiving for older people differ from other forms of caregiving due to many factors. The longer duration of caregiving, high chances of progressive deterioration of the physical abilities and health status with minimal chances of complete recovery, associated cognitive deficits and high risk of developing irreversible health complications by old age care recipients are some of the challenges faced by the caregivers.

CAREGIVING IN THE SRI LANKAN SETTING

Various socio-cultural-economic factors have affected caregiving in the Sri Lankan context. Family is the traditional social institution or the 'backbone' of caregiving for old people living in the community in most countries. This tradition is quite common in the developing world and many countries like Sri Lanka where formal residential or community care facilities for old people are sparse. In that context, we see that a significant number of young and middle aged adults being forced to adopt the role of "informal caregivers". An informal care giver can be defined as any person such as a family member, friend or a neighbour, who is providing regular, on-going assistance to another person without a payment.

In the Sri Lankan setting, a combination of religious, cultural and social norms plays an important role in family based caregiving. Older relatives are often respected and valued by the younger generation. Caring for them is considered as a moral obligation. According to a survey conducted by the ministry of social welfare, a significant majority (73.3%) with disability in Sri Lanka are cared for, by family members who are informal caregivers. Twice as many women are in caregiving roles for their elderly relatives with dementia, compared to men.

ROLE OF FAMILY CAREGIVERS

Caregiving for older individuals consists of broad domains of role obligations ranging from provision of basic assistance for activities of daily living, to advocacy and care coordination with other available medical and social support systems. These role obligations may differ depending on the physical and cognitive capabilities of the care recipient.

The broad domains of role obligations of a caregiver and the multiple tasks under each domain are listed below.

- Assistance with household tasks:
  - Meal preparation
  - Shopping
  - Transportation

- Laundry and other household maintenance chores
- Financial management

- Self-care, supervision, and mobility
  - Bathing and grooming
  - Dressing
  - Feeding
  - Toileting
  - Mobilization

- Emotional and social support
  - Provision of companionship
  - Validation of old person's concerns
  - Assistance with management of negative emotional responses and behavioural disturbances (especially in old people with mental health comorbidities such as dementia and depression)
  - Facilitate social interactions
  - Engagement in suitable leisure and recreational activities
  - Management family conflicts

- General health care and medical care
  - Scheduling and accompanying for medical appointments
  - Responding to acute health emergencies
  - Supervision of medication adherence at home
  - Provision of wound care, basic physiotherapy and other health care at home
  - Preparation of food for special diets recommended by medical professionals
  - Encouragement of healthy lifestyle
  - Old age friendly home environment modifications (instalment of commodes, grab bars)
  - Provision of amenities and equipment to alleviate disabilities as recommended by health professionals (wheel chairs, crutches, spectacles, hearing aids)

- Advocacy and care coordination

- Communication with relevant health care professionals on behalf of the old person and contribution for healthcare decision making
- Seeking support from other social support systems
- Negotiating with other family members regarding their respective roles

- Decision making and surrogacy
  - Handling financial and legal matters on behalf of the old person
  - Management of properties belonging to the old person
  - Participation in treatment decisions and advanced planning

The caregiver's knowledge, skills, values, preferences and the availability of supports determine the quality of care provided under each domain.

EXPERIENCES OF CAREGIVERS OF OLD PEOPLE

The experiences of caregivers of older people are diverse and depend on many factors. Although studies on caregiving have mainly focused on the negative impacts on the caregivers, it has been demonstrated that there are positive outcomes too. Positive emotional states such as satisfaction, personal growth and a sense of fulfilment have been experienced by many, especially children looking after their elderly parents. However, the negative impacts or the burden on the caregivers outweigh the positive impacts in most cases due to the complex nature of the caregiving process and its effects on the caregiver's life. Some caregivers have reported mixed states involving both positive and negative impacts related to caregiving. The complex interactions between the caregiver's perceptions, the characteristics of the old person and his or her health status, the nature of the relationship between the caregiver and the recipient, and the availability of supports for the caregiver contributes to the experiences of the caregiver.

NEGATIVE IMPACTS ON THE CAREGIVER

As mentioned above, long term caregivers of old people may experience a variety of stressors related to their caregiving role.

Caregiving has its effects not only on the caregiver's resources such as time, finances and social relationships, but also on their physical and mental wellbeing. It is imperative to understand and identify these negative impacts in order to improve the quality of life of both the caregiver and the care recipient. The effects on the caregivers are listed below.

- Physical effects:
  - Sleep deprivation
  - Injuries related physical activities involved in caregiving (E.g.: muscle sprains due to frequent lifting of the patient)
  - Lack of time to attend to personal care
  - Weight loss
  - Neglect of caregiver's health needs

- Psychological effects:
  - Anxiety related to the wellbeing of the old person who is being cared for
  - Distress due to behavioural disturbances of mentally ill old persons
  - Sense of bereavement due to changes in the relationship dynamics due to cognitive deficits in the care recipient
  - Stress due to diverse work demands of the caring role
  - Feelings of resentment alternating with guilt
  - Depression

- Social effects:
  - Changes in the caregiver's social role
  - Possible loss of employment, social interactions and leisure time activities
  - Social isolation
  - Strain on the relationship with other family members and friends
  - Financial stressors

CAREGIVER BURDEN AND BURNOUT

Caregiver burden and burnout are specific terminologies used to describe the negative consequences on caregivers.

'Caregiver burden' is a state resulting from long term caregiving, threatening the physical or psychological wellbeing of the caregiver. It can be defined as a multidimensional response to physical, psychological, social, and financial stressors associated with the caregiving experience. Unfortunately, caregiver burden has been largely overlooked by clinicians due to their primary focus on the patient's wellbeing, neglecting the physical and psychological needs of the caregivers. Hence informal caregivers have been often called 'the invisible patients', which highlights the importance of addressing their concerns.

If not addressed properly, continuing caregiver burden may progress to a level of extreme fatigue in the caregiver, known as 'caregiver burnout'. It will pose considerable negative physical and emotional consequences on the caregiver, and caregiving may no longer be a healthy option for both the caregiver and the recipient in that context. It has been found that care giver burnout is associated with reduced level of care for the patient, premature placement of patients in long term care facilities and even elderly abuse.

FACTORS AFFECTING THE BURDEN ON THE CAREGIVERS

Unique risk factors for caregiver burden which are related to the caregiver, the care recipient and the caregiving process itself have been identified.

Research have determined that female caregivers are more prone to develop negative psychological impacts compared to their male counterparts. Other caregiver related risk factors include co-residence with the care recipient, not having a choice in being a caregiver, low educational attainment, unemployment and the presence of pre-existing or current mental health issues such as depression. Caregiver's personality characteristics and perceptions about the care giving role also influence their experiences. Caregivers who are forced to adopt the

caregiving role by a sense of duty, guilt, or socio-cultural norms are more likely to resent their role and suffer greater psychological distress whilst those who identify more beneficial components of their role experience a lesser amount of burden.

The care recipient factors include significant impairment of activities of daily living, cognitive deficits, communication problems, comorbid mental health issues and behavioural disturbances. Several studies have shown that patients suffering from dementia pose the greatest stress on carers. Anger outbursts, changes in eating and sleeping habits, wondering behaviour and disinhibition are the common behavioural disturbances observed in patients with dementia. Caregivers have reported that aggression, incontinence and behavioural disturbances at night are the most distressing problems for them. Behaviour problems in the care recipient have shown a stronger association with caregiver burden than the other risk factors discussed above.

Other factors related to the caregiving include higher number of hours spent in the caregiving role, lack of access to social support systems and financial stressors. In addition, having to give care for a direct family member, partner or a close friend, having to provide emotional support for the care recipient, and being in the caregiver role for one year or longer have been found to be associated with an emotional disorder in the caregiver.

Identification of these unique risk factors is an important component in the assessment. It will help mobilization of available resources with the aim of minimizing caregiver burden.

ASSESSMENT OF CAREGIVER BURDEN

A comprehensive assessment of the carers' concerns and needs should be an integral part of a holistic care package provided for elderly patients with long term physical and cognitive disabilities. Adequate time should be spent during each consultation with the caregivers and they should be given the opportunity to voice their concerns. Their strengths should be appreciated while acknowledging their difficulties.

A comprehensive assessment should explore the physical, psychological, social and financial impacts on the care giver.

Many tools have been developed to objectively assess caregiver burden. These include The Caregiver Hassles Scale, Behavioural Assessment Scale of Later Life, The Care giving Burden Scale and The Zarit Burden Interview. The latter is the most widely referenced scale in studies of caregiver burden, especially in patients with dementia. It is a 29 item self-report instrument with a revised version containing 22 items. However, these scales are mostly reserved for research purposes and rarely utilized in the clinical setting.

HEALTH CARE PROFESSIONALS' ROLE IN MANAGING CAREGIVER BURDEN

Early identification of carer stress and offering prompt and appropriate support for caregivers tend to improve the caregivers' well-being as well as the overall quality of the care given. Identifying the problems in the caregiving experience which contributes for the care giver burden and offering suitable supports as well as exploring specific needs of the care giver are important. A multidisciplinary approach should be adopted with the involvement of social services, and other relevant governmental and non-governmental organizations when addressing complex social and financial needs of the care givers.

Key components of the health care professional's role in this regard are as follows;

- Comprehensive assessment and optimal management of the physical, cognitive and behavioural symptoms of the old person
- Multidisciplinary team involvement with the participation of occupational therapists, psychiatry social workers and community psychiatry nursing officers in order to identify complex management needs of the patient and care givers (Functional assessments / Needs assessments/ Carer burden assessments)
- Education of carers and helping them to develop new caring tips and coping strategies as the disease progresses

- Offering stress management techniques for carers – relaxation, meditation, physical exercises
- Identifying physical and psychological co-morbidities of carers and offering treatment
- Offering brief inward admissions for patients with behavioural disturbances with the aim of proving respite for the care givers
- Linking with the relevant government and non-governmental organizations to develop and improve community care facilities – day programs, in-home assistance, visiting nurses, residential care homes etc.
- Strengthening support systems for care givers by linking them with relevant authorities – financial benefits such as disability support allowances, paid leave from work, flexible work hours for carers of old people with chronic illnesses
- Facilitating experience and knowledge sharing among care givers through carer groups
- Collaboration with organizations involved in elderly care (E.g.: Elderly Secretariat, Social Services Department, NGOs) in order to support elderly patients – providing walking aids, wheel chairs, hearing aids, spectacles etc.

Services available for elderly patients and caregivers will be further discussed in detail in another chapter.

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17. Ethical and legal issues in old age

Dr. Pushpa Ranasinghe, Dr. Iresh Perera

Old age is a distinct phase of life with a multitude of opportunities, unprecedented changes as well as complex challenges such as interruptions in physical and psychological wellbeing. The consequences will have an impact not only on medical point of view, but also on many others including ethical, social and legal aspects. At times it may not be possible to understand and resolve the full gamut of matters as there could be several viewpoints or different perspectives. Some frames of references, where one seeks the guidance to rectify the obstacles, may not be absolutes when it comes to old age.

Several unique developments in old age bring about special ethical dilemmas and legal issues. Cognitive deficits or decline due to various causes can impede the capacity to take decisions. This will hinder many older adults from exercising their will or autonomy at many junctures in late life. Some of those encompass medical decisions like consent for admission to a care facility, refusal of treatment, refusal of resuscitation in future and giving consent for enrolment in research studies. Furthermore, to decide on the presence of the capacity to make a 'will' or the testamentary capacity, it requires a specific assessment from medical point of view. There can be undue influences from external parties in those occasions, as seniors may be dependent on those parties for care and other necessities. Decisions on palliative care and end of life care of an older adult may face ethical and legal dilemmas. Covert medication as well as elder abuse have direct implications on medico-legal and ethical aspects. The opinions and pre-formed views of the treating team may also influence the decision-making about the management.

Ethical principles are of paramount importance when it comes to the care of the seniors. The framework of ethics is the guidance for us to take morally correct decisions. Those are protected by the legal provisions as well. Autonomy is one of the cornerstone ethical principle which stipulates the protection of a subject's right to take own decisions

and to execute free will. The restriction of a free will should happen only when there is a potential harm to the society. However, the assumption that the capacity is present to take a decision about anything related to oneself may not be correct in some instances. When it comes to the decision-making on health care of older adults, this important question can arise. The capacity is specific to the decision for which the individual has to execute his free will and also specific to the time of the assessment. If an individual has an impaired capacity to take a decision, he or she will not be able decide for self freely or to have autonomy and there could be potential harm to the person or the society. Hence, the presence of capacity has a pivotal role in decision-making related to medial matters. The consequences of the decision and their seriousness will further enhance the significance of the state of the capacity. Old age health care is one important area where there could be frequent instances with impaired or lack of capacity in the service consumers.

Capacity simply indicates the capability to make a logical or rational decision. This includes the ability to appreciate the nature of one's actions as well as the impact that the actions will have on oneself and others. Owing to its complexity, there is no simple method or test to decide upon the state of capacity. Since the capacity depends on the nature of the decision that needs to be taken, several types exist. Although there is no definition given from a legal point of view, the concept of capacity has been debated on many occasions with regard to medial decisions. General capacity mainly relies upon the individual's awareness of the situation, his or her factual understanding of the issue, appreciation of likely consequences and knowing the extent of demand on the person. Specific competencies will vary according to the requirement of the situation. A good example is patient's voluntary wish or refusal to undergo any medical treatment or procedure, which is referred to as consent.

As aforementioned, this capacity will be specific to the time of the consent making process and for the specific decision. Possessing the capacity to give consent depends on a completion of five factors at the given time period. The person should be able to understand the information given, he or she should be able to retain the information

for a sufficient time period to take the decision, should be able to weigh the pros and cons of the options available, should be able to come to a rational conclusion and finally to convey the decision clearly about the matter at hand. All these five aspects need to be accomplished in order to have capacity and hence to execute one's wish. When it comes to informed consent, all the information relevant to the intervention and the decision should be given to the patient including alternative options.

Although one tends to assume that the service consumers of the health care system have the necessary capacity, old age is a clear exception for a few reasons. Any one or several of the above steps in the process can be defective in an older person and thereby hinder the ability to make a rational decision.

There are common encounters in every day clinical practice where an older adult can have impaired capacity. In dementia, they suffer from cognitive decline and loss of functional independency. Due to the cognitive deficits, the process of decision making can be defective in more than one way. For example, impairment in executive functions can affect insight, judgment and impulse control. Even the presence of mild cognitive impairment (objective cognitive decline with functional independency) can affect the capacity depending on the seriousness of the decision one has to make.

Seniors suffering from depression may have deficits in multiple cognitive domains. Also the depressive mood state can impair the patients' ability to judge the information available and they may perceive only the negative consequences. Furthermore, these affective statuses make the older adults more prone to undue influences.

Psychosis in older adults due to any underlying reason can affect the capacity to consent in several ways. Impaired rational judgement is one way the psychotic symptoms can distort perceived reality. Delusions with relation to any component of the decision making process, for example a persecutory delusion about the treating team, can affect the capacity.

Substance use disorders, especially alcohol related disorders in older adults influence the process of decision making. Acute intoxication and the effects of chronic use have impacts on judgment and other cognitive functions. Organic or medical disorders which impair the brain functions and delirium states also impede an individual's capacity.

However, despite having any of the above conditions, one can still have the capacity to take a certain decision. A causal nexus must exist between the mental deficit and decision of concern. One must always remember that the capacity is specific to the decision and limited to the time of the decision making process.

When an older adult is considered to lack capacity to take a particular decision at a given point in time, it could lead to a dilemma and a challenge. As an example, if the person does not have the capacity to decide on a treatment, the treating team may have to consider several conflicting factors to come to a conclusion. These will also depend on the seriousness and the consequences of the decision.

The close family members or relatives cannot decide on behalf of the individual unless they have been given the power of proxy consent. Proxy consent is a legal process in which people delegate their legal right to medical treatment to another person. Power of attorney and the 'living will' are the most common types of proxy consent types those are being practiced. However, the person who is delegating his or her right of consent must be both medically and legally competent at that time. The judicial system or the courts also can appoint a guardian to act or take decisions on behalf of another person who lacks capacity, and this is called legal guardianship. The law in Sri Lanka doesn't have necessary provisions for some of the above at present.

At this juncture, the guidance for the treating team to act upon the best interest of the patient will be the ethical principles including beneficence and non-maleficence. Available evidence, clinical expertise and values or expectations of the patient should be given an equal significance. The close relatives and the family are valuable sources with regard to evaluating the values and expectations of the person. A collective decision after discussing with all relevant parties will minimize

the conflicts and prevent future legal interferences. Prognosis of the disease, effectiveness of the intervention and the potential hazards of the treatments should also be accounted for the decision. The treating team should be mindful and reflective about their own, pre-formed pessimistic schemas about the older adult and about the interference of own values into the decision making process. Clear and professional documentation about the capacity, decisions and the reasoning will further mitigate the conflicting consequences.

Testamentary capacity is a special type of capacity and a legal status, which indicates the ability to exercise one's autonomy with regard to executing a 'will'. The testator or testatrix (person who is executing a will, male or female) can be an older adult. Hence the capacity at the time of writing the will becomes an important factor, especially with conflicting interactions of the family members and with significant number of properties. At times medical team have to assist the courts by means of expert opinions. The testator who is executing the will should be able to understand the nature of the will, the consequences and impact of the distribution of the assets, the extent of and the current values of one's assets and should have the knowledge about persons who have a reasonable claim to be beneficiaries. He or she should also have the ability to express wishes clearly and consistently in an orderly plan of disposition. All the above mentioned psychological morbidities can affect any component of the competency and even a mild cognitive impairment can affect the final decisions depending on the extent of the involved properties and parties.

The assessment party should also be vigilant about the presence of undue influences on decisions as they are highly vulnerable. The cues those suggest undue influence can be many. Presence of unnatural provisions in the will, the proposed distribution not reflecting the true wishes of the testator, beneficiary had actively participated or initiated the procurement of the will and dramatic changes or significant deviations from the pattern identified in prior wills or wishes are indicators of undue influence. Evidence of a pathological or dependent relationship with a formal or informal caregiver where the testator is vulnerable, will further indicate such a possibility. As an expert assessor

or witness, a medical team member may have to assess the testamentary capacity when cognition or the mental state is a concern and when a suspicion of undue influence arises. The expert should be able to formulate a comprehensive outline of clinical and environmental factors operating in a given scenario and to offer an opinion for the courts to consider.

Elder abuse or mistreatment is another important aspect in old age care that can be obscured to the routine assessment. The possibilities can vary from neglect of care to deliberate mental, physical, emotional, financial and sexual abuse. Neglect of care includes failure to provide proper food, clothing, housing, hygiene and medical care. Neglect is often difficult to detect and investigate when the patient is accompanied by a care-giver or a close family member. The presence of one form of abuse or even a small clinical suspicion should prompt the investigation about the full scope of possible mistreatments. Any first contact with the medical services by a person who is vulnerable, will be an ideal chance to look in to this matter. Poor hygiene, burns, bruises, lacerations, fractures, application of restraints, weight loss and dehydration are some of the forensic markers which should prompt further careful inquiries and assessments. Presence of medical, psychological and cognitive morbidities, difficult behaviours, poor social and financial support to the patient as well as the care-givers are all possible contributory and causative factors for the elder abuse. Hence holistic approach with mobilization of social services are an important aspect of management of any old age adult who has made contact with the medical services. Legal provisions are also in place to protect the older adults against abuse. Protection of the Rights of Elders Act, No. 9 of 2000 and Prevention of Domestic Violence Act, No. 34 of 2005 are main laws among few. With the combined care from medical and legal aspects, the managing team should be empathetic towards both the victim of the elder abuse and the care-givers.

Covert treatment with medication is another challenging clinical conundrum in old age. Most often, those are psychotropic medications given for difficult behaviours and psychosis. They refuse interventions due to lack of insight about the condition or do not have the capacity

to consent for treatment. Since these are not acutely life saving measures, the treating team has to consider several different viewpoints. Although not acutely life-saving, most often than not, the target symptoms will lead to multiple negative consequences. Poor quality of life of both the patient and the care-givers, vulnerability to abuse, institutionalization and eventually even death can be some detrimental outcomes among many. Conflicting ethical principles should be discussed with all the relevant parties with clear documentation. A second opinion or an ethical committee review should be taken where possible and relevant. Rarely in some cases, the treating team may have to take legal opinion in order to resolve the discord.

Consent for research studies, especially for those evaluating interventions for older adult is another area that needs careful ethical and legal considerations. Lack of capacity to give consent for research studies may hinder the enrolment of the older adults, resulting in lack of proper evidence that could benefit many other similar older patients. On the other hand, due to the same lack of capacity, many ethical concerns can arise including abuse, iatrogenic harm, biases and manipulations within the research activities.

Furthermore, disclosing a diagnosis of relentlessly progressive and debilitating illness to the patient, driving an automobile, withdrawal of life sustaining treatment, organ donation, palliative care, end of life care and euthanasia are ethically and legally conflicting areas in older adults. Those areas need further discussions, clarifications, development of concepts and amalgamation of medical and legal expertise.

Ethical concepts and legal implications should be considered as fundamental components in old age care. More discussion and developments in those areas will lead to advancement in the delivery of holistic care to the old age service consumers. Old age related negative schemas, therapeutic nihilism, practice of defensive medicine, stigma and ageism have also contributed to the deficits in above aspects. These should be tackled and defeated through proper scientific education of all involved parties and best practice examples. Future policy and

service developments must incorporate ethical and legal aspects in order to cater the best possible health care for our growing geriatric population.

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18. Providing social support for older persons with mental illness in Sri Lanka

Dr. Anula Rathnayake

A significant growth of the older population in developing countries is noticed recently compared to developed countries. In 1981, there were seven younger persons on average to look after one older person, but this number dropped to four persons in 2012. The mechanisms of family support and care of the old people have been gradually weakening recently due to many reasons.

CHALLENGES AND IDENTIFIED PRACTICAL ISSUES RELATED TO CARING FOR THE ELDERS

1. *Lack of family support* - Most of the older persons live with their family members in Sri Lanka, and only 1% live in elders' homes and other types of institutions as of 2012. Though the majority of the old persons are still looked after by their family members, this support is now under pressure due to many reasons, such as shrinking family size, internal and international migration for work, and increased female participation in the labour force.

2. *Absence of gearing the current structure of the retirement and pension system to address older persons' issues* - The retirement system in Sri Lanka currently covers 25% of the working-age population, and does not assist poor people to fulfil their needs. Old people's pension is not adequate to meet all the basic needs of them.

3. *Lack of investment in health and other infrastructure facilities* - There is a lack of increased investment in health, retirement homes, hospitals, and leisure activities for elders in Sri Lanka. Furthermore, deficiencies in integration of acute and long-term care systems and quality care for people who are unable to care for themselves, at a reasonable cost.

IDENTIFIED PRACTICAL ISSUES

The following practical issues have been identified related to the caring of old people in Sri Lanka.

- Lack of elders' homes/day care centres with satisfactory facilities
- Poor institutional support for older people without pension or other financial ability/property -
- Poor family support for older people with mental illnesses
- No special elders' home/caring system for elders with dementia
- No support programs or help family members/caregivers of the older people
- Less privilege for older people without a permanent address or a guardian
- Not having an enough and stable income
- Lack of support for elderly people living alone
- A certain age limit has to be passed to get social benefits or to enter an elderly home

PSYCHOSOCIAL CARE AND SUPPORT

Social support plays a significant role in maintaining health and decreasing susceptibility to illness among the elders. Social support can be defined as the affection, companionship, care and assistance provided by the family members, friends, and other individuals for the older person. There is a relationship between social support and social isolation, stressors, mental disturbances, depressive symptoms, and lifestyle. Social support is also important to maintain and promote healthy lifestyle interventions.

In providing psychosocial care and support for old persons, following intervention pyramid is very useful.

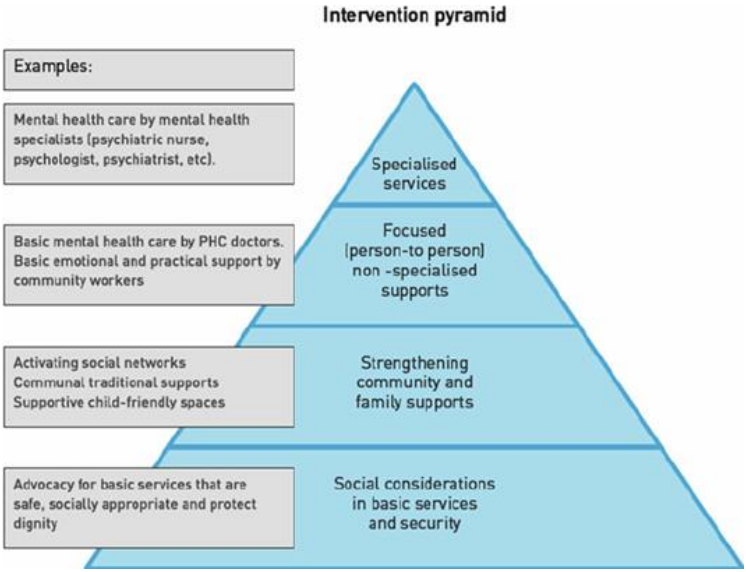

Figure 19.1 (Source: Weissbecker et al., 2020)

Figure 19.1 -

The majority of the old persons and their families need the first and second stage interventions to enhance their social wellbeing. Advocacy is very important for these people, together with the support from community workers. Strengthening the family and community support can be done in the second stage of the intervention pyramid, to ensure affection, companionship and care. Social workers' support and intervention are very useful in this stage. A smaller percentage of the old population may need more focused and specialized support interventions with particularly stressful reactions, and they can be supported by the general practitioners and social workers. Some older persons might need specialized intervention for significant distress or behavioural issues that disrupt their daily functioning. They need psychiatrists, psychologists, psychiatric nurses, or social workers to intervene to minimize their problems.

Caregivers also psychosocial care and support to minimize their psychosocial issues and promote healthy lifestyles. They need holistic

support in many areas such as employment, training, and education, health services, support to obtain respite and short breaks, advocacy, and introducing or establishing care giver support groups are very significant.

- The following preventive interventions involving the optimization of social support are also very important in the support for old persons to enhance their wellbeing.
- Focusing on informal support- Family support centres, neighbourhood support systems, family clusters, etc.
- Optimizing the supportive networks - Upgrading the supportive provisions available from ongoing social networks, strengthening the capacity of social networks to provide crisis support.
- Collaboration with self-help groups- Community mental health workers can initiate the support groups and cultivate the supportive provisions available in the natural environment.
- Designing support systems for the chronically mentally ill.

LAWS, POLICIES, AND PLANS RELATED TO CARING FOR OLDER PERSONS

There are several laws, policies, and plans which are directly and indirectly related to elderly care. Some of them are as follows.

- The Protection of the Rights of Elders Act, No.9 of 2000- This Act established the National Council for Elders (NCE) and National Secretariat for Elders (NSE).
- The Protection of the Rights of Elders (Amendment) Act, No.5 of 2011
- The Protection of the Rights of Persons with Disabilities Act, No. 28 of 1996- This Act covers the disabled elders in the country in addition to the disabled people in Sri Lanka.
- The Constitution of Sri Lanka- This Constitution stipulates the right to access health care for all citizens in Sri Lanka.
- National Charter for Senior Citizens- 2006- This Charter was adopted by the Cabinet, and it defines the rights and responsibilities of elderly persons in Sri Lanka.

- National Policy for Senior Citizens-2006- This policy also was adopted by the Cabinet in 2006.
- National Elderly Health Policy of Sri Lanka 2017

CURRENTLY AVAILABLE SERVICES FOR THE OLDER PEOPLE

Government sector

- *National Secretariat for Elders:*
  This Secretariat and the National Council for Elders was established under the Protection of the Rights of Elders Act No. 9 of 2000. Multiple services are being provided by this secretariat. These include:
  - Registration of village level, provincial level, and district level elders committees
  - Training of elder caretakers
  - Implementations of psychological counselling programs to improve mental and spiritual wellbeing of the elderly people
  - Senior Citizens Allowance (*Wedihiti Saviyata Jeshta Purawesi Deemanava)*- This is the largest income transfer scheme available for elders living in poverty in Sri Lanka. It was established in 2012 and the monthly allowance is SLRS 2000/-
  - Issuing elders' ID cards
  - Conducting training and awareness programs (e.g. exercises programs, retirement awareness programs, etc.)
  - Providing lenses and hearing aids free of charge
  - Commemoration of International elders' day
  - Providing financial assistance for elders' home
  - Elders Cover Sponsorship Scheme (*Wedihiti Avarana* Sponsorship Scheme)- Rs 500 or Rs 250. This is done through the Divisional Secretariat. Anyone can contribute to this program. Recipients are paid Rs 1000/- for four months.
  - Maintenance Board of the Elders- Older persons who are at the age of 60 and above and neglected by their children can complain to this Board and claim the maintenance from their children. The application can be obtained from the Divisional Secretariats. But National Secretariat for the Elders does not have

the power to settle down family disputes and property-related issues.

- *Samurdhi* - This is the government's flagship poverty alleviation transfer scheme, and this provides a welfare grant to eligible households. Eighteen percent of the population aged 65 years and above who lived in a household received Samurdhi in 2016.
- *Pinpadi* - This is a public assistance program, operated by the Ministry of Social Empowerment and Welfare. This is a small monthly allowance (LKR 150-250) given to a number of identified poor households.
- Pension or Provident Fund Scheme- These two perform differently
- Farmers' Pension Scheme- This was established by the law in 1987. This is a defined benefit pension from the age of 60 years. Also, this was given to all farmers who have done a fixed contribution to the farming.
- Fishermen's Pension Scheme- This was established by the Fishermen's Pension and Social Security Benefit Scheme Act no. 23 of 1990. Contributions to this fund range from LKR 130- to 690. Benefits vary between LKR 1000 - 4166.
- Pensions for the self-employed- This was established by the Social Security Board (SSB) Act No.17 of 1996. Self-employed persons during old age and disability are provided these benefits.
- Providing finance and health instruments – Conducted by the Social Service Ministry through the Social Service Officer allocated to the Divisional Secretariats.
- Conducting few elderly homes to provide residence for needy people.

Private sector

- HelpAge- Conducting mobile medical and eye care unit, paid homes, HelpAge Micro Finance fund, etc.

- Sarvodaya- Support to the Social Service Ministry to conduct the Community Based Rehabilitation Programmes, Conducting elderly homes.
- Private elderly homes conducted by several small-scale private institutions, religious institutions, and individuals

FUTURE NEEDS

- Retirement villages, nursing homes, in-house healthcare and leisure activities
- Support to supply essential infrastructure facilities such as electricity, public transport, water supply, etc.
- Strengthen social security (one in five people in the world has adequate coverage and more than half of the world's population does not have social security protection at all)
- Good wealth management plan during the working life
- Improving regulation of accessibility and safety measures.
- Establishing community support centres
- Establishing day-care centres and respite services
- Empowering the religious institutions and organizations through funding and training to support elders

With the rapid increase of the old aged population and erosion of traditional family support system, developing formal support systems are very essential to care for the elders.

evidence has shown that social support helps to improve the old aged persons' healthy lifestyles and wellbeing. Therefore, improving the currently available rules and regulations, services, establishing the formal support systems and institutions, enhancing social support are very essential to care for the elderly people and enhance their quality of life in Sri Lanka.

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