Managerial Dimensions for Special Groups

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Content

Chapter - 1

Introduction to People with special needs and mentally challenged

In clinical diagnostic and functional development, the term Special needs (or additional needs) describes individuals who require assistance for disabilities that may be medical, mental, or psychological.

Concepts and Definition of People with special needs

A person who is unable or limited in carrying out activities that he or she can do due to congenital or long-term physical/mental disabilities, is identified as a person with special need.

Definition of special needs

Special need is a term used in clinical Diagnostic and special development to describe individuals who require assistance for disabilities that may be medical, mental, or psychological.

People with special needs are people who need special help for care, sample because they are physically or mentally disabled. Individual requirements of a person with a disadvantage it background or a mental, emotional ill or physical disability or high risk of developing one, under this category.

Mentally challenged children

Mentally challenged children are unable to fulfil their intellectual potential, mental capacities that lag behind dose of their peers. Mental retardation has many different causes, variable and paste, identify it is more of a process of classification than a diagnosis of a disease. Mental retardation also had a white respect. at one and there are my delete retarded people with such a high learning capacity that they are of a no longer identified as mentally challenged once they reach adulthood., other and there are people so mentally disabled that they can only learn the most basic skills.

Classification

There are three common mental retardation. Mildly retarded individuals

have a mental age of 8 to 12. Considered educated, that are capable of mastering some Academy concepts. Retarded individuals have a mental age of 52, conceded trainable. Not capable of learning academic subjects. Will retarded people have a very limited capacity to learn? PR institutionalized and required lifelong.

Mentally challenged children are slow to, process through and have an impaired adaptive ability. They may also be slow in their physical development. American Academy of child and Adolescent Psychology states that, to be diagnosed as mentally challenged, a child has to have both a significantly low IQ and serious difficulties functioning in his day to day life. Within IQ of 75 a lower falls into the mentally challenged range.

Signs and symptoms

Intellectual disability or mental disability becomes apparent during childhood and involves deficits in mental abilities, social skills, and core activities of daily living (ADLs) when compared to same-aged peers. There often are no physical signs of mild forms of ID, although there may be characteristic physical traits when it is associated with a genetic disorder (e.g., Down syndrome).

The level of impairment ranges in severity for each person. Some of the early signs can include:

- Delays in reaching, or failure to achieve milestones in motor skills development (sitting, crawling, walking)
- Slowness learning to talk, or continued difficulties with speech and language skills after starting to talk
- Difficulty with self-help and self-care skills (e.g., getting dressed, washing, and feeding themselves)
- Poor planning or problem-solving abilities
- Behavioural and social problems
- Failure to grow intellectually, or continued infant childlike behavior
- Problems keeping up in school
- Failure to adapt or adjust to new situations
- Difficulty understanding and following social rules

Elderly people

The ageing process is of course a biological reality which has its own dynamic, largely beyond human control. However, it is also subject to the constructions by which each society makes sense of old age. In the developed world, chronological time plays a paramount role. The age of 60 or 65, roughly equivalent to retirement ages in most developed countries, is said to be the beginning of old age. In many parts of the developing world, chronological time has little or no importance in the meaning of old age. Other socially constructed meanings of age are more significant such as the roles assigned to older people; in some cases, it is the loss of roles accompanying physical decline which is significant in defining old age.

Aging is basically a complex biophysical phenomenon which is characterized by and alteration in organ functions, down or reflex, and a decrease in physical and mental abilities over, which result in one's inability to cope up with stress and environment.

The world is going through a demographic transition. During the last few decades, there has been a tremendous increase in the population of elderly persons in the world in proportion to total population. The reasons for this are multifactorial. Socio economic progress, lifestyle, environmental conditions, availability of high quality medical, sketch introduction of Y train, saving drugs new surgical technique and immunization programs have drastically reduced mortality rate in all countries and increased life expectancy. Simultaneously fertility is falling and as a result, we have the phenomenon of population ageing.

Common health conditions associated with ageing

Common conditions in older age include hearing loss, cataracts and refractive errors, back and neck pain and osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia. Furthermore, as people age, they are more likely to experience several conditions at the same time.

Older age is also characterized by the emergence of several complex health states that tend to occur only later in life and that do not fall into discrete disease categories. These are commonly called geriatric syndromes**.** They are often the consequence of multiple underlying factors and include frailty, urinary incontinence, falls, delirium and pressure ulcers.

Geriatric syndromes appear to be better predictors of death than the

presence or number of specific diseases. Yet outside of countries that have developed geriatric medicine as a specialty, they are often overlooked in traditionally structured health services and in epidemiological research.

Factors influencing Healthy Ageing

Although some of the variations in older people's health are genetic, much is due to people's physical and social environments – including their homes, neighbourhoods, and communities, as well as their personal characteristics – such as their sex, ethnicity, or socioeconomic status.

These factors start to influence the ageing process at an early stage. The environments that people live in as children – or even as developing foetuses – combined with their personal characteristics, have long-term effects on how they age.

Environments also have an important influence on the development and maintenance of healthy behaviours. Maintaining healthy behaviours throughout life, particularly eating a balanced diet, engaging in regular physical activity, and refraining from tobacco use all contribute to reducing the risk of non-communicable diseases and improving physical and mental capacity.

Behaviours also remain important in older age. Strength training to maintain muscle mass and good nutrition can both help to preserve cognitive function, delay care dependency, and reverse frailty.

Supportive environments enable people to do what is important to them, despite losses in capacity. The availability of safe and accessible public buildings and transport, and environments that are easy to walk around are examples of supportive environments.

Challenges in responding to population ageing

Diversity in older age

There is no 'typical' older person. Some 80-year-olds have physical and mental capacities similar to many 20-year-olds. Other people experience significant declines in physical and mental capacities at much younger ages. A comprehensive public health response must address this wide range of older people's experiences and needs.

Health inequities

The diversity seen in older age is not random. A large part arises from people's physical and social environments and the impact of these

environments on their opportunities and health behaviour. The relationship we have with our environments is skewed by personal characteristics such as the family we were born into, our sex and our ethnicity, leading to inequalities in health. A significant proportion of the diversity in older age is due to the cumulative impact of these health inequities across the life course. Public health policy must be crafted to reduce, rather than reinforce, these inequities.

Outdated and ageist stereotypes

Older people are often assumed to be frail or dependent, and a burden to society. Public health, and society as a whole, need to address these and other ageist attitudes, which can lead to discrimination, affect the way policies are developed and the opportunities older people have to experience Healthy Aging**.**

A rapidly changing world

Globalization, technological developments (e.g. in transport and communication), urbanization, migration and changing gender norms are influencing the lives of older people in direct and indirect ways. For example, although the number of surviving generations in a family has increased, today these generations are more likely than in the past to live separately. A public health response must take stock of these current and projected trends, and frame policies accordingly.

Chapter - 2

Disability and its types

What is disability?

It means inability to function normally, physically or mentally; incapacity.

A disability may be physical, mental, emotional and developmental awesome combination. A disability may be present, or occur during a person's lifetime.

Disabilities are an umbrella term covering impairments, limitations and participation restrictions. Correspondingly, three dimensions of disability are recognised;

Body structure and function (and impairment thereof), activity (and activity restrictions) and participation (and participation restriction). Education also recognises the role of physical and social environmental factors affecting disability outcomes.

- And impairment is a problem in body function or structure.
- An activity limitation is a difficulty encounter by an individual in executing a task or action.
- A participation restriction is a problem experienced by an individual in involvement in life situations.

Does disability is a complex phenomenon, selecting an interaction between features of a person's body and features of the society in which he or she live, according to World Health Organisation.

A disability is a condition of function just to be significantly impaired relative to the usual standard of an individual or group. Is used to refer to individual functioning including physical impairment, comment it, improvement, government mental, type of chronic diseases.

Disability is a conceptualized as being a multidimensional experience for the person involved. There may be effects on organs or body parts and their maybe effects on a person's participation in areas of life.

Types of disabilities

Following types of disabilities are there which require special attention

(i) Disabilities in seeing

(ii) Disabilities in hearing/speaking

(iii) Disabilities in hands

(iv) Disabilities in legs

(v) Other physical disabilities

(vi) Mental disabilities

(i) Disability in seeing

Totally blind, blind in one eye or weak vision were taken as disability in seeing. Persons who were unable to do their work without the help of others because of weakness in seeing were considered as persons who are weak in their vision. A person after wearing a pair of spectacles gets back his sight was not included under this category.

(ii) Disability in Hearing/Speaking

Dumb, deaf, dumb and deaf or speaking difficulties were taken as disability in hearing/speaking. Persons who were not able to speak at all were considered as dumb. Persons who were unable to hear from both ears were considered as deaf. Persons who were not able to both speaking and hearing at all were considered as dumb and deaf persons. A person whose speech cannot be understood clearly to others were considered as having speaking difficulties.

(iii) Disability in Hands

Loss of one hand or both hands, paralysis of one hand or both hands or any other disability in one hand or both hands were taken as disability in hands. Persons who were unable to use one hand or both hands to hold or raise anything, in attending their day-to-day work were considered as paralyzed in hand. Persons having any other type of disability in one hand or both hands not related to above types were considered as having other disability in hand/hands.

(iv) Disability in Legs

Loss of one leg or both legs, paralysis of one leg or both legs, or any other disability in on leg or both legs were taken as disability in legs. Persons having

completely lifeless or inactive leg/legs were considered as paralyzed in leg/legs.

(v) Other Physical Disability

Any other specific physical disabilities other than the disabilities such as seeing, hearing/speaking disabilities, disabilities in hand or disabilities in legs were taken as other physical disabilities.

(vi) Mental Disability

Mentally retarded and psychotic persons were taken as mentally disabled persons. A person who is backward in attending to his day to day work due to undeveloped brain was considered as mentally retarded. Persons with mental illness due to mental disorders were classified as psychotic persons.

Disabled Population in India

As per Census 2011, in India, out of the 121 Cr population, about 2.68 Cr persons are 'disabled' which is 2.21% of the total population. Among the disabled population 56% (1.5 Cr) are males and 44% (1.18 Cr) are females. In the total population, the male and female population are 51% and 49% respectively. Majority (69%) of the disabled population resided in rural areas (1.86 Cr disabled persons in rural areas and 0.81 Cr in urban areas). In the case of total population also, 69% are from rural areas while the remaining 31% resided in urban areas. The percentage of disabled population among males and females are 2.41% and 2.01% respectively. At all India level as well as disaggregated by various social groups, the proportion of disabled in the corresponding population is higher for males than females.

During 2001 – 2011, an increase in the number of disabled persons was observed both in rural and urban areas and also among males and females. The share of disabled persons in the total population, as well as in the male and female population also increased during this period. The percentage of disabled to the total population increased from 2.13% in 2001 to 2.21% in 2011. In rural areas, the increase was from 2.21% in 2001 to 2.24% in 2011 whereas, in urban areas, it increased from 1.93% to 2.17% during this period. The same trend was observed among males and females during this period. The percentage decadal change in disabled population during 2001 -2011 is 22.4, whereas for the total population, the percentage decadal change is 17.7.

The Census 2011 revealed that, in India, 20% of the disabled persons are having disability in movement, 19% are with disability in seeing, and another 19 % are with disability in hearing. 8% has multiple disabilities. Males are

more in number among the affected for all the types of disability. Among the male disabled, 22% are having disability in movement, 18% each has disability in seeing/ in hearing while 8% of them suffered from multiple disability. In the case of the female disabled, 20% each has disability in seeing / in hearing, 18% has disability in movement and 8% of them are having multiple disability.

Type of disability Definition according to Census 2011 of India

- **In Seeing**
  1. Cannot see at all; or
  2. Has no perception of light even with the help of spectacles; or
  3. Has perception of light but has blurred vision even after using spectacles, contact lenses etc. A simple test is whether the person can count the fingers of hand from a distance of 10 feet in good daylight. Such persons can however, move independently with the help of remaining sight; or
  4. Can see light but cannot see properly to move about independently; or
  5. Has blurred vision but had no occasion to test if her/his eyesight would improve after taking corrective measures.
  6. One-eyed person not to be considered as disabled in Seeing
- **In Hearing**
  1. Cannot hear at all; or
  2. Has difficulty in hearing day-to-day conversational speech (hard of hearing); or
  3. If she/he is using a hearing aid.
  4. Hearing problem in one ear not to be considered as having hearing disability.
- **In Speech**
  1. Cannot speak at all or she/he is unable to speak normally on account of certain difficulties linked to speech disorder; or
  2. Able to speak in single words only and is not able to speak in sentences; or
  3. Stammers to such an extent that the speech is not comprehensible.

- **In Movement**

  1. Do not have both arms or both legs; or
  2. Are paralysed and are unable to move but crawl; or
  3. Are able to move only with the help of walking aids; or
  4. Have acute and permanent problems of joints/muscles that have resulted in limited movement; or
  5. Have lost all the fingers or toes or a thumb; or
  6. Are not able to move or pick up any small thing placed nearby; or
  7. Have stiffness or tightness in movement; or
  8. Have difficulty in balancing and coordinating body movements; or
  9. Have loss of sensation in the body due to paralysis or leprosy or any other reason; or
  10. Have any deformity of the body part/s like having a hunch back; or
  11. Very short statured (dwarf).

- **In Mental Retardation**

  1. Lacks understanding/comprehension as compared to her/his own age group; or
  2. Is unable to communicate her/his needs when compared to other persons of her/his age group; or
  3. Has difficulty in doing daily activities; or
  4. Has difficulty in understanding routine instructions; or
  5. Has extreme difficulty in making decisions, remembering things or solving problems.

- **In Mental Illness**

  1. Is taking medicines or other treatment for mental illness; or
  2. Exhibits unnecessary and excessive worry and anxiety; or
  3. Exhibits repetitive (obsessive-compulsive) behaviour/thoughts; or
  4. Exhibits sustained changes of mood or mood swings (joy and sadness); or
  5. Has unusual experiences - such as hearing voices, seeing visions,

experience of strange smells or sensations or strange taste; or

6. Exhibits unusual behaviours like talking/laughing to self, staring in space; or
7. Has difficulty in social interactions and adoptability.

- **Any Other**

1. If the person has a disability other than the categories mentioned above; or
2. The respondent fails to report the exact type of the disability; or
3. Disabilities like "Autism" etc. (Difficulty in communicating, interacting with others; unusual & repetitive behaviours etc).

- **Multiple Disability**

1. Multiple Disabilities means a combination of two or more specific type of disabilities.
2. The question has been designed to record a combination of maximum three types of disabilities.

Chapter - 3

Special design for employees

Design for employees of *all* abilities in workplace

The concept is known as “universal design”, but we prefer to call it “inclusive design”, because the goal is to include all workers in the organizational workplace. By either name, the idea refers to a broad spectrum of ways to produce buildings, products, and environments that are inherently accessible for people with or without disabilities resulting from aging or other conditions, without requiring adaptation or retrofitting. The goal is to provide a workplace that is welcoming, enables everyone to reach the areas needed, and to fully use office equipment and resources.

Designing for inclusion from the start helps sidestep the need for retroactive accommodation later, and it also creates a much more inviting workplace. A key aspect of this approach is that it avoids segregating or stigmatizing employees with special needs, enabling them to focus on the work without having to request accommodation or draw attention to their particular need.

Examples of inclusive design include features experienced daily, such as-

- Door handles that are levers instead of knobs that require a firm “grip and twist”;
- Flat-panel light switches rather than small toggle switches that require dexterity;
- Easy-to-read large-print equipment control labels;
- Overhead and task lighting options;
- Wide interior doors and hallways, and
- Cubicles with generous turning space.
- Quiet workspaces and environmental controls for those sensitive to noise, light, heat, or cold.

Clearly, these design features also appeal to people without disabilities.

In fact, best practices in modern workplace strategy encompass some naturally inclusive ideas, such as providing different kinds of workspaces for different kinds of work and work styles. A person with a mood disorder might prefer a quiet workspace with task lighting — but so would a person be working on a complex project with a tight deadline.

✓ **The seven principles of inclusive design**

The term "universal design" was originally coined by Ronald L. Mace, a well-known architect, product designer, and educator, and further developed with the 1963 publication of *Designing for the Disabled* and 1997's *Designing for the Disabled: The New Paradigm,* by Selwyn Goldsmith. Goldsmith came up with the idea of the dropped curb or sidewalk ramp, which is now a common feature in street crossings around the world.

Since then, the practices of inclusive design have been further developed by the Design for All movement and numerous standards and design organizations. In 1989, Mace established The Centre for Universal Design at North Carolina State University, which has become the leading source of information, technical assistance and research on the topic.

The stereotypical view is that disability means wheelchair, but the reality is that a disability or impairment may be quite subtle, and it may not be permanent.

While most facilities these days already are designed to meet ADA and OSHA standards, those regulations establish only a baseline. Many organizations — sometimes inspired by their architects and interior designers — are moving toward the seven principles of universal design formulated in 1997 by an N.C. State committee, led by Mace.

The seven principles that apply not just to facility design, but also to products and environments in general here:

1. ***Equitable use:*** The design is useful and marketable to people with diverse abilities.
2. ***Flexibility in use*****:** The design accommodates a wide range of individual preferences and abilities.
3. ***Simple and intuitive use*****:** Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.
4. ***Perceptible information*****:** The design communicates necessary

information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

5. ***Tolerance for error*:** The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. ***Low physical effort*:** The design can be used efficiently and comfortably and with a minimum of fatigue.
7. ***Size and space for approach and use*:** Appropriate size and space is provided for approach, reach, manipulation, and use, regardless of the user's body size, posture or mobility.

The design principles define key characteristics that help to achieve inclusive environments, encompassing:

Access – An accessible environment helps children with SEN and disabilities take part in school activities alongside their peers. It's about providing, for instance, a simple, clear layout, accessible circulation routes, and ergonomic design details.

Space – More space may be needed – for children using mobility aids, for instance, for smaller group and individual work, and to allow for higher adult: pupil ratios. There may also be extra rooms for personal care and therapy, and more storage space for mobility and communication aids and the wide range of teaching resources.

Sensory awareness – The environment can have a significant impact on access. It means thinking carefully about acoustics, visual contrast, levels of stimuli and the use of colour, light, sound, and texture.

Enhancing learning – A well-designed environment enhances a child's educational experience. Good design can help ensure that teachers and children can communicate clearly, that furniture, fittings and equipment support the particular teaching and learning styles, and that specialist resource, personal belongings and mobility equipment are easily accessible.

Flexibility and adaptability – Schools must be flexible for everyday use and adaptable over time to meet fluctuating needs. That can involve rationalising spaces so their functions can change over time, using movable partitions, for instance, so that spaces can be configured differently.

Health and well-being – School life needs to be considered from the child's perspective. Thermal comfort, ventilation, accessible personal care, specialist medical and therapy facilities and effective hygiene and infection

control can all make a real difference to their health and well-being.

Safety and security – All children should feel safe and secure, supported in their progress to independence. There needs to be zoning to reflect different functions, for example, and security that will prevent unauthorised access and exit.

Sustainability – High quality sustainable design is crucial. It can affect social cohesion, ensure value for money and minimise the environmental impact of a school development.

Bringing inclusive design to life

Contrary to popular perception, designing for inclusion does not necessarily require costly upgrades or radical adjustments in workplace layout. In fact, modern office concepts are already leading the way.

For example, today's office layouts are increasingly likely to offer a choice of workspaces for difference kinds of work and preferences. A person with ADHD, for instance, can simply choose the workspace that is best for them that particular day, not a "special" office set aside for people with special needs.

A greater focus on employee health and well-being as a key to productivity has brought such features as sit-to-stand desks and circadian lighting into the office. These features benefit all employees, but are especially meaningful to those who are sensitive to light, temperature, or indoor air pollutants.

Small features can make a big difference in accessibility and inclusion. Some common fixes:

- Follow the "closed-fist rule", in which storage units and other equipment has U-shaped handles, push latches, side-hinged doors, and other elements that can be operated with a closed fist — which means that everyone will have access. In the restrooms and break room, provide levers rather than knobs.
- Include ramps instead of — or in addition to — stairs.
- Use different colours
- 7 for horizontal and vertical surfaces, including changes in elevation, to help those who are vision-impaired, and also reduce the risk of trips and falls.
- Provide lever handles instead of door knobs, or install doors that can

be opened with an elbow or even the tip of your nose that make entering and exiting easy for people with limited dexterity — or carrying a laptop and a cup of coffee.

- Adopt adjustable lighting operated by touch panel rather than toggle switches or small knobs.
- Eliminate obstacles in the line of travel in hallways and open-layout spaces.
- Provide blinds or curtains on windows to reduce glare on computer screens.
- Invest in adjustable chairs and desks, with storage in range of reach for all employees, and ergonomic keyboard and computer supports.
- Install multi-sensory safety alarms (auditory; visual), and large-print instructions for emergency and safety equipment.

Also, worth noting: it is possible to build in inclusive design features without compromising on aesthetics. Where earlier versions of universal design products were utilitarian rather than unsightly, the building industry has caught up to the growing demand. Today, it is not difficult to find building and interior design products that promote accessibility with style, at reasonable cost.

Smart building technologies are the next frontier for inclusive design. Already in use in many buildings, smart building systems automatically adjust in response to real-time conditions, maintaining a steady temperature and air flow to prevent excessively hot or cold areas and improve indoor air quality. Some workplaces now provide mobile apps that employees can use to preset their preferred lighting levels, temperature and even the window blinds to personalize their workspace. In addition to providing these productivity benefits, smart building technologies actually reduce costs by optimizing building performance.

Getting started

Whether you're building out a new space or renovating your current office, it's best to bring in an integrated team at the beginning of the process. Our core team typically includes our workplace strategists and real estate professionals alongside team members from HR, IT, and the corporate real estate function to define the organization's vision and goals.

This approach helps us to understand the organization's demographic

trends and what the workforce will look like in the future. Our role is to pose questions about possible challenges the current and future workforce may have in a typical office environment, and to suggest parameters for the office design.

To augment this core team, we often collaborate with universal design consultants, architects, and designers who are experts in designing for inclusion. These resources can recommend products that help mask sound or door styles that are both aesthetic and accessible for all. As universal design becomes increasingly mainstream, new products are coming on the market and providing more options for companies interested in inclusive design.

Many companies today have a diverse, multi-generational workforce that comprise not only different working styles, but also different needs for accessing office resources and facilities. Creating an office that works well for the broadest possible range of workers removes the challenge of accommodation after the fact and enables all employees to be comfortable and productive — and makes their unique needs not so special after all. Designing for inclusion is a win-win for companies and workers alike.

Chapter - 4

Theoretical perspectives on efficiency, comfort and safety: Physical environment

The natural and built environment in which people live is clean, healthy, and beautiful. All people are able to access natural areas and public spaces.

Introduction

The physical environment includes land, air, water, plants and animals, buildings and other infrastructure, and all of the natural resources that provide our basic needs and opportunities for social and economic development.

A clean, healthy environment is important for people's physical and emotional wellbeing. At a fundamental level, factors such as clean air and good quality drinking water are vital for people's physical health. Other environmental factors such as noise pollution can cause both physical harm and psychological stress.

The cleanliness and beauty of the environment is also important for people's sense of wellbeing. For many people, access to an attractive physical environment contributes greatly to their contentedness with life. A healthy environment also provides recreational opportunities, allowing people to take part in activities they value. For New Zealanders, the 'clean, green' environment is also an integral part of national identity, and guardianship of the land and other aspects of the physical environment is seen as an important part of social wellbeing. This image is also vital for the health of New Zealand's economy, as it is a key factor both in attracting tourists and underpinning the nation's success as an exporter of primary products.

Harm to the environment can reduce quality of life not only for people living today but also for many years in the future. The concept of 'sustainability' is an important aspect of social wellbeing. It acknowledges that social and economic developments need to take place in ways that don't harm present and future wellbeing by damaging the natural environment, and don't harm future wellbeing by using natural resources in unsustainable ways.

Efficiency

Efficiency in general describes the extent to which time or effort is well used for the intended task or purpose. It is often used with the specific purpose of relying the capability of a specific application of effort to produce a specific outcome effectively with a minimum impound or quantity of waste, expense or unnecessary effort. “Efficiency” has widely wearing meaning in different disciplines.

The term “efficient” is very much confused and misused with the term effective, in general efficiency is a measurable, measurable concept, quantitatively determined by the ratio of output to input, effectiveness is a relatively vague, non-quantitative concept, concerned with achieving objectives. In several of these cases, efficiency can be expressed as a result as percentage of what ideally could be expected, with 100% as ideal case.

Comfort

Comfort (or comfort ability, or being uncomfortable) is a sense of physical or psychological ease, often characterized as a lack of hardship.

Persons who are lacking in comfort or uncomfortable or experiencing discomfort. A degree of psychological comfort can be achieved by recreating experiences that are associated with the pleasant memories, such as engaging in family act, paining the presence of familiar surroundings and conception of comfortable goods. Comfort is a particular concern in healthcare, providing comfort to the sick and injured is one goal of Healthcare and can facilitate recovery.

Person who are surrounded with things that provide psychological comfort may be described as being within their comfort zone. Of the personal nature of positive associations, comfort is highly subjective. Ever, used much more broadly as one can provide physical comfort to someone who is not in a position to be uncomfortable, example a person might sit in a chair without discomfort, the addition of a pillow to the chair to increase their feeling of comfort.

Safety

With their physical needs relatively satisfied, individual safety needs take precedence and dominant behaviour. In the absence of physical safety- due to war, natural disaster, or in case of dejection, abuse etc people (re) experience fears. In the absence of economic safety- due to economic crisis and lake of work opportunities- the safety needs manifest themselves in such things as the

presence of job security. Need of security is more likely to be found in children because they have a greater need to feel safe. Safety and security needs include

- personal security
- financial security
- health and well being
- safety net against accidents illness and their adverse effects

What is a Barrier-Free Environment?

A barrier-free environment is a space that allows for free and safe movement, function and access for all, regardless of age, sex or condition. A space or a set of services that can be accessed by all, without obstacles, with dignity and with as much independence as possible. The environment means buildings, roads, parks, gardens and other places, services, modes of transportation, products of daily use, etc. There is a popular belief that a ramp and an elevator/ lift is all that is needed to make a built space barrier-free. It must be clearly understood that barrier–free goes far beyond just a ramp and has many other necessary aspects. These range from door and passage widths to flooring surfaces, from counter heights to door handles and railings, from signage and auditory signals to tactile guides.

Who all face barriers?

On the face of it, it is only persons with disabilities for whom barriers become major obstacles. However, it is necessary to realise that every person, at some stage of life, faces barriers. A small child, an elderly or infirm person, a pregnant lady, the temporarily disabled, all are vulnerable to barriers. Therefore, to list out people affected by barriers –

- Wheelchair users
- People with limited walking/ movement abilities
- People with visual impairment or low vision
- People with hearing impairment
- Elderly and infirm persons
- Pregnant ladies
- Children
- People with temporary disabilities

Why is it necessary to remove barriers?

Barriers make an environment unsafe and cause a high level of difficulty to the user. But more importantly, barriers cause spaces to be out of reach, denying people the opportunity of participation in various spheres of life. This ranges from education, economic, social, cultural and many other activities. This loss of opportunity is not only a loss for the person concerned but also society's loss which misses out on their contribution. Simply put, a barrier causes exclusion and its removal is necessary for ensuring inclusion and participation of all in society.

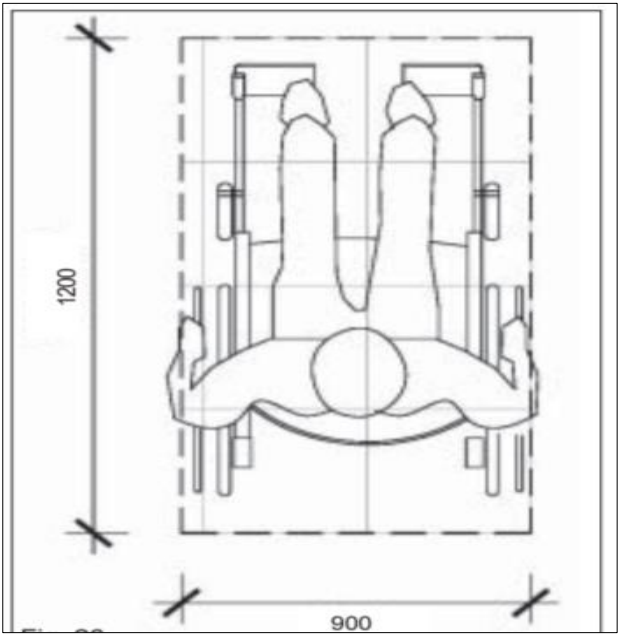
Chapter - 5

Architectural dimensions- flooring, stairs, storage, workstation furniture, fixtures and fitments equipment

Clear floor or ground space for wheelchairs

The minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 900 mm x 1200 mm. (fig.26) An allocation of 1200 mm x 1200 mm would facilitate both forward and side approaches.

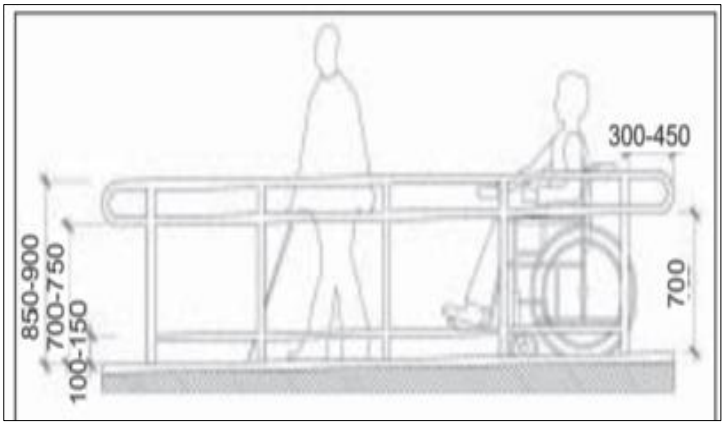
- The clear floor or ground space for wheelchair access may be positioned for perpendicular or parallel approach to an object.
- This clear floor or ground space may be part of the knee space required under some objects such as tables, basins or platforms.



Stairs

Treads and Risers

- On any given flight of stairs, all steps shall have uniform riser heights and uniform tread widths.
- Stair treads shall be no less than 280 mm wide, measured from riser to riser.
- Open risers are not permitted on an accessible stair.



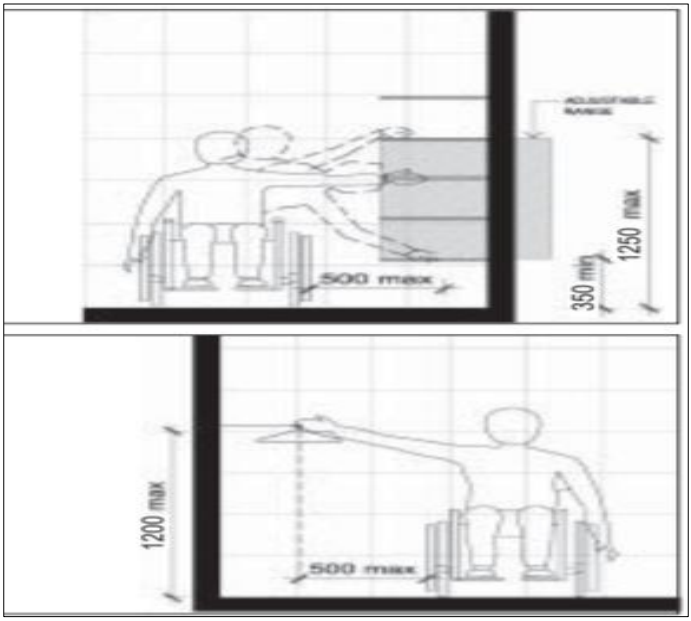
Storage

Clear Floor Space

A clear floor space at least 750 mm x 1200 mm that allows either a forward or parallel approach by a person using a wheelchair shall be provided at accessible storage facilities.

Height

Clothes rods or shelves shall be a maximum of 1250 mm above the finished floor level for a side approach. Where the distance from the wheelchair to the clothes rod or shelf exceeds 255 mm, as in closets without accessible doors, the height of the rod must not exceed 1200 mm from the finished floor level and its depth must not exceed 500 mm from the user.



Fixed or built-in furniture (Seating, Benches, Tables)

- Fixed seating should be installed such that they provide free passage to all people with minimum 900 mm space. They should be provided at every 30 mts along a barrier-free path of travel within an institution.
- Local textural changes may be incorporated into the paving for identification of such public amenities by disabled persons. If fixed bench/ seat projects out without any connection to the floor then there must be an upturn from the floor finish or tactile rendering around it detectable by the visually impaired by the white stick.
- Public seats and benches should be 450 mm high from the finished floor level and should have a backrest at about 700 mm above the finished floor level.
- Accessible benches should allow a minimum space of 900 mm x1400 mm adjoining them for the wheelchair. They should be stable to withstand side thrusts and provide minimum toe space of 300 mm. They should have arms and back-rests.
- The height of the tables should be between 750 mm and 900 mm and the minimum depth under a table should be at least 600 mm such that a wheelchair may fit in from under all sides.

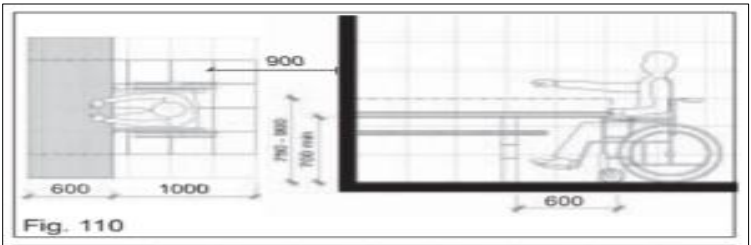


Fig. 110

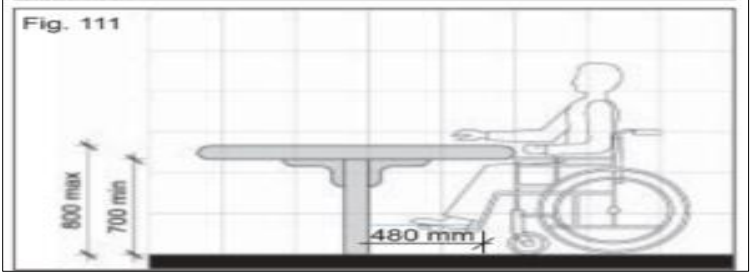
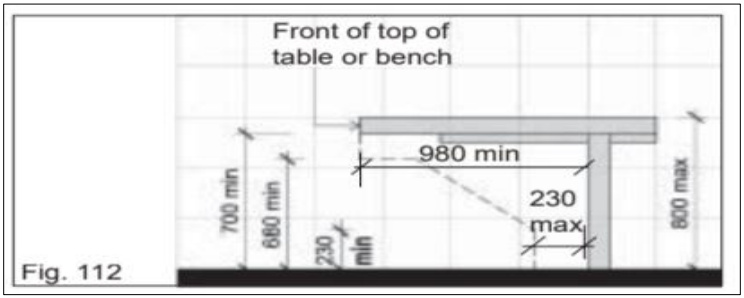


Fig. 111



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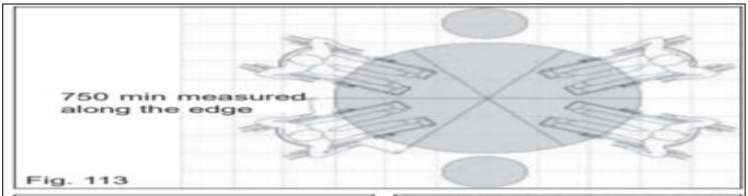

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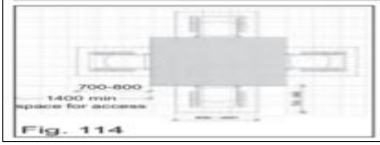


Fig. 114


Fig. 115

Home Safety Guideline

An accident or injury can occur in any part of your home. Some safety hazards are obvious — such as a toy truck left lying at the top of the stairs. Others are not so easily identified — such as a stairway railing that has become loose.

Kitchen

- Are knives, forks, scissors, and other sharp tools in a drawer with a childproof latch?
- Have you installed a dishwasher lock so kids can't open it while it's running and can't reach breakable dishes, knives, and other dangerous objects?
- Have you installed a stove lock and have knob protectors been placed on the stove knobs?
- Are chairs and steps tools positioned away from the stove?
- When cooking, are all pot handles on the stove turned inward or placed on back burners where kids can't reach them?
- Are glass objects and appliances with sharp blades stored out of reach?
- Is the garbage can behind a cabinet door with a childproof latch?
- Are all appliances unplugged when not in use, with cords out of reach?
- Are all vitamin or medicine bottles tightly closed and stored in a high cabinet far from reach?
- Are matches and lighters stored in a locked cabinet?
- Is the cabinet under the sink free of cleaning supplies, bug sprays, dishwasher detergent, and dishwashing liquids? And are these supplies out of the reach of children?
- Are any bottles containing alcohol stored out of reach?
- Are all plastic garbage bags and sandwich bags out of reach?
- Are any cords or wires from wall telephones or cable TV out of reach?
- Are refrigerator magnets and other small objects out of reach?
- Are childproof latches installed on all cabinet doors?
- Is there a working fire extinguisher? Do family members know how to use it?
- Does your child's highchair have a safety belt with a strap between the legs?

Child's Room/Bedroom

- Does your baby's changing table have a safety belt?
- Are all painted cribs, bassinets, and high chairs made after 1978? (Prior to this, paint was lead based.)
- Are crib slats less than 2-3/8 inches (6 centimetres) apart?
- Are the crib's headboard and footboard free of large cut-outs?
- Is all of the hardware on the crib secure?
- Is the crib mattress firm and flat? Does it fit snugly in the crib?
- Is the crib free of a drop side?
- Is the crib free of soft pillows, large stuffed animals, bumper pads, and soft bedding?
- Have any strings or ribbons been clipped off hanging mobiles and crib toys?
- Are window blind and curtain cords tied with clothespins or specially designed cord clips? Are they kept well out of reach and away from cribs?
- Are dressers secured to walls with drawers closed?
- Do the lids on toy chests or toy storage containers have a lid support to keep them from slamming shut? Are all toy chests non-locking?
- Has a window guard been placed on any window that isn't an emergency exit?
- Are any night-lights in the room not touching any fabric like bedspreads or curtains?
- Does your child wear flame-retardant sleepwear?
- Is there a smoke alarm outside the bedroom?
- Have you removed all drawstrings from your child's clothing?

Adult's Bedroom

- Are all medication bottles, loose pills, coins, scissors, and any other small or sharp objects out of reach?
- Are window blind and curtain cords tied with clothespins or specially designed cord clips?

- If you own firearms:
- Are they stored in a securely locked case out of kids' reach? All firearms should be stored unloaded and in the un-cocked position.
- Is ammunition stored in a separate place and in a securely locked container out of kids' reach?
- Are keys kept where kids can't find them?
- Outdoors/Backyard/Pool
- Are all walkways and outdoor stairways well lit?
- Are all walkways clear of toys, objects, or anything blocking a clear path?
- Are all sidewalks and outdoor stairways clear of concrete cracks or missing pieces?
- Are all garbage cans securely covered?
- Are all swing sets parts free from rust, splinters, and sharp edges?
- Are all parts on swing sets or other outdoor equipment securely fastened?
- Is the surface beneath the swing set soft enough (cushioned with material such as sand, mulch, wood chips, or approved rubber surfacing mats) to absorb the shock of a fall?
- Are all outdoor toys put away in a secure, dry place when not in use?
- Is there climb-proof fencing at least 5 feet (1.5 meters) high on all sides of the pool? Does the fence have a self-closing gate with a childproof lock?
- Have all ladders been removed from an above-ground pool when not in use?
- Other Safety Issues
- Have you removed any potentially poisonous houseplants?
- Have you instituted a no-smoking rule in your home to protect kids from environmental tobacco smoke?
- Have you considered possible health risks from — and if indicated, tested for — lead, radon, asbestos, mercury, mold, and carbon

monoxide?

- If there are guns in the home, have they been placed in a locked cabinet with the key hidden and the ammunition locked separately?

Walls & Floors

- Are walls in good condition, with no peeling or cracking paint (which could contain lead in older homes)?
- Are there any nails in the walls that should be removed?
- Are mirrors and frames hung securely?
- Are rugs secured to floors or fitted with anti-slip pads underneath?

Doors & Windows

- Have you installed a finger-pinch guard on doors?
- Have you removed the rubber tips from all door stops or installed one-piece door stops?
- Have you placed doorknob covers on doors so that your toddler won't be able to leave the house?
- Do all glass doors in the house contain decorative markers so they won't be mistaken for open doors?
- Do all sliding doors have childproof locks?
- Are there safety bars or window guards installed on upper-story windows?
- Are there window stops to keep the windows from closing all the way?
- Are window blind cords tied with clothespins or specially designed cord clips?

Furniture

- Are bookshelves and other furniture secured with wall brackets so they can't be tipped over?
- Is there protective padding on corners of coffee tables, furniture, and countertops that have sharp edges?
- Do toy chests and other chests have safety hinges to prevent them from closing?

- Have you checked that all used or hand-me-down baby equipment hasn't been recalled?
- Are flatscreen TVs mounted securely on the wall? Are older, heavy TVs on a low, stable piece of furniture?
- Are there stops on all removable drawers to prevent them from falling out?
- Are beds and cribs away from windows?

Stairways

- Are there hardware-mounted safety gates at the top and bottom of every stairway?
- Are stairways clear of tripping hazards, such as loose carpeting or toys?
- Have you placed a guard on banisters and railings if your child can fit through the rails?
- Are the railings and banisters secure?
- Is the door to the basement steps kept locked?
- Is there enough light in the stairway?

Electrical

- Are all unused outlets covered with safety plugs?
- Are all major electrical appliances grounded?
- Have cord holders been used to keep longer cords fastened against walls?
- Have you checked for and removed other potential electrical fire hazards, such as overloaded electrical sockets and electrical wires running under carpets?
- Are televisions, computers, and stereo equipment positioned against walls? Are they secured to the wall with brackets so they can't tip forward?

Heating & Cooling Elements

- Are all radiators and baseboard heaters covered with childproof screens if necessary?

- Have gas fireplaces been secured with a valve cover or key?
- Do all working fireplaces have a screen and other barriers in place when in use?
- Have any chimneys been cleaned recently?
- Are all electric space heaters at least 3 feet (91 centimetres) from beds, curtains, or anything flammable?

Emergency Equipment & Numbers

- Have you placed a list of emergency phone numbers near each phone in your home?
- Are there fire extinguishers installed on every floor and in the kitchen? Do you know how to use them?
- Do you have an emergency ladder for the upper floors of your home?
- Are there smoke detectors on each floor of your home?
- Have smoke detectors been installed in the hallways between all bedrooms of your home?
- Have you tested all smoke detectors within the last month?
- Have you changed the batteries in the smoke detectors within the past 6 months?
- If you cook with or heat your home with natural gas or have an attached garage, have you considered installing a carbon monoxide detector in your home?

Bathroom

- Is the thermostat on the hot water heater set below 120°F (49°C)?
- Are razor blades, nail scissors, and other sharp tools stored in a locked cabinet?
- Are childproof latches installed on all drawers and cabinets?
- Do the outlets have ground fault circuit interrupters (which protect against electrocution if an electrical appliance gets wet)? (If you live in an older home that may not be "up to code," have an electrician inspect your circuit breaker panel.)
- Are toilets always left closed? Is there a toilet-lid lock on the toilet?

- Are all hair dryers, curling irons, and electric razors unplugged when not in use?
- Are there nonskid strips on the bottoms of bathtubs?
- Are there nonslip pads under rugs to hold them securely to the floor?
- Are all prescription and non-prescription medicines, cosmetics, and cleaners stored in a locked cabinet? Are childproof caps on all medicines?
- Are bottles of mouthwash, perfumes, hair dyes, hair sprays, nail polishes, and nail polish removers stored in a locked cabinet?

Garage & Laundry Area

- Are all tools, products, and supplies used for auto maintenance, pool care, and gardening and lawn work stored safely away from children in a locked area?
- Are recycling containers storing glass and metal out of reach? Are garbage cans covered?
- Are all bleaches, detergents, and other cleaning products in their original containers and stored in a locked cabinet?
- Are laundry detergent pods out of sight and stored in a locked cabinet?
- Are laundry chutes locked with childproof locks?

Chapter - 6

Indoor Environment

Light, Noise, Humidity and Temperature

Specific indoor lighting requirements for people with special needs

The eye can be compared to a camera, the cornea and lens constituting the optics and the retina the light sensitive film. Its important functions include accommodation and adaptation, dazzle being an extreme disturbance of adaptation which severely impairs visual acuity.

To be able to see it is essential to have adequate light, to be free from dazzle, and to have constant levels of illumination both from place to place within the room and at different times of day. Contrast ratios should not exceed 1:3 in the centre of the visual field and be below 1:10 at the periphery, and when repetitive activities are being performed, the eye should not have to move between dark and bright surfaces. Although fluorescent tubes are efficient as light sources, they give a flickering light that is physiologically undesirable: this effect can be avoided by using two or three tubes out of phase with each other.

A useful way of assessing the value of daylight indoors is the daylight-quotient, which expresses interior illumination as a percentage of that out of doors. The strength of daylight indoors depends on the direction of the sun, and on the amount of reflection from internal and external surfaces. The principle factor is the amount of light received from the sky, which in turn is determined by the aspect of the building, and by the height and breadth of windows. Direct light from the sky determines the level of illumination in the room as a whole, whereas areas facing away from the windows receive only reflected light; high windows are more effective than lower ones on both counts.

Sunlight in living quarters has the following effects: it dries out the walls, kills micro-organisms, helps children to grow, reduces heating expenses, and has a pleasing psychological effect. Recommendations for the duration of sunlight (in minutes):-

Minimum Desirable		
Living- room	60-90	More than 120
Bedroom		
In small dwellings	0	0
In large dwellings	30	30
Children's room		
In small dwellings	60-90	More than 120
In large dwellings	90-150	More than 210

Indoor Environment

What is good indoor environmental quality?

Indoor Environmental Quality (IEQ) is most simply described as the conditions inside the building. It includes air quality, but also access to daylight and views, pleasant acoustic conditions, and occupant control over lighting and thermal comfort.

What is indoor climate?

Indoor climate. The indoor climate is important for health, well-being and productive work. The World Health Organisation (WHO) has defined "indoor climate" as including: Thermal environment (heat, cold, draughts and humidity) Atmospheric environment (pollution, air quality and volume of fresh air)

Lighting

- Lighting can make the difference between seeing and not seeing for older adults with deteriorating vision.
- Home designers, architects, and builders can improve the quality of life of older adults by understanding how lighting compensates for the changes that commonly occur in aging eyes.

2.7 - LIGHTING

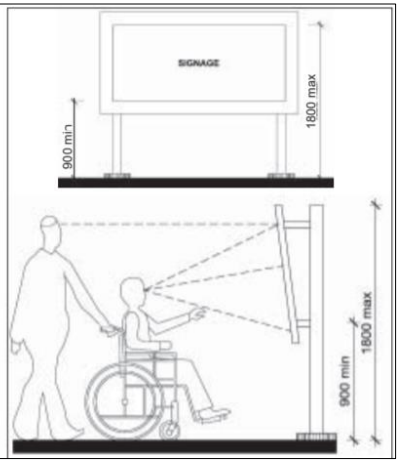
-Illumination levels shall not be less than 100 lux in laboratories and not less than 50 lux in all other facilities.

-The minimum illumination level required at floor and tread level at angles, intersections and changes in level where there are stairs or ramps shall be:

- 50 lux in every exit, in every public corridor, and in every corridor providing access to an exit and other occupancies.

-100 lux in washrooms, in recreation rooms, residence common rooms, at the level of edge of stair nosings.

- 200 lux in service rooms and laundry rooms.



Designing lighting for the elderly requires special consideration and care from architects and lighting designers. As people age, they experience neural degeneration in the retina. Less light reaches the back of the eyes because the pupils decrease in size as you age, the lens inside eye becomes thicker, and the lens scatters lighter, causing objects and colors to appear less vivid.

These symptoms are particularly common with persons having Alzheimer's disease. Older people also have reduced levels of retinal luminance, such as having smaller pupils and less transparent crystalline lenses. Furthermore, as an individual age, he or she begins to lose retinal neurons, which not only compromises the ability to see but also to register a robust daily pattern of light-dark that is needed to maintain biological rhythms. The 24-hour light-dark cycle is the most important external stimulus for regulating the timing of the circadian system.

In addition to the aging eye, lighting designers need to consider the unique lifestyle needs of the elderly. Due to physical limitations, they may be deprived of natural sunlight. Many nursing homes and assisted living facilities have dim, constant light levels and light spectra. This can cause disruption of the body's circadian rhythms, which can potentially lead to negative health effects.

✓ **Taking care of Circadian cycles**

All living organisms have biological rhythms that repeat approximately in 24-hour cycles, in accordance with the cycle of sunlight. The most prominent way to measure whether a body is entrained in this circadian cycle is by measuring melamine secretion, and core body temperature. The

suprachiasmatic nucleus (SCN) regulates melatonin and temperature and typically produces melatonin at night. Melatonin informs the body when it is time to sleep.

When circadian cycles become disrupted (due either to too little light or too much light at the wrong time of day), melatonin is produced at disrupted times. This causes an individual to experience disrupted sleep patterns, which in turn causes numerous health issues to arise, particularly with old and sick people.

The key external stimulus is variation in light and darkness over the course of the day. The elderly are at high risk for physical ailments when their circadian cycles are disrupted. Impairment of these SCN-mediated circadian rhythms becomes increasingly common with advancing age, diminished health, and Alzheimer's disease, thereby contributing to the high prevalence of sleep disturbances in these populations.

- ✓ **Taking care of Sleep Disorders**

40 to 70 percent of those 65 years old and older suffer from chronic sleep disturbances. The elderly tends to go to bed early in the evening and wake earlier in the morning than younger adults. Furthermore, the elderly often wakes several times throughout the night and have difficulty falling asleep. They are prone to taking numerous naps during the day. Furthermore, constant lighting in assisted living facilities has been demonstrated to impair sleep ability.

In persons with Alzheimer 's Disease, sleep disturbances are much more frequent and tend to be more severe. These patients exhibit intermittent sleep throughout the 24-hour day, instead of consolidated sleep at night and wakefulness during the day.

Poor sleep is one of the largest complaints among the elderly, and poor sleep can be linked to a wide variety of problems including increased cardiovascular problems, disruption of endocrine functions, decline of immune functions, stability problems, and poor cognition. When elderly are exposed to high circadian light levels during the day and dim circadian levels at night, their sleep duration and efficiency significantly improves.

- ✓ **Taking care of Depression**

The elderly frequently cite depression as a notable ailment. Many researchers have linked the depression to seasonal affective disorder (SAD), and seasonal mood variations have been linked to lack of light. Light therapy

in the form of light boxes is a frequent non-drug treatment for SAD. Several preliminary studies have shown that light therapy is a positive treatment for depressive symptoms for older persons.

Providing light early in the evening can help seniors sleep better at night and be more alert during the day because the light delays the biological, circadian clock. When the elderly are exposed to bright white light, they improve sleep efficiency. So, an exposure to 30 lx of blue light from LEDs in the evening (peaking for two hours) increases sleep efficiency for older adults who have difficulty sleeping.

Providing white light and blue light has even greater impact for those with Alzheimer's Disease (AD). So far, two lighting methods have been shown to improve night-time sleep in AD patients: (1) exposure to bright white light (at least 2500 lx and as high as 8000 lx at the cornea) for at least one hour in the morning, for two weeks and (2) exposure to 30 lx of blue light from LEDs, peaking at 470 nm at the eye for two hours. The light, or the better sleep, also helped to reduce agitated behavior such as pacing, aggressiveness, and speaking loudly. Evening exposure to bright white light (1500 to 2000 lx at the cornea) for two hours decreased nocturnal activity and severity of evening agitation.

Daylight is an ideal light source because it provides high circadian stimulation during the day. Daylight also has the correct intensity and spectrum needed to stimulate the circadian systems. Architectural designs should consider adding sun rooms, skylights, patios, and courtyards into the design of facilities for the elderly.

Architects can also select lighting fixtures that emit an array of blue light LEDS which deliver at least 30 lux at the corner. Lighting schemes that have timers are also helpful in providing the right type of light at the right type of day.

Nightlights are also helpful in reducing falls and injuries and, at the same time, help the elderly to maintain sleep. Falls are a major concern with the elderly; they threaten their independence and risk further health complications. Lighting systems can help seniors maintain balance and stability.

Furthermore, sleep deprivation can contribute to decreased postural control. Nightlights that accent horizontal and vertical spaces, such as soft lighting above a doorway or at the foot of a bed, can reduce the risk of falls without disturbing sleep.

- ✓ **Lighting for elderly eyes at work and living**

The eyes of elderly people need more light, but at the same time are dazzled more easily than younger eyes. Lamps designed for adjustment to personal needs of light improve the capacity of vision of the elderly. Furthermore, electronic ballasts provide flicker free light and changing colours of light a pleasant comfort for the eyes.

Vision and acuity diminish with increasing age. First of all – starting from about 45 years – the capability of the eye lens to focus near objects decreases. Also, the adaption to different levels of brightness becomes more difficult.

About ten years later the opacity of lens due to accretion of metabolism increases. The light dispersion at the opaque parts of the lens, especially with whitish-blue light, then leads to an increased responsiveness of glare and is felt as unpleasant. This is also manifested in the different excitation of glare of automobile headlights with normal white light and those with blueish Light. In comparison the last mentioned is recognized as more glaring, therefore comes across as more awkward and often irritating.

Problems in vision also appear in daily work at the office. The light in northern hemisphere is hardly ever sufficient for the illumination of workplaces. It is not sufficient only to install light which illuminates the offices brightly in twilight or darkness. The artificial light shall also contribute to wellness, support the personal efficiency and assure it.

This is especially important in open-plan offices, where work is solely done in the light of standard lighting installation. Elderly eyes, as from about 50 years, need approximately 50% more light to perform the same vision as 25 years old eyes, a noticeable handicap in the kind of working environment.

This means that a luminance of more than 800 Lux instead of the minimum of 500 Lux (is necessary. This figure can often only be reached by an additional illumination directly on the table top.

More light often means more glare. This is the most frequent reason for problems and irritations of the eyes at the workplace due to the illumination.

Hard and glary halogen light appears as irritating as the well-meant ceiling light with it's reflexes on the workplace. For offices with computer workplaces the same applies as for other work situations: no directly visible, but faded lamps with louvers, preferably indirect, which means emitting light to the top.

High-quality, powerful desktop lights, as shown, are even open at the top

side for a partial, supporting, indirect illumination and heat abstraction.

The tired eye notes fluttering and flickering light much more which is a clear evidence for the additional strain of the eyes and the perception. This strain can easily be stopped by electronic high frequency operation of the fluorescent tubes. This operation frequency of 40.000 Hz, which is much higher than the 50 Hz of conventional magnetic ballasts, leads to flicker free light from the fluorescent tubes comparable to that of a bulb.

A change in the colour of light can also be refreshing for tired eyes, for example by the use of a lighting fixture with two fluorescent tubes. One of them – with the colour daylight – is serving as well as an inconspicuous additional illumination on cloudy days with few natural daylights. The second tube has a much more yellow colour and is suitable for times of work without natural daylight. Understood that each tube is powered by an individual electronic ballast with dimming controls.

If both tubes are used at the same time not only the output is double as high, but also the mix of both colours is quite comfortable. The balance of colours can even be modified by individual dimming.

Consequently, light and comfort of vision for the mature, experienced eyes are created by a combination of light-technical attributes. The human being is the most important feature. Person will do his work much more productively and even-tempered in a holistic, comfortable environment of light. Therefore, light is a factor for a higher quality of life, work and wellness in the office.

What can we do to make lighting more effective for older adults?

- **Increase ambient light levels –** Less light reaches the retina of the older eye. The light levels in living environments used by older adults should be increased by at least 50% over those comfortable for younger people. In general, ambient light levels should be at least 300 lux (lx) [30 footcandles (fc)].
- **Increase task area light levels -** At least three times lighter will be required in task areas to see fine details (e.g., reading prescriptions) or low contrast objects (e.g., black thread on blue cloth). Light levels on the task should be at least 1000 lx (100 fc).
- **Minimize glare –** Although more light is required for the older eye to see well, care should be taken to avoid glare. Glare is experienced when light sources or bright reflections in the field of view impair

vision, or are simply uncomfortable.

- **Increase contrast –** Because contrast sensitivity is reduced with age, the visibility of important objects, such as stair edges, curbs, ramps, or doorways, can be greatly improved by increasing their contrast with paint or similar techniques.
- **Balance illuminance levels –** Because the older visual system cannot completely adapt to dim conditions, illuminance levels in transitional spaces, such as hallways and entrance foyers, should be balanced with those of the adjacent spaces.
- **Improve color perception –** Color discrimination is poorer for older adults. High illuminance levels and high-quality fluorescent lamps, rather than conventional incandescent lamps, will help older adults to see colors well.

Lighting rooms

There are many ways to light rooms in the homes of older adults. Following are a few examples of good lighting. Each section describes the lighting goals and principles for a room, illustrates a lighting solution, and summarizes how solutions can be applied to meet a client's needs.

Living Room

Lighting Tips

- Increase light level by placing luminaires close to the task, or by selecting lamps with more lumens (look for the lamp lumen rating on the package).
- Use light color finishes on walls and ceilings to soften the effects of bright light sources, and to reduce shadows.

Dining Room

Lighting Tips

- Avoid using clear glass luminaires.
- When using extra light on objects of special interest, such as pictures, vases, etc., aim the lighting at the object, away from faces.

Kitchen

Lighting Tips

- Place luminaires over the sink, stove, countertops, and other fixed

work areas. Locate these luminaires slightly to the side and in front of the position where a person would stand to see the task.

- Avoid having only one ceiling luminaire in the center of the room that casts a person's shadow onto the counter or sink where he/she is working.

Bedroom

Lighting Tips

- Install light switches with toggle that glow in the dark. Place switches near the bed. Wall outlets should be installed 18 to 24 in. above the floor for easy access.
- Use lamps with good color properties in closets to help color matching of clothes.

Bathroom

Lighting Tips

- In the bathroom, use a wet-location-rated shower light for good visibility.
- Luminaires that are not wet-location-rated should be mounted at least 3 ft away from the bathtub or shower.
- Choose a matte countertop vanity surface with light colors to reflect light to the underside of your chin.

Specific Guidelines for people with special needs

Planning lighting for the people with special needs requires due considerations like;

- Install evenly distributed non-glare lighting with appropriate foot-candle levels specific to tasks by area.
- Electric switches should be simple switches, easy to operate, and it should be possible to switch lights on and off from 2 or even 3 points to avoid walking in the dark.
- Three-way switches on lamps will allow for extra lighting when it is needed.
- Use night lights
- Use lighted cover plates

- Cover windows with a transparent or translucent material like sheers to filter natural light and eliminate glare. Adjustable blinds, shades or transparent reflecting film also can control glare.
- All storage areas should have lights controlled by wall
- In kitchens, provide lighting over counters and the sink. Track lighting or fluorescent light sticks that plug into electrical outlets can be added.
- Switches on table lamps should be easy to use. Twisting switches may be more difficult so they should be avoided.
- Ensure the bedroom has various types of light. The elderly person must be able to see, but he might also like to a have a bedside lamp if he likes to read. He should be able to turn the light off without getting out of bed.
- Bathroom should have even lighting without glare and the light switch should be near the entrance.
- Stairways and stair halls should be well lighted. Two-way switches located at top and bottom of stairs and at both sides of the halls are essential.
- Lamps should be easy to switch on and off and should not have extension cords running across walking paths.
- Provide circuit breakers or fuses to prevent electrical overload and the accidents and the fires due to it.
- Electric cords should be placed along the walls and away from the traffic areas.

Noise

Older people more over-sensitive to sounds

- The study revealed that when young adults are in a loud environment – such as a rock concert – their brains become less sensitive to relatively quiet sounds. This allows the listener to hear the relevant sounds (like a guitar riff) better without being distracted by irrelevant sounds.
- However, as a person ages, researchers found that older listeners become over-sensitive to sounds, hearing both quiet and loud sounds without the ability to ignore or tune out irrelevant auditory

information. Without the ability to reduce sensitivity to irrelevant sounds, the individual experiences hearing challenges.

- "When the sound environment is loud, the brain activity in younger adults loses sensitivity to really quiet sounds because they're not that important," Herrmann said. "Whereas older individuals still stay sensitive to these relatively quiet sounds, even though they're not important at the time."

The Environmental Noise Directive focuses on three action areas:

- The determination of exposure to environmental noise.
- Ensuring that information on environmental noise and its effects is made available to the public.
- Preventing and reducing environmental noise where necessary and preserving environmental noise quality where it is good.

Temperature and Humidity

- ✓ Room temperature and relative humidity in the home are greatly influenced by the weather outside.
- ✓ They vary naturally with the changing seasons and depending on whether we leave doors and windows open; significant, constant disruptions are not advisable, however.
- ✓ The relative humidity, meanwhile, plays a determining role in the quality of your indoor air. Health Canada recommends keeping the humidity above 30% in winter and making sure it doesn't exceed 55% in summer (ideally, it should be somewhere between those percent values at all times).
- ➢ Excessively high humidity in the home creates a favourable environment for mould and dust mites —powerful allergens and irritants that can lead to respiratory problems like asthma.
- ➢ Conversely, if the relative humidity is below 30%, the air is too dry:

1. This can cause irritation of the mucous membranes of the nose and throat, and breathing difficulties in at-risk individuals (e.g., people with asthma).
2. Dry air is also harmful to people with skin or eye conditions.

Too much heat is not safe for anyone. It is even riskier if you are older or have health problems. It is important to get relief from the heat quickly.

Heat syncope

- Is a sudden dizziness that can happen when you are active in hot weather?
- If you take a heart medication called a beta blocker or are not used to hot weather, you are even more likely to feel faint.
- Rest in a cool place, put your legs up, and drink water to make the dizzy feeling go away.

Heat cramps

- Are the painful tightening of muscles in your stomach, arms, or legs? Cramps can result from hard work or exercise.
- Find a way to cool your body down. Rest in the shade or in a cool building. Drink plenty of fluids, but not those with alcohol or caffeine.

Heat edema

- Is a swelling in your ankles and feet when you get hot? Put your legs up to help reduce swelling.

Heat exhaustion

- Is a warning that your body can no longer keep itself cool?
- You might feel thirsty, dizzy, weak, uncoordinated
- Rest in a cool place and get plenty of fluids.
- If you don't feel better soon, get medical care.
- Be careful—heat exhaustion can progress to heat stroke.

What temperature is dangerous for elderly?

- A body temperature below 98.2 degrees Fahrenheit is considered abnormal, and anything below 95 degrees Fahrenheit is a major cause for concern, as it indicates a risk of hypothermia.
- Keep your home at a safe temperature to help maintain a healthy body temperature.

What temperature is too hot for seniors?

Older people can have a tough time dealing with heat and humidity. The temperature inside or outside does not have to reach 100°F (38°C) to put them

at risk for a heat-related illness. Headache, confusion, dizziness, or nausea could be a sign of a heat-related illness.

What Is The Ideal Room Temperature For An Elderly Person?

According to the NHS website, the temperature inside your home should not reach below 18°C if you are over 65 years old or have a health condition, such as heart or lung disease.

- It's understandable why people would struggle to keep their homes warm during these months though. AGE UK found that 80% aren't aware what the ideal room temperatures are, and according to a 2018 survey, more than a million elderly people fear they won't be able to pay their energy bills this winter.
- For family members or carers looking after an elderly person, it can be a great cause of anxiety as well. Many carers struggle to know the best way forward when it comes to keeping the person, they are caring for both safe and warm.

Why Is Room Temperature Important?

- ✓ An appropriate room temperature will allow individuals to maintain a healthy body temperature.
- ✓ While 98.6 degrees Fahrenheit is commonly referred to as a "normal" internal temp, some variation is expected. Really, anything between 98.2 and 99.9 degrees can be considered normal.
- ✓ A body temperature below 98.2 degrees Fahrenheit is considered abnormal, and anything below 95 degrees Fahrenheit is a major cause for concern, as it indicates a risk of hypothermia.
- ✓ Keep your home at a safe temperature to help maintain a healthy body temperature.

What Is Hypothermia?

- ✓ Hypothermia can be defined as the state of having an abnormally low body temperature—typically below 95 degrees Fahrenheit.
- ✓ Generally associated with exposure to freezing water, hypothermia can set in quickly, without warning. But it may not have anything to do with exposure to wind and rain. Among the young and old, hypothermia can set in anytime, even in their relatively warm homes.
- ✓ Dangerously low body temperatures can lead to serious health

problems like heart attack, organ damage, and even death. Keeping the thermostat set to a safe temperature, between 68- and 74-degrees Fahrenheit, is the easiest way to safeguard against hypothermia.

What Other Steps Should Elderly Adults Take to Stay Warm and Healthy?

Outside of adjusting room temperature, there are many ways elderly individuals and their caregivers can safeguard against temperature-related health problems.

These include

- If consuming alcohol, do so moderately. Alcoholic beverages can contribute to the loss of body heat.
- Inspect the home's insulation. Protect against drafts by adding door snakes or thermal curtains throughout the house.
- Dress for the weather. Wear layers so you can adjust your outfit for any fluctuation in temperature.
- Keep extra blankets on your bed, and wear warm pajamas to bed.
- Eat small meals frequently throughout the day to keep your energy up and help maintain a healthy body temperature.
- Believe in the buddy system. Check in with elderly friends and family regularly, in person or over the phone, to make sure their warm and safe throughout the winter.

Chapter - 7

Managerial Dimensions- Time, money, energy, food and health, psycho-social; External environment support

The Magnitude of the problem in India

- 24 million in 1961 increased to 77 million in 2001
- Projected to rise to 179 million in 2031 and 301 million in 2051
- 70 and above projected to increase from 29 million in 2001 to 132 million in 2051
- 80 + would be fastest to grow - 8 million in 2001 to 32 million in 2051
- 2nd largest elderly (60+) population in the world (2001)
- 80% are in rural areas
- 40 % are below poverty line
- Over 73 per cent are illiterate
- About 90 % of the old people have no official social security
- Life expectancy 31.7 years in 1941 increased to 60.5 years in 2000
- 55 % of the women of 60 years and above are widows
- Family structure is changing to nuclear/small unit families
- Without the safe, secure and dignified status in the family, the elderly is finding themselves vulnerable
- Welfare of the elderly has been a low priority with the state

History

- ✓ "Geriatrics" word coined by Ignatz L Nascher in 1909
- ✓ "Father of geriatrics"
- ✓ In 1935 Marjory Warren of England established geriatric unit
- ✓ "Mother of geriatrics"

Definition

Greek: gerus = old age iatrea = treatment

- **Geriatrics:** A branch of medicine that deals with the problems and diseases of old age and aging people.
- **Gerontology:** Comprehensive study of aging and the problems of the aged.
- **Old age:** Period of life when impairment of physical and mental functions becomes increasingly manifested in comparison to the previous years of life.

Definition of elderly

- According to WHO, most developed countries have accepted the chronological age of 65 years and above as a definition of 'elderly' or older persons.
- According to UN: 60+ years will be referred as the older population or elderly.

➢ Young old – up to 75 years.

➢ Old – up to 85 years.

➢ Very old – over 85 years.

Changing population structure

- Developing countries
- ↑ BR
- Infant population, the largest, forms the base of the pyramid
- Size of the old aged population gets sharply smaller and smaller, till it becomes a point as the top of the pyramid.
- The living conditions of the population become better with improved health care and economic status.
- Fertility rate and mortality rate gradually decline with gradual increase of life expectancy.
- Developed world
- Fertility rate has come down drastically along with mortality rate with a vastly increased life expectancy

Impact of demographic transition Impact on Health

- ↑ life expectancy & high growth of general population → rapid increases in the elderly population
- Increase in life span → morbidities and disabilities in elderly ↑.
- Gear our health infrastructure - to deal with the increasing number of morbidities and disabilities but, also to produce workforce to deal with this special population.
- ↑ life expectancy, elderly will now place greater stress on families Since they were living longer and had a higher probability of experiencing disability
- Responsibility for providing care would be divided among fewer children.
- Children in all likelihood would be working and likely to be more geographically distant.

Social Outcomes of Demographic Transition

- Single elderly – important social outcome.
- Widowhood more among older women
- Widowhood is perhaps most traumatic
- Old, sick, disabled & retired.
- The elderly who spent most of their working lives in unorganized and informal sector – Don't receive pension
- Dependency

Economic Aspects of Demographic Transition

- Dependency ratio or supportive ratio
- Gradual shift of the dependency burden from younger to older population over time period, with several far-reaching policy implications in future years.

Biological changes

Aging

- A process of deterioration in the functional capacity of organism that occurs after maturity resulting from structural changes & it is a

consequence of the inability of the organism to restore homeostasis when given a challenge.

- Aging means predictable, progressive, universal deterioration in various physiological systems, mental and physical, behavioural and biomedical.

Physiological Changes in Aging

Cardiovascular

- Total cell mass ↓
- Fat storage up to 65-70 ↑
- Central and Peripheral Neuronal network ↓
- Myocardial cells ↓
- Tissue compliance/dispensability ↓

Special senses

- Reaction speed ↓
- Acuity ↑

Thermo-regulation

- Tolerance to heat ↓
- Sweating ↓
- Vasodilation ↓
- Skin fold thickness ↑

Respiratory

- Bronchial cilliary function ↓
- Dyspnoea ↑
- Mucous accumulation ↑
- Alveolar exchange surface ↓
- Dead space ↑

Aerobic Power

- Decline
- Self-paced: Machine paced Compliance ↓

Nervous system

- Cell and fibre loss ↑
- Neuro-axonal degeneration ↑
- Central conduction ↓
- Catecholamine synthesis ↓
- Catecholamine disposal ↑

Muscle strength

- Muscle mass ↓
- Muscle diameter ↓
- Speed of contraction ↓
- Max. voluntary strength ↓
- Control of movements ↓

Bone

- Mass and Mineralization ↓
- Osteoporosis ↑

Musculoskeletal disorders

- Tendon elasticity ↓
- Joint flexibility ↓

Physiological and Structural Changes Leading to Alterations in Diet

Affected part of the body	Changes in aging	Alterations of nutritional needs and dietary pattern
Taste buds	Atrophy of certain types of taste buds	Lowered threshold of certain taste especially for sweet and sour foods
Teeth	Loss of teeth	Difficulty in mastication (chewing) & preference for soft mashy food and liquid foods
Stomach	Gets smaller with ↓ gastric enzymes	The common practice of two big meals a day cause gastric discomfort and digestive disturbance
Intestinal tract	Atrophy of muscles of intestine leading to reduced motility (**lazy intestine**) & ↓ reduced digestive enzyme	Undigested foods remain in the intestine for a longer time resulting in gas formation & constipation and other type of intestinal disorders

4 simple rules for Elderly diet

- Divide the daily food intake into 3 to 4 small meals.
- Should eat foods like fruits, vegetables, which needs some chewing.
- Advise them to take foods containing fibres like course cereals & vegetables.
- Avoid fatty foods.

Psychological issues in old age

- Life Satisfaction
- Loneliness
- Adjustment and Well-being
- Cognitive Changes

Social changes in old age

- Widowhood
- Retirement

- Adjustment to retirement goes through...
- **Initial phase:** involvement in a variety of self-selected activities.
- **2nd stage:** reality of poor economic and health status, and lack of meaningful activities lead to a feeling of disenchantment.
- **Reorientation phase:** People make realistic plans and develop alternatives.
- **Period of stability:** If they are successful.
- **Termination phase:** involves coping with illness or declining resources with age.

- Loss of Social Status
- Agism and Generation Gap

- **Agism:** prejudice and discrimination leveled by one age group against another
- **Generation Gap:** consists of differing values, attitudes, and life

styles between young & old people.

- Changes in Family and Living Arrangements

Determinants of active and graceful aging

- Gender and Culture
- Social Services and Social Networking
- Health System
- Economic Factors – Income, Work & Social Protection
- Factors in Physical Environment
- Personal Factors

Health promotion in old age

Physical Activity

Participation in regular, moderate physical activity

- Delay functional declines & reduce the risk of chronic disease
- Improves mental health
- Promotes social contacts
- Maintain their activities of daily living as independently
- Economic benefits - Medical costs are substantially lower

Physical Activity

- In very poor segment of the society - engaged in strenuous physical work.
- May cause injuries & disabilities.
- Health promotion efforts-providing relief from repetitive & strenuous tasks.

Healthy Eating

1. Malnutrition

Under-nutrition

- Limited access to food, tooth loss, socio-economic hardships, a lack of nutritional knowledge and information, excess calorie consumption

Excess calorie consumption

- Increases an older person's risk for chronic diseases and disabilities

2. Addictions

- Serious disabilities and to die prematurely
- Exposure to second hand smoke - asthma or other respiratory problem
- Quitting in older age can substantially reduce one's risk for heart, stroke, lung cancer, and fractures of hip and spine.
- Greater risks for alcohol related falls, injuries & dementia

3. Medications

- Low incomes - little or no access to insurance for medications.
- Wealthier countries - over-prescribed
- Adverse drug-related illnesses
- Hospital admissions
- Demand will continue to rise for medications
- To delay & treat chronic diseases, alleviate pain and improve quality of life.
- Affordable access to essential, safe medications and to better ensure the appropriate, cost-effective use of current and new drugs.

Risk factors of common morbidities in elderly and their management

Cardiovascular Disease Hypertension

- ✓ SBP>140 mm Hg & DBP > 90 mm Hg
- ✓ Dyslipidaemia Smoking:
- ✓ Obesity and Physical Inactivity:
- ✓ Diabetes
- ✓ Psychosocial Factors
- ✓ Non-modifiable Risk Factors:

Osteoporosis

- ✓ Age related decline in bone mineral density

- ✓ Postmenopausal oestrogen deficiency - 4 to 8 times higher.
- ✓ Prevention & management
- ✓ Consumption of diet rich Ca & vitamin D
- ✓ Avoidance of tobacco & alcohol – Brisk & weight bearing physical exercises

Accidents & falls

✓ Related to age related changes in sensory system & musculoskeletal system.

Avoiding accidents

- ✓ Slip resistant flooring materials
- ✓ Non-slip tread caps
- ✓ rubberized mats Rubberised mat

Functional ability and dependence

Older person will not be able to undertake their responsibilities without the help of others.

- Physical Dependency
- Economic Dependency
- Mental Dependency
- Social Dependency

Evaluation of functional ability

Ability to function in the arena of everyday living - ability of an individual to perform a simple or complex task.

- Mobility
- Personal self-care
- Instrumental self-care

Functional assessment

Goals of Functional Assessment

1. To improve diagnostic accuracy
2. To guide the selection of interventions to restore or preserve health

3. To recommend an optimal environment for care
4. To predict outcomes
5. To monitor clinical change over time.

Functional assessment

- **Mobility: -** To identify any functional limitation in mobility, ambulation on level surface.
- Basic Activities of Daily Living (ADL): fundamental task and activities necessary for survival, hygiene and self-care within the home.
- **Typical ADL battery**

- Eating
- Bathing
- Grooming
- Dressing
- Bed mobility & transfer

- Instrumental activities of daily living (IADL): – essential to live independently – Eg: cooking, shopping, washing, housekeeping & ability to drive.
- Recreation
- **Work**

- Always consider the conditions of work itself
- Working the anticipated number of hours each day
- Requirements of the job have been modified
- Quality of work done has met the anticipated standard of performance.

Functional assessment

- Walking up 10 steps without resting
- walking quarter of a Km
- sitting for two hours

- stooping or kneeling
- standing for two hours
- reaching up over head
- reaching out to shake hands
- grasping with fingers
- lifting or carrying weight

Instruments for Functional Assessment

- Barthel Index
- IADL Scales
- Katz Index of Activities of Daily Living
- Functional Independence measure
- Obgler American Resources and Services (OARS) Multi-dimensional functional Assessment Questionnaire.
- Philadelphia Geriatric Care Multilevel Assessment Instrument.
- Physical Self-Maintenance Scale (ADL)

Care for elderly

Home Care

- Best place for providing care giving.
- No environment more beneficial for a patient
- Due to family discord/friction.
- Related member or an unrelated paid attendant.

External care worker

- His/her level of training and maturity.
- The carer needs to be familiarized with the patients an individual- with his likes and dislikes, his hobbies etc. as this will help in the rapport building.
- The family as a system has to be supportive towards the carer and understand their need for respite, stress reduction etc.

Geriatric Day Care: Ideal Solution

Benefit of the home environment as well as special attention at the Day Care.

Institutionalization

- Common reasons
- The patients need for skilled nursing.
- The doctor insists.
- The caregiver cannot manage the patient's behavioural problem.
- Problem with home-health aides.
- The caregiver is emotionally exhausted.
- The caregiver becomes ill or dies.

Ministry of social justice & empowerment

(Nodal ministry responsible for the welfare of the aged)

1. National policy on older persons

- January 1999
- Aims to strengthen their legitimate place in society and help older people to live the last phase of their life with purpose, dignity and peace.
- Provides a broad framework for inter sector-al collaboration and cooperation both within the government as well as between government and nongovernmental agencies.
- Identified a number of areas of intervention; financial security, health care and nutrition, shelter, education, welfare, protection of life and property etc. for the wellbeing of older persons in the country.
- Recognizes the role of the NGO sector in providing user friendly affordable services to complement the endeavours of the State in this direction.
- Emphasises the importance of family in providing vital non formal social security for older persons.

2. National council for older persons

- Chairperson of the Minister of State for Social Justice and Empowerment
- 1999
- To operationalise the National Policy on Older Persons.
- Designated office for receiving suggestions, complaints and grievances from individual older persons.

3. Schemes of the ministry

- Scheme of Assistance to Panchayati Raj Institutions/Voluntary Organizations/ Self Help Groups for construction of old age homes/multi service centres for older persons
- Up to 90% of the cost of the project indicated in the scheme will be provided by the Government of India and the remaining shall be borne by the organization/ institution concerned.

4. Old Age pension for the general Public

- Indira Gandhi national old age pension scheme (IGNOAPS)
- 19th November, 2007
- All BPL families
- All persons of 65 years or above
- Central Assistance at the rate of Rs. 200 per month per beneficiary.
- States have been urged to give matching amounts.

5. Annapurna

- Free food grains (wheat or rice) up to 10 Kg. Per month are provided to older persons,
- 65 years or above who are otherwise eligible for old age pension under the National Old Age Pension Scheme,
- But are not receiving it.

Insurance schemes

1. **Rashtriya Swasthya Bima Yojana**

   - 1st April 2008
   - Ministry of Labour and Employment, GOI.
   - To provide health insurance coverage for BPL families.

2. **Varistha Mediclaim Policy**

   - Covers hospitalization and domiciliary hospitalization expenses
   - Expenses for treatment of critical illnesses
   - Coronary artery surgery, cancer, renal failure, stroke, multiple sclerosis and major organ transplants. Paralysis and blindness are covered at extra premium.

Prevention

- Primordial prevention
- Pre geriatric care
- Regular & moderate physical activity since childhood.
- Optimum nutrition
- Abstain from smoking & alcohol avoid self-medication
- Making hobbies of reading, writing, listening to music
- Financial security in adulthood itself –OASIS (Old age social & income security.

Primary prevention

- Health education
- Immunization
- Lowering blood pressure
- General dental services
- Exercise
- nutritional intervention
- Hormone replacement therapy

Secondary prevention

- Screening for diseases
- ✓ DM- fasting and random blood sugar estimation
- ✓ Breast ca – mammography
- ✓ cervical ca – pap smear
- ✓ lung ca – chest x-ray low dose CT scan
- ✓ colorectal ca – feocal occult blood, sygmoidoscopy
- Screening for ocular diseases
- ✓ Diabetic retinopathy, glaucoma.
- Hearing evaluation

Tertiary prevention

- Counselling and Rehabilitation
- Welfare activities (Niradhar Yojana,)
- Chiropody services
- Dental care

Improving quality of life

- Cultural programme
- Old age club
- Meals-on wheel service
- Home help
- Old age home (Vruddhashrama)

Geriatric Health Team

- Geriatricians
- Nurses
- Physiotherapist
- Health worker
- Social worker

National programme of health care for the elderly

Goal

Improve the access to promotive, preventive, curative & emergency health care among elderly persons.

Objective

- Comprehensive health care to elderly
- Train health professionals in geriatrics
- Develop scientific solutions to specific elderly health problems

Strategies

- ✓ **Level 1-** Home based health service
- ✓ **Level 2-** Community based health centre
- ✓ **Level 3-** An improved hospital-based support service with, focused health care needs at the institute

National policy on older persons

- Financial security.
- Healthcare & nutrition.
- Increased standard tax deduction for senior citizens.
- Legislation on parents right to be supported by their children.
- Regulatory authority to monitor pension funds.
- Easy access to housing loans
- Special provision for protection of older persons

NGO's working for elderly in India

- Helpage India
- Age care India
- Elder home society
- Care of the elderly – age care centre for retired air force personnel
- International Medical Sciences Academy

Functions of NGO's

- Create an awareness & understanding among masses about the problems of older persons.
- To raise funds
- Play the role advocacy for older persons
- To organize relief measures for elderly persons
- mobile medical programmes
- cataract operational camps
- geriatric centres
- domiciliary care
- set up elder homes & hospitals
- vocational rehabilitation

Days & themes for elderly

- **October 1 -** International day of the elderly
- **September 21 -** Alzheimer's day
- **June 15 -** World elder abuse awareness day
- **WHO theme 1999 -** Active aging make the difference?

External environment support

The need for a supportive environment Supportive environment, both physical and social, are not only key determinants of health but also essential conditions for healthy ageing. The World Health Organization defines health broadly as a person's physical, psychological and social well-being. The notion of healthy age denotes a change in the perception of ageing, from the preoccupation with illness management to the promotion of conditions that support health.

A number of factors can contribute to an older adult's quality of life, many of which relate to their surrounding environment. A recent study of 1,031 older adults looked at four different facets of an older adult's quality of life and examined which types of environmental factors impacted each facet, as well as the extent to which environmental factors influenced quality of life scores.

The four aspects of quality of life that the study looked at were

- Social,
- Physical,
- Psychological,
- And environmental.

The social aspect covers personal relationships, social support, and sex life. The physical health aspect includes mobility, daily activities, functional capacity, energy, pain, and sleep.

The psychological includes

- Self-image,
- Negative thoughts,
- Positive attitudes,
- Self-esteem, and
- Mental status.

The environmental aspects include

- Financial resources,
- Safety,
- Health and
- Social services,
- Living environment,
- Opportunities to acquire new skills and knowledge,
- Recreation,
- General environment (noise, air pollution, etc.),
- And transportation.

The examined environmental factors potentially impacting quality of life scores were

- Housing (comfort, size, overall satisfaction with living space, etc.),
- Facilities,
- Residents (interactions with neighbours, behavior of neighbours,

etc.),

- Nuisance (vandalism, crime, social insecurity, etc.),
- neighbourhood,
- stench/noise,
- And traffic.

Not surprisingly, all the environmental factors examined were shown to impact environmental quality of life scores. Taken together, these factors accounted for 24% of the variance in environmental quality of life scores, with facilities having the greatest effect on scores. The next most impacted quality of life area was the psychological.

Here, environmental factors accounted for 11% of the variation, but only two of the environmental factors were statistically associated with this effect on psychological quality of life: housing and residents. Just over 9% of the physical health quality of life scores were accounted for by environmental factors. For physical quality of life, the only two significant environmental factors were housing and nuisances. Just under 9% of the variance in social quality of life scores was accounted for by environmental factors. Here the significant factors were housing and residents.

Looked at another way, housing was associated with all quality of life areas examined, with residents impacting all but the physical factor. On the other hand, nuisances were associated with physical and environmental quality of life scores. Based on these three environmental aspects affecting multiple aspects of quality of life, the authors suggest focusing interventions primarily on these factors to best support older adults' quality of life.

External environment support

Unsafe Exterior Environments Pose Barriers to Aging with Independence

- Every level of the environment supports or inhibits function and health. From the neighbourhood surrounding an older adult's home, to the steps leading up to their front door, to the interior of the house and each room - all of these environments affect an older adult's ability to function well enough to age-in-place.

Neighbourhood

- Neighbourhood of residence can affect health and safety in later life. This is particularly true in urban settings where factors such as

broken or littered sidewalks and busy streets, a lack of safe spaces to exercise, or the geography of gun violence and other threats pose risks that keep some older adults indoors. Some neighbourhoods also contain food "deserts", meaning places lacking markets with ready supplies of produce and other options essential to a healthy diet.

- Unsafe neighbourhoods not only prevent older adults from engaging in the types of activities associated with sustaining an independent living situation (e.g. shopping, medical appointments, outdoor exercise); they can also interfere with older adults' ability to visit the places many associate with a high quality of life (e.g. green spaces, houses of worship, senior centres, the homes of family and friends).
- Similarly, other barriers which may be more common to suburban and rural environments, such as the absence of sidewalks and other walkwa ys, adequate lighting, and public transportation; geographic features such as steep inclines; or natural features such as mud and brush, can render older adults homebound.

House exterior

- Upon opening their front doors, many older adults are essentially stuck at the top of their own front steps due to broken stairs, a lack of adequate railings, or stairs that are too steep or slippery for many older adults' increasingly weak leg muscles to navigate. Each time they descend these steps or return, these individuals face the risk of falling, which can lead to serious injury or even death.
- Unsafe stairs pose a threat when older adults *must* go out (for example, to attend a medical appointment) and also bar exiting the home for 'optional' activities such as volunteer work, socializing with friends and family, or participating in religious services.
- These disparities in housing conditions can lead to health disparities as community-dwelling older adults derive benefits from social engagement outside of their home such as caregiving for friends or neighbours, working part-time, or attending church and family activities. Onset of functional decline, which can put older adults at-risk when entering or exiting their homes if proper safety measures are not in place, have been linked to cessation of these types of potentially-beneficial activities.

Unsafe Home Interiors Can Pose Even Greater Threats to Aging with Independence

- Although unsafe exterior environments, such as communities with neighbourhood violence and broken sidewalks, pose some of the most visibly obvious threats to the health and well-being of older persons, often the most dangerous place for these adults is *inside* their own homes.
- Interactions between underlying health conditions and unsafe home interiors result in functional limitations that not only place older adults at-risk for injury, but also prevent them from doing the things they associate with living well.
- Given the daunting challenges of addressing the problems that may exist outside an older adult's home, the rest of this article focuses on strategies for supporting aging with independence by addressing the safety issues that often exist inside older adults' homes and contribute to functional limitations in later life.

Fall risk and the home environment

- One in three adults fall every year with subsequent morbidity including nursing home admission and mortality. Not only are the falls dangerous, but so is remaining on the ground if unable to arise. Individual (intrinsic) factors contributing to falls include decreased mobility, decreased balance, decreased vision, and medications that act on the Central Nervous System. External (extrinsic) factors are equally important and include clutter, uneven or hole-ridden floors, inadequate railing or banisters, steep stairs, oxygen tubing, wires in walking spaces, and slick surfaces such as bathroom floors.
- Finally, there are extrinsic factors that are made more dangerous by interactions with intrinsic factors. For example, slippery bathtubs with high sides in the home of someone with poor balance, toilets without grab bars in the home of someone with weak legs.

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