CHAPTER THREE
IDENTIFICATION AND DIFFERENTIATED SERVICES

- **Chapter Overview**

The onset of disability is accompanied by a complex series of shocks to the individual and to everyone around him. The impact of disability and vulnerability take many form. The immediate effects are often physical pain, limitation of mobility, disorientation, confusion, uncertainty and a disruption of roles and patterns of social interaction. Peoples with disabilities and vulnerabilities have survival (physiological), safety, social, esteem, and self actualization (fulfillment) needs like persons without disabilities.

Learning Outcomes

At the end of this chapter, you are expected to:

- Discuss the impact of disability and vulnerability on daily life of persons with disabilities and vulnerabilities.
- Depict needs of persons with disabilities and vulnerabilities
- describe the effects of environment on the life of persons with disabilities and vulnerabilities.
- Describe intervention and rehabilitation approaches for disabilities and vulnerabilities.
- depict barriers for inclusive services provisions in different sectors
- describe the role technologies in the life of persons with disabilities
- relate the concept of inclusiveness to their specific profession
- Evaluate inclusiveness of services provision in their specific fields of studies

Impact of Disability and Vulnerability on Daily Life

Factors related to the person

People respond to disabilities in different ways. Some react negatively and thus their quality of life is negatively affected. Others choose to focus on their abilities as opposed to their disabilities and continue to live a productive life.

The following are often considered the most significant factors in determining a disability's impact on an individual.

1. **The Nature of the Disability**: Disability can be acquired (a result of an accident, or acquired disease) or congenital (present at birth). If the disability is acquired, it is more likely to cause a negative reaction than a congenital disability. Congenital disabilities are disabilities that have always been present, thus requiring less of an adjustment than an acquired disability.
2. **The Individual’s Personality**
3. **The Meaning of the Disability to the Individual**
4. **The Individual’s Current Life Circumstances**
5. **The Individual's Support System** - The individual‘s support from family, a significant other, friends, or social groups.

The disability experience resulting from the interaction of health conditions, personal factors, and environmental factors varies greatly.

Health conditions can be visible or invisible; temporary or long term; static, episodic, or degenerating; painful or inconsequential. Note that many people with disabilities do not consider themselves to be unhealthy.

People who experience mental health conditions or intellectual impairments appear to be more disadvantaged in many settings than those who experience physical or sensory impairments. People with more severe impairments often experience greater disadvantage.

People with disabilities and vulnerabilities live with challenges that impact their abilities to conduct Activities of Daily Living (ADL). Disability and vulnerabilities can limit or restrict one or more ADLs, including moving from one place to another (e.g., navigation, locomotion, transfer), maintaining a position (e.g., standing, sitting, sleeping), interacting with the environment (e.g., controlling systems, gripping objects), communicating (e.g., speaking, writing, hand gestures), feeding (chewing, swallowing, etc.), and perceiving the external world (by movement of the eyes, the head, etc.), due to inaccessible environment.

Many older persons face one or more impairments.

Economic Factors and Disability

There is clear evidence that people with few economic assets are more likely to acquire pathologies that may be disabling.

The impact of absolute or relative economic deprivation on the onset of pathology crosscuts conditions with radically different etiologies, encompassing infectious diseases and most common chronic conditions. Similarly, economic status affects whether pathology will proceed to impairment.

The economic status of the community may have a more profound impact than the status of the individual on the probability that disability will result from impairment or other disabling conditions.

Community can be defined in terms of the microsystem (the local area of the person with the disabling conditions), the mesosystem (the area beyond the immediate neighborhood, perhaps encompassing the town), and the macrosystem (a region or nation).

Clearly, the economic status of the region or nation as a whole may play a more important role than the immediate microenvironment for certain kinds of disabling conditions.

For example, access to employment among people with disabling conditions is determined by a combination of the national and regional labor markets. In contrast, the economic status of a neighborhood will play a larger role in determining whether there are physical accommodations in the built environment that would facilitate mobility for people with impairments or functional limitations, or both.

Finally, economic factors also can affect disability by creating incentives to define oneself as disabled.

Moreover, disability compensation programs often make an attempt to return to work risky, since health insurance is withdrawn soon after earnings begin and procuring a job with good health insurance benefits is often difficult in the presence of disabling conditions.

Political Factors and Disability

The political system, through its role in designing public policy, can and does have a profound impact on the extent to which impairments and other potentially disabling conditions will result in disability. If the political system is well enforced it will profoundly improve the prospects of people with disabling conditions for achieving a much fuller participation in sociehty, in effect reducing the font of disability in work and every other domain of human activity.

***Factors* Psychological of Disability**

The argument in support of the influence of the psychological environment is congruent with the key assumption in this chapter that the physical and social environments are fundamentally important to the expression of disability.

Several constructs can be used to describe one's psychological environment, including personal resources, personality traits, and cognition. These constructs affect both the expression of disability and an individual's ability to adapt to and react to it.

For illustrative purposes four psychological constructs will be briefly discussed: three cognitive processes (self-efficacy beliefs, psychological control, and coping patterns) and one personality disposition (optimism). Each section provides examples illustrating the influence of these constructs on the experience of disability.

a) Social Cognitive Processes

Cognition consists of thoughts, feelings, beliefs, and ways of viewing the world, others, and ourselves. Three interrelated cognitive processes have been selected to illustrate the direct and interactive effects of cognition on disability. These are self-efficacy beliefs, psychological control, and coping patterns which all these are socially constructed.

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b) Self-Efficacy Beliefs

Self-efficacy beliefs are concerned with whether or not a person believes that he or she can accomplish a desired outcome (Bandura, 1977, 1986). Beliefs about one's abilities affect what a person chooses to do, how much effort is put into a task, and how long an individual will endure when there are difficulties. Self-efficacy beliefs also affect the person's affective and emotional responses.

Under conditions of high self-efficacy, a person's outlook and mental health status will remain positive even under stressful and aversive situations. Under conditions of low self-efficacy, mental health may suffer even when environmental conditions are favorable. Improved behavioral and functional outcomes under efficacious conditions for individuals with and without disabling conditions. How do self-efficacy beliefs affect disability?

c) Psychological Control

Psychological control, or control beliefs, is akin to self-efficacy beliefs in that they are thoughts, feelings, and beliefs regarding one's ability to exert control or change a situation. Self-generated feelings of control improve outcomes for diverse groups of individuals with physical disabilities and chronic illnesses. The onset of a disabling condition is often followed by a loss or a potential loss of control. What is most critical for adaptive functioning is how a person responds to this and what efforts the person puts forth to regain control.

d) Coping Patterns

Coping patterns refer to behavioral and cognitive efforts to manage specific internal or external demands that tax or exceed a person's resources to adjust. Generally, coping has been studied within the context of stress. Having a disabling condition may create stress and demand additional efforts because of interpersonal or environmental conditions that are not supportive. Several coping strategies may be used when a person confronts a stressful situation. These strategies may include the following: seeking information, cognitive restructuring, emotional expression, catastrophizing, wish-fulfilling fantasizing, threat minimization, relaxation, distraction, and self-blame. The effects of certain coping efforts on adaptive and functional outcomes benefits individuals with disabling conditions.

In general, among people with disabling conditions, there is evidence that passive, avoidant, emotionfocused cognitive strategies (e.g., catastrophizing and wishful thinking) are associated with poorer outcomes, whereas active, problem-focused attempts to redefine thoughts to become more positive are associated with favorable outcomes. An adaptive coping pattern would involve the use of primary and secondary control strategies. What seems useful is the flexibility to change strategies and to have several strategies available.

Active coping is a significant predictor of mental health and employment-related outcomes. Under conditions in which individuals with disabling conditions use active and problem-solving coping strategies to manage their life circumstances, there will be better functional outcomes across several dimensions (e.g., activities of daily living, and employment) than when passive coping strategies are used. An important component in the coping process is appraisal.

Appraisal is related to self-efficacy in the sense that one's thoughts and cognition control how one reacts to a potentially negative situation.

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e) Personality Disposition

- Optimism and other interrelated personality factors could be discussed (e.g., self-esteem, hostility, and Type A personality).
- Optimism (in contrast to pessimism) is used for illustrative purposes because it relates to many other personality traits. Optimism is the general tendency to view the world, others, and oneself favorably. People with an optimistic orientation rather than a pessimistic orientation are far better across several dimensions. Optimists tend to have better self-esteem and less hostility toward others and tend to use more adaptive coping strategies than pessimists.
- Optimism is a significant predictor of coping efforts and of recovery from surgery. Individuals with optimistic orientations have a faster rate of recovery during hospitalization and a faster rate of return to normal life activities after discharge. Optimism may reduce symptoms and improve adjustment to illness, because it is associated with the use of effective coping strategies.
- Optimistic individuals are more likely to cope with impairment by using the active adaptive coping strategies. These in turn will lead to reduced disability.

The four constructs of the psychological environment (i.e., self-efficacy beliefs, psychological control, coping patterns, and optimism) were highlighted to illustrate the influence of these factors on disability and the enabling-disabling process. Psychological interventions directed at altering cognition lead to improved outcomes (i.e., achievement, interpersonal relationships, work productivity, and health) across diverse populations and dimensions.

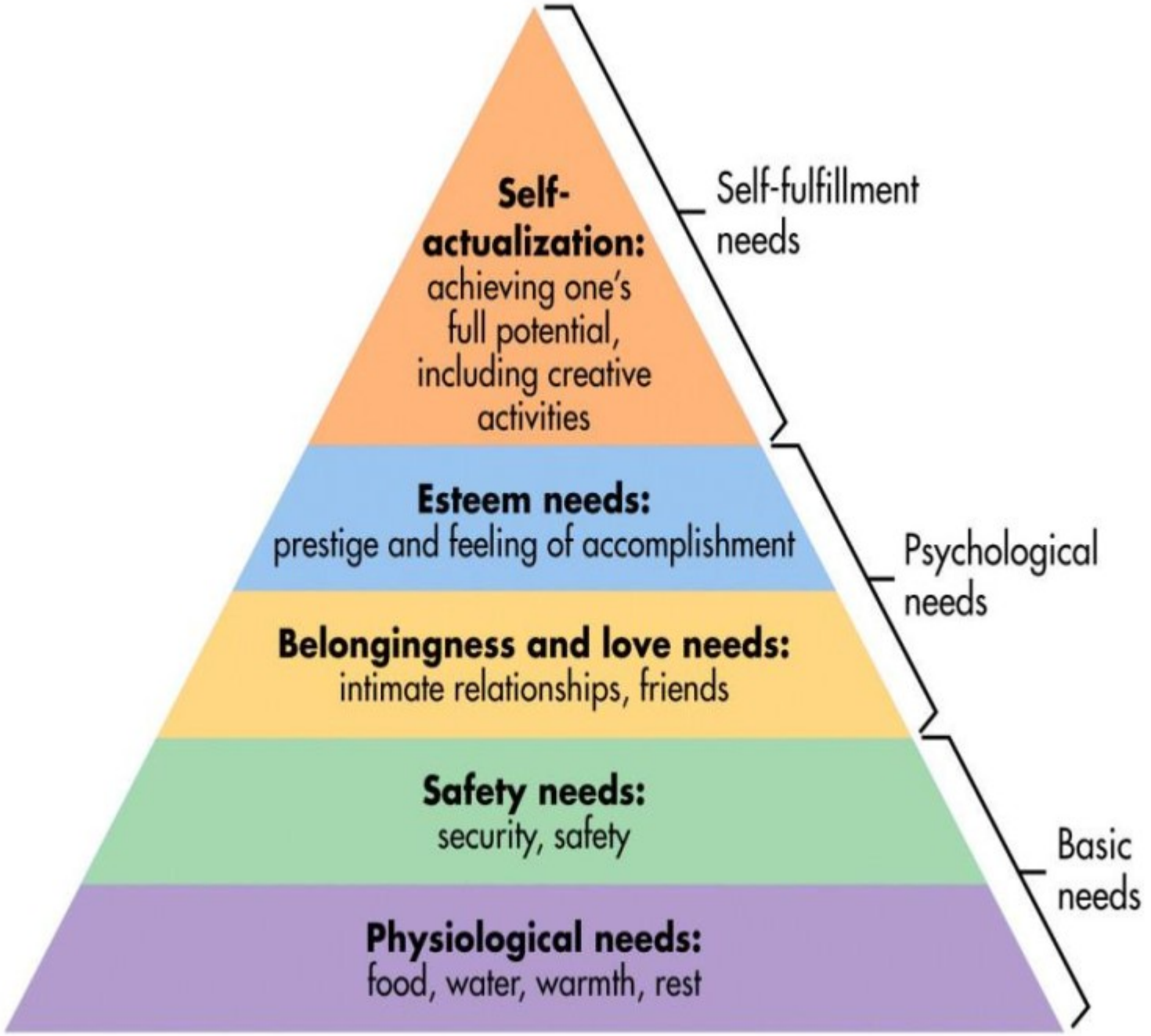
The Family and Disability

- The family can be either an enabling or a disabling factor for a person with a disabling condition. Although most people have a wide network of friends, the networks of people with disabilities are more likely to be dominated by family members. Even among people with disabilities who maintain a large network of friends, family relationships often are most central and families often provide the main sources of support. This support may be instrumental (errand-running), informational (providing advice or referrals), or emotional (giving love and support).
- Families can be enabling to people with functional limitations by providing such tangible services as housekeeping and transportation and by providing personal assistance in activities of daily living. Families can also provide economic support to help with the purchase of assistive technologies and to pay for personal assistance. Perhaps most importantly, they can provide emotional support. Emotional support is positively related to well-being across a number of conditions. In all of these areas, friends and neighbors can supplement the support provided by the family. It is important to note, however, that families may also be disabling. Some families promote dependency.

Needs of Persons with Disabilities and Vulnerabilities.

People with disabilities do not all share a single experience. Analyzing the human beings, Maslow has identified five categories of needs, with different priority levels, in the following order: survival (physiological), safety, social needs, esteem, and self-actualization (fulfillment).

- Maslow‘s model is also valid for persons with disabilities and vulnerabilities, whose needs are similar to those of ordinary persons. Nevertheless, many of these needs are not fulfilled, so disabilities and vulnerabilities seek to fulfill these needs and reach a state of wellbeing. Initially, disabilities and vulnerabilities attempt to fulfill the first level of needs (survival). The **survival needs** are formed by the physiological needs and include the biological requirements for feeding, performing hygiene, sleeping, ADL, and so on. When disabilities and vulnerabilities fulfil their survival needs, they will look for situations that keep them safe, before moving up the chain and fulfill their needs to be part of society and to achieve. As an example of needs in terms of safety, consider a person with visual impairment who wishes to cross the street safely. In contrast, for the elderly, at risk and street children safety might represent the ability to obtain emergency help after falling and not being able to stand again.
- **Social** need is a key element that disabilities and vulnerabilities would like to develop continuously. For example, a person with a hearing impairment suffers from a diminution of social contact, while someone with a motor disability feels excluded from social activities. The third level of the pyramid relates to **esteem**, both self-esteem and being favorably recognized by others. Esteem is often related to the capability of achieving things, contributing to a work activity and being autonomous.


Self-actualization: achieving one's full potential, including creative activities
Esteem needs: prestige and feeling of accomplishment
Belongingness and love needs: intimate relationships, friends
Safety needs: security, safety
Physiological needs: food, water, warmth, rest
Self-fulfillment needs
Psychological needs
Basic needs

Persons with disabilities and vulnerabilities have socio-emotional, psychological, physical and social environmental and economic needs in general. The following list but not last are basic needs of persons with disabilities and vulnerabilities to ensure equality for all within our society.

a) Full access to the Environment (towns, countryside & buildings)
b) An accessible Transport system
c) Technical aids and equipment
d) Accessible/adapted housing
e) Personal Assistance and support
f) Inclusive Education and Training
g) An adequate Income
h) Equal opportunities for Employment
i) Appropriate and accessible Information
j) Advocacy (towards self-advocacy)
k) Counseling
l) Appropriate and Accessible Health Care

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Social Needs of Persons with Disabilities and Vulnerabilities

Social protection plays a key role in realizing the rights of persons with disabilities and vulnerabilities of all ages: providing them with an adequate standard of living, a basic level of income security; thus reducing levels of poverty and vulnerability.

Social protection measures may include poverty reduction schemes; cash transfer programs, social and health insurance, public work programs, housing programs, disability pensions and mobility grants.

Social protection from a rights-based approach must accommodate the needs of persons with disabilities and vulnerabilities.

Traditional disability-related social welfare schemes have mainly focused on poverty rather than taking into account specific challenges faced by persons with disabilities and vulnerabilities; particularly active participation in education, access to health and employment.

Previous methods of addressing benefits for persons with disabilities have shown limited progress in overcoming the deeply-rooted social structures and practices that hinder opportunities for persons with disabilities. Consequently, social protection needs to move beyond traditional welfare approaches to intervention systems that promote active citizenship, social inclusion and community participation while avoiding paternalism and dependence.

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The right of persons with disabilities to social protection is recognized by the ***1948 Universal Declaration of Human Rights (UDHR),*** the ***1966 International Covenant on Economic, Social and Cultural Rights (ICESCR)*** and, more specifically, the ***2006 UN Convention on the Rights of Persons with Disabilities (CRPD)***.

Article 28 of the CRPD in particular recognizes *the right of persons with disabilities to an adequate standard of living and to social protection, ensuring the enjoyment of both rights without discrimination on the basis of ability*. Therefore, States parties should take appropriate measures to ensure that they receive equal access to mainstream social protection programs and services —including basic services, social security systems, poverty reduction programs and housing programs— but also specific programs and services for disability-related needs and expenses.

Furthermore, ***the Social Protection Floors Recommendation (No. 202)*** recognizes the importance of national social protection floors to provide basic social security guarantees to all persons, including persons with disabilities and

vulnerabilities, across the life cycle (with priority given to poverty, vulnerability, and social exclusion).

Gender and disability

The importance of work and the daily activities required of living in the country are paramount in considering gender. For the male and female with disabilities and vulnerable groups, work is universally seen as important, whether paid work or voluntary.

Many of male and females with disabilities have creativity and skill in finding ways to do things and consequently being able to build friendships with other men in their communities. Work, particularly paid work, is also important for many of the female contributors.

Sustaining this in the face of community views about disability is at times difficult, particularly when it is balanced with expectations of traditional women‘s roles of home making and childcare.

Identity and disability

The relational nature of identity seems to be of central importance to people with disabilities and a rural environment in some instances provides a different way for people to be perceived by others and by themselves. People with disabilities are not primarily clients or service users but rather are known members of their communities with a shared and, at times, intergenerational history.

Identity marked by disability is complex and multilayered; relationships, outside of paid, formalized service settings. Services are facilitators of a rural life, rather than the focus of rural life itself. New technologies, determination and interests shape differing identities for people who are active agents in their own lives.

This is not to argue that rural living is an idyll for people with disabilities. For some, their interests and aspirations are elsewhere and they may be constrained by the necessity of living rurally either because of the needed support from families or a personal need for the refuge of rural living in times of difficulty.

Disability as part of an individual‘s identity is seen by some as a struggle. This is often twofold: internally to individuals and their sense of self and, too often, in the way they are perceived and constructed by those around them. An acquired disability is experienced as challenging the nature of one‘s internal pre-established identity and as a struggle to change the perceptions and attitudes of others and the physical environment in which a person lives.

Relations with family, friends and communities often provided a contradictory landscape, where a person has to negotiate his or her new disabled identity yet, at the same time, is able to draw upon previous shared experiences to become re-embedded in friendships and communities. Finding ways to gain value‘ in the local community with a disability is an ongoing and, too often, difficult journey. It is these very journeys that create one‘s identity and the relational nature of this identity to the rural landscape.

- **Belongingness and disability**

Belonging is a complex concept involving an attachment to place, relationships with others, a sense of safety, common values and a shared and/or developing history. Belonging is also an internal sense of being at home in one‘s own body and mind. Persons with disabilities and vulnerable groups have struggled to come to terms with a body and mind which seem unfamiliar to them, in which they have to make adjustments or accommodations both for themselves and in terms of their relationships with others. This internal negotiation and navigation shape their engagement with their social worlds, particularly in rural communities.

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Persons with disabilities in rural areas should have a strong attachment to place, somewhere familiar and known where they can feel safe, find their ways alone, exercise autonomy and express their embodied selves.

Family relationships as a means of connecting to community and being known by others, and knowing others outside the family are important.

Historically for people with disabilities, rurality was once the site of exclusion, rather than belonging, where identity and gender were disregarded in favor of ensuring protection of people with disabilities and of the society in which they lived.

People with disabilities and marginalized groups feel isolated. Some persons with disabilities have actively sought to migrate to urban environments, to escape from the confines and constraints of small rural

environments and to build broader social networks away from the farm.

3.2.1.4 Intersectionality

Social structures and norms surrounding age are particularly significant, shaping the kind of lives people have and their experience of gender and identity. They have particular implications for people‘s attachment to place and their aspirations and desires for the future.

Age matters, too, in terms of the support that family and services can offer in a rural environment and the types of age-appropriate opportunities that can be facilitated in the person‘s home, family and community. Being a particular age in a rural landscape has implications for the types of social relationship that are openly facilitated and enabled.

The wider contextual values and economic and social changes have also impact on the life of persons with disabilities. Religious values that shape the way disability is constituted in some countries are a powerful influence on the way people with disabilities are able to live their lives. These values intersect with societal expectations of gender roles.

Many peoples with disabilities are subjected to being viewed as objects of pity and prevailing myths about their capacities, socially and individually. These social myths are key sites of struggle and, as suggested earlier, are deeply intertwined with a person‘s own subjective understandings of gendered identities and sense of belonging as a person with a disability.

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Economic changes which have led to mass migration from the rural to the urban and increased the emphasis on citizens‘ economic contribution to society have also had an impact on rural living for some people. Further, structural changes, such as austerity and welfare retraction, in some countries have created unique pressures on some people with disabilities living in rural areas. These places may provide a space to hide, a place where one is known and familiar, and where one is sheltered from the negative attitudes that accompany government cutbacks. Such prevailing economic constraints also lead to new forms of isolation.

The experience of having a disability and not being on welfare is significantly different to that of people with disabilities whose economic security depends on what has become highly stigmatized support. The management of the self and of rural social relationships intersects deeply with these broader structural changes, and navigating such structural continuities and disruptions is a critical influence on the lives of people with disabilities.

Poverty has impact on living a decent life with a disability in a rural landscape, a life that they have defined and desired. In a number of cases this is centered on the need for paid work and the difficulties in finding it where employment is often scarce or highly exclusionary due to farming practices.

Importance of familial social networks and the additional support

Given the changing welfare environment, including the growing insecurity of disability support landscapes, many of the contributors express fears of the future.

The Health Care Needs of Persons with Disabilities and Vulnerabilities

People with disabilities report seeking more health care than people without disabilities and have greater unmet needs.

For example, a recent survey of people with serious mental disorders, showed that between 35% and 50% of people in developed countries, and between 76% and 85% in developing countries, received no treatment in the year prior to the study.

Health promotion and prevention activities seldom target people with disabilities. For example women with disabilities receive less screening for breast and cervical cancer than women without disabilities.

People with intellectual impairments and diabetes are less likely to have their weight checked. Adolescents and adults with disabilities are more likely to be excluded from sex education programs.

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People with disabilities are particularly vulnerable to deficiencies in health care services. Depending on the group and setting, persons with disabilities may experience greater vulnerability to secondary conditions, co-morbid conditions, age-related conditions, engaging in health risk behaviors and higher rates of premature death.

A) Secondary conditions: conditions occur in addition to (and are related to) a primary health condition, and are both predictable and therefore preventable. Examples include pressure ulcers, urinary tract infections, osteoporosis and pain.

B) Co-morbid conditions: conditions occur in addition to (and are unrelated to) a primary health condition associated with disability. For example the prevalence of diabetes in people with schizophrenia is around 15% compared to a rate of 2-3% for the general population.

C) Age-related conditions: The ageing process for some groups of people with disabilities begins earlier than usual. For example some people with developmental disabilities show signs of premature ageing in their 40s and 50s.

D) Engaging in health risk behaviors: Some studies have indicated that people with disabilities have higher rates of risky behaviors such as smoking, poor diet and physical inactivity.

Barriers to Health Care for Persons with Disabilities and Vulnerable Groups

People with disabilities encounter a range of barriers when they attempt to access health care including the following.

a) **Prohibitive costs:** Affordability of health services and transportation are two main reasons why people with disabilities do not receive needed health care in low-income countries - 32-33% of non-disabled people are unable to afford health care compared to 51-53% of people with disabilities.

b) **Limited availability of services:** The lack of appropriate services for people with disabilities is a significant barrier to health care.

c) **Physical barriers:** Uneven access to buildings (hospitals, health centers), inaccessible medical equipment, poor signage, narrow doorways, internal steps, inadequate bathroom facilities, and inaccessible parking areas create barriers to health care facilities.

d) **Inadequate skills and knowledge of health workers:** People with disabilities were more than twice as likely to report finding health care provider skills inadequate to meet their needs, four times more likely to report being treated badly and nearly three times more likely to report being denied care.

Addressing for Inclusive Barriers to Health Care

Governments and professionals can improve health outcomes for people with disabilities by improving access to quality, affordable health care services, which make the best use of available resources. As several factors interact to inhibit access to health care, reforms in all the interacting components of the health care system are required.

a) Policy and legislation: Assess existing policies and services, identify priorities to reduce health inequalities and plan improvements for access and inclusion. Make changes to comply with the CRPD. Establish health care standards related to care of persons with disabilities with enforcement mechanisms.

b) Financing: Where private health insurance dominates health care financing, ensure that people with disabilities are covered and consider measures to make the premiums affordable. Ensure that people with disabilities benefit equally from public health care programs. Use financial incentives to encourage health-care providers to make services accessible and provide comprehensive assessments, treatment, and followups. Consider options for reducing or removing out-of-pocket payments for people with disabilities who do not have other means of financing health care services.

c) Service delivery: Provide a broad range of modifications and adjustments (reasonable accommodation) to facilitate access to health care services. Empower people with disabilities to maximize their health by providing information, training, and peer support. Promote community-based rehabilitation (CBR) to facilitate access for disabled people to existing services. Identify groups that require alternative service delivery models, for example, targeted services or care coordination to improve access to health care.

d) Human resources: Integrate disability inclusion education into undergraduate and continuing education for all health-care professionals. Train community workers so that they can play a role in preventive health care services. Provide evidence-based guidelines for assessment and treatment.

Disability, vulnerability and the Environment

- The prevailing understanding about the cause of disability has undergone profound change worldwide. Previous models of absolute determinism that viewed pathology and disability interchangeably and that excluded consideration of the environment have been replaced by models in which disability is seen to result from the interaction between the characteristics of individuals with disabilities and the characteristics of their environment.
- Cultural norms affect the way that the physical and social environments of the individual are constituted and then focus on a few—but not all—of the elements of the environment to provide examples of how the environment affects the degree of disability.
- Because societies differ in their willingness to provide the available technology and, indeed, their willingness to provide the resources to improve that technology, disability ultimately must been seen as a function of society, not of a physical or medical process.
- Disability is not inherent in an individual but is, rather, a relational concept—a function of the interaction of the person with the social and physical environments. The amount of disability that a person experiences, depends on both the existence of a potentially disabling condition (or limitation) and the environment in which the person lives. For any given limitation (i.e., potential disability), the amount of actual disability experienced by a person will depend on the nature of the environment, that is, whether the environment is positive and enabling (and serves to compensate for the condition, ameliorate the limitation, or facilitate one's functional activities) or negative and disabling (and serves to worsen the condition, enhance the limitation, or restrict one's functional activities).
- When functional limitations exist, social participation is possible only when environmental support is present. If there is no environmental support, the distance between what the people can do and what the environment affords creates a barrier that limits social participation.
- The physical and social environments comprise factors external to the individual, including family, institutions, community, geography, and the political climate. Added to this conceptualization of environment is one's intrapersonal or psychological environment, which includes internal states, beliefs, cognition, expectancies and other mental states.
- Thus, environmental factors must be seen to include the natural environment, the human made environment, culture, the economic system, the political system, and psychological factors.

Some Enabling and Disabling Factors in the Physical Environment

Type of Factor	Type of Environment	
	Natural Environment	**Built Environment**
Enabling	Dry climate	Ramps
	Flat terrain	Adequate lighting
	Clear paths	Braille signage
Disabling	Snow	Steps
	Rocky terrain	Low-wattage lighting
	High humidity	Absence of flashing light alerting systems

The environmental mat may be conceived of as having two major parts: the physical environment and the social and psychological environments. **The physical environment may be further subdivided conceptually into the natural environment and the built environment.** Both affect the extent to which a disabling condition will be experienced by the person as a disability.

Three types of attributes of the physical environment need to be in place to support human performance.

The **first** attribute is **object availability**. Objects must be in a location that is useful, at a level where they can be retrieved, and must be organized to support the performance of the activity. Neither a sink that is too high for a wheelchair user nor a telecommunications device for the deaf (TDD) that is kept at a hotel reception desk is available.

The **second** attribute is **accessibility**. Accessibility is related to the ability of people to get to a place or to use a device. Accessibility permits a wheelchair user to ride a bus or a Braille user to read a document.

The **third** attribute is the **availability of sensory stimulation** regarding the environment. Sensory stimulation, which can include visual, tactile, or auditory cues, serves as a signal to promote responses.

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A) *The Natural Environment*

The natural environment may have a major impact on whether a limitation is disabling. For example, a person who has severe allergies to ragweed or mold, which can trigger disabling asthma, can be free of that condition in climates where those substances do not grow. The physical conditions still exist, but in one environment they may become disabling and in another environment they might not.

The natural environment, including topography and climate, affect whether or to what degree a functional limitation will be disabling.

B) *The human made Environment*

The physical environment is a complex interaction of built-in objects. Built objects are created and constructed by humans and vary widely in terms of their complexity, size, and purpose.

Built objects are created for utilitarian reasons and also for an outlet for creativity. For instance, built objects such as dishwashers and computers have the potential to enhance human performance or to

create barriers.

Rural environment, Disability and Vulnerability

- …how rural landscapes, infrastructure and communities shaped social understandings of disability, and how these understandings might uniquely shape opportunities a better life of this group of people.
- People with disabilities, vulnerabilities and marginalized groups have no voices about their lives and what rural living means to them. Physical landscapes are infused with social meaning and that the feelings we have for particular places are built up through an accumulation of experiences that invoke strong emotional responses. Rurality must be considered as more than an issue of context or setting. Instead, rurality

  professionals in rural should prioritize the voices and experiences of those who live rurally, and that the specific characteristics or aspects of the particular rural communities to which they belong. Since larger population of Ethiopia (more than 85%) are agricultural community, life and aspirations of disabilities and vulnerable groups highlight both the pull and the push of rural living without appropriate services and supports.
- Persons with disabilities, vulnerable and marginalized groups living in rural areas have double disadvantaged due to their impairments and vulnerabilities and unfavorable physical and social environment. Professional who are working in rural areas should work in collaboration accordingly. More specifically, these group of people have been excluded from agricultural works (productivity) due its nature

  high demand to labour and lack of technologies and well organized support from professional.

Creating Welcoming (Inclusive) Environment

- External environmental modifications can take many forms. These can include assistive devices, alterations of a physical structure, object modification, and task modification.
- Environmental strategies may ease the burden of care experienced by a family member who has the responsibility of providing the day-to-day support for an individual who does not have the capacity for social participation and independent living in the community.
- Rehabilitation must place emphasis on addressing the environmental needs of people with disabling conditions.

Examples of Environmental Modification

- **1. Mobility aids**
  - Hand Orthosis
  - Mouth stick
  - Prosthetic limb
  - Wheelchair (manual and/or motorized)
  - Canes
  - Crutches
  - Braces
- **2. Communication aids**
  - Telephone amplifier or TDD
  - Voice-activated computer
  - Closed or real-time captioning
  - Computer-assisted note taker
  - Print enlarger
  - Reading machines
  - Books on tape
  - Sign language or oral interpreters
  - Braille writer
  - Cochlear implant
  - Communication boards FM, audio-induction loop, or infrared systems
- **3. Accessible structural elements**
  - Ramps Elevators
  - Wide doors
  - Safety bars
  - Nonskid floors
  - Sound-reflective building materials
  - Enhanced lighting
  - Electrical sockets that meet appropriate reach ranges
  - Hardwired flashing alerting systems Increased textural contrast
- **4. Accessible features**
  - Built up handles
  - Voice-activated computer
  - Automobile hand controls
- **5. Job accommodations**
  - Simplification of task
  - Flexible work hours
  - Rest breaks
  - Splitting job into parts
  - Relegate nonessential functions to others
- **6. Differential use of personnel**
  - Personal care assistants
  - Note takers
  - Secretaries Editors
  - Sign language interpreters

3.3.1.1.1. Impact of Social and Psychological Environments on the Enabling-Disabling Process

The social environment is conceptualized to include ***cultural, political, and economic factors***. The psychological environment is the intrapersonal environment. This section examines how both affect the disabling process.

Culture and the Disabling Process Culture affects the enabling-disabling process at each stage; it also affects the transition from one stage to another. This section defines culture and then considers the ways in which it affects each stage of the process.

Definition of Culture

Definition of culture includes both material culture (things and the rules for producing them) and nonmaterial culture (norms or rules, values, symbols, language, ideational systems such as science or religion, and arts such as dance, crafts, and humor). Nonmaterial culture is so comprehensive that it includes everything from conceptions of how many days a week has or how one should react to pain to when one should seek medical care or whether a hermaphroditic person is an abomination, a saint, or a mistake. Cultures also specify punishments for rule-breaking, exceptions to rules, and occasions when exceptions are permitted.

The role of nonmaterial culture for humans has been compared to the role of instincts for animals or to the role of a road map for a traveler. It provides the knowledge that permits people to be able to function in both old and new situations.

Both the material and nonmaterial aspects of cultures and subcultures are relevant to the enabling-disabling process. Cultures have an impact on the types of pathologies that will occur as well as on their recognition as pathologies. However, if a pathology is not recognized by the culture (in medical terms, diagnosed), the person does not begin to progress toward disability (or cure).

Enabling and Disabling Factors

Type of Factor	Element of Social and Psychological Environment			
	Culture	**Psychological**	**Political**	**Economic**
Enabling	Expecting people with disabling conditions to be productive	Having an active coping strategy	Mandating relay systems in all states	Tax credits to hire people with disabling conditions
	Expecting everyone to know sign language	Cognitive restructuring	Banning discrimination against people who can perform the essential functions of the job	Targeted earned income tax credits
Disabling	Stigmatizing people with disabling conditions	Catastrophizing	Segregating children with mobility impairments in schools	Economic disincentives to get off Social Security Disability Income benefits
	Valuing physical beauty	Denial	Voting against paratransit system	No subsidies or tax credits for purchasing assistive technology

Pathway from Pathology to Impairment to Functional Limitation

Culture can affect the likelihood of the transition from pathology to impairment. A subculture, such as that of well-educated society, in which health advice is valued, in which breast cancer screening timetables are followed, and in which early detection is likely, is one in which breast tumors are less likely to move from pathology to impairments. In a subculture in which this is not true, one would likely see more impairments arising from the pathologies.

Cultures can also speed up or slow down the movement from pathology to impairment, either for the whole culture or for subgroups for whom the pathway is more or less likely to be used.

Culture clearly has an impact on whether a particular impairment will become a functional limitation. Impairments do not become limiting automatically. Rather, cultures affect the perception that the impairment is in fact the cause of the limitation, and they affect the perception that the impairment is in fact limiting. If a society believes that witchcraft is the reason that a woman cannot have children, medical facts about her body become irrelevant..

If the culture does not recognize that impairment is limiting, then it is not. For example, hearing losses were not equivalent to functional limitations in Martha's Vineyard, because "everyone there knew sign language". Or, if everyone has a backache, it is not defined by the culture as limiting. There are many cross-cultural examples. In a culture in which nose piercing is considered necessary for beauty, possible breathing problems resulting from that pathology and impairment would be unlikely to be recognized as being limiting. Or, in a perhaps more extreme case, female circumcision is an impairment that could lead to functional limitation (inability to experience orgasm), but if the whole point is to prevent female sexual arousal and orgasm, then the functional limitation will not be recognized within that culture but will only be recognized by those who come from other cultures. In all these examples, if the culture does not recognize the impairment, the rehabilitation process is irrelevant—there is no need to rehabilitate a physical impairment if there is no recognized functional limitation associated with it.

Pathway from Functional Limitation to Disability

- Here, the most important consideration is the ways in which the transition from functional limitation to disability is affected by culture. A condition that is limiting must be defined as problematic—by the person and by the culture—for it to become a disability. Whether a functional limitation is seen as being disabling will depend on the culture.
- The culture defines the roles to be played and the actions and capacities necessary to satisfy that role. If certain actions are not necessary for a role, then the person who is limited in ability to perform those actions does not have a disability. For example, a professor who has arthritis in her hands but who primarily lectures in the classroom, dictates material for a secretary to type, and manages research assistants may not be disabled in her work role by the arthritis. In this case, the functional limitation would not become a disability.
- A disability can exist without functional limitation, as in the case of a person with a facial disfigurement living in cultures such as that in the United States, whose standards of beauty cannot encompass such physical anomalies. Culture is thus relevant to the existence of disabilities: it defines what is considered disabling. Additionally, culture determines in which roles a person might be disabled by a particular functional limitation. For example, a farmer in a small village may have no disability in work roles caused by a hearing loss; however, that person may experience disabilities in family or other personal relationships.
- On the other hand, a profoundly deaf, signing person married to another profoundly deaf, signing person may have no disability in family-related areas, although there may be a disability in work-related areas. Thus, culture affects not just *whether* there is a disability caused by the functional limitation but also *where* in the person's life the disability will occur. Culture is therefore part of the mat; as such, it can protect a person from the disabling process and can slow it down or speed it up. Culture, however, has a second function in the disabling process.

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Although there is a direct path from culture to disability, there is an also indirect path. The indirect function acts by influencing other aspects of personal and social organization in a society.

That is, the culture of a society or a subculture influences the types of personality or intrapsychic processes that are acceptable and influences the institutions that make up the social organization of a society. These institutions include the economic system, the family system, the educational system, the health care system, and the political system. In all these areas, culture sets the boundaries for what is debatable or negotiable and what is not.

Each of these societal institutions also affects the degree to which functional limitations will be experienced by individuals as disabling.

All of the ways in which intrapsychic processes or societal institutions affect the enabling-disabling process cannot be considered here. However, the remainder of this section presents some examples of how the enabling-disabling process can

be affected by three factors: economic, political, and psychological.

- A "*One-size-fits-all*" approach to provide services for persons with disabilities and vulnerability groups is no longer enough.
  Including people with disabilities in everyday activities and encouraging them to have roles similar to peoples who do not have a disability is *disability inclusion.* This involves more than simply encouraging people; it requires making sure that adequate policies and practices are in effect in a community or organization.
- Inclusion should lead to increased participation in socially expected life roles and activities—such as being a student, worker, friend, community member, patient, spouse, partner, or parent.
- Disability inclusion means provision of differentiated services for persons with disabilities and vulnerabilities. Differentiated service means a multiple service delivery model that can satisfy the most needs of persons with disabilities and vulnerabilities.
- Socially expected activities may also include engaging in social activities, using public resources such as transportation and libraries, moving about within communities, receiving adequate health care, having relationships, and enjoying other day-to-day activities. To reach ambitious targets for the general population, as well as targeted care for persons with disabilities and vulnerable groups, we need differentiated service delivery.

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- Persons with disabilities and vulnerabilities are often excluded (either directly or indirectly) from development processes and humanitarian action because of physical, attitudinal and institutional barriers. The effects of this exclusion are increased inequality, discrimination and marginalization.
- To change this, a disability inclusion approach must be implemented. The twin-track approach involves: (1) ensuring all mainstream programs and services are inclusive and accessible to persons with disabilities, while at the same time (2) providing targeted disability-specific support to persons with disabilities.
- The two tracks reinforce each other. When mainstream programs and services, such as health and education services, are disability-inclusive and aware, this can help facilitate both prevention of impairments, as well as early identification of children and persons with disabilities who can then be referred to disability-specific services.
- And the provision of disability-specific supports, such as assistive devices, can help facilitate more effective

  inclusion of persons with disabilities in mainstream services.

Strategies to Disability Inclusive Intervention and Rehabilitation

- **Prevention**

Prevention of conditions associated with disability and vulnerability is a development issue. Attention to environmental factors – including nutrition, preventable diseases, safe water and sanitation, safety on roads and in workplaces – can greatly reduce the incidence of health conditions leading to disability. A public health approach distinguishes:

i) **Primary prevention** – actions to avoid or remove the cause of a health problem in an individual or a population before it arises. It includes health promotion and specific protection (for example, HIV education).

ii) **Secondary prevention (early intervention)** – actions to detect a health and disabling conditions at an early stage in an individual or a population, facilitating cure, or reducing or preventing spread, or reducing or preventing its long-term effects (for example, supporting women with intellectual disability to access breast cancer screening).

iii) **Tertiary prevention (rehabilitation)** – actions to reduce the impact of an already established disease by restoring function and reducing diseaserelated complications (for example, rehabilitation for children with musculoskeletal impairment).

Primary prevention issues are consider as crucial to improved overall health of countries‘ populations. Preventing disability and vulnerability should be regarded as a multidimensional strategy that includes prevention of disabling barriers as well as prevention and treatment of underlying health conditions.

Implementing the Twin-track Approach

Implementing the twin-track approach involves:

- **Track 1: Mainstreaming disability as a cross-cutting issue** within all key programs and services (education, health, relief and social services, microfinance, infrastructure and camp improvement, protection, and emergency response) to ensure these programs and services are inclusive, equitable, non-discriminatory, and do not create or reinforce barriers. This is done by: gathering information on the diverse needs of persons with disabilities during the assessment stage; considering disability inclusion during the planning stage; making adaptations in the implementation stage; and gathering the perspectives of persons with disabilities in the reporting and evaluation stage.
- **Track 2: Supporting the specific needs of vulnerable groups with disabilities** to ensure they have equal opportunities to participate in society. This is done by strengthening referral to both internal and external pathways and ensuring that sector programs to provide rehabilitation, assistive devices and other disability-specific services are accessible to persons with disabilities and vulnerable groups and adhere to protection standards and inclusion principles. A Sector‘s organizational structures and human resources on disability inclusion should aim to reflect this twin-track approach. In particular, each sector should have disability program officers in all fields working to implement disability-specific support activities.

Implement Disability Inclusive Project/ Program

As a direct service provider, consultant and materials and equipment producers concerned with realizing equity, quality services and protecting human rights, all sectorial strategies, program, projects and services must be disability-inclusive.

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The following tips will help to overcome the challenges as a key considerations for including persons with disabilities in all program and project cycle management stages of Assessment, Planning, Implementation and Monitoring, and Reporting/Evaluation.

- A) **Education and vocational training** –Inclusive Education realize the universal right to education for all, meaning all mainstream education services need to be supporting children and persons with disabilities.
- B) **Health** – vulnerable groups and persons with disabilities have the same health-care needs as all other peoples and health sector services can also play an important prevention and early identification role to ensure children and persons with impairments have timely access to health services and referral rehabilitation support.
- C) **Relief and social services** – the two-way link between poverty and disability means that vulnerable group and peoples with disabilities and their families need to be able to access relief support.
- D) **Infrastructure and camp improvement**, **shelter, water and sanitation and environmental health** – universal design concepts must be considered in all infrastructure and construction programs and projects.
- E) **Livelihoods, employment and microfinance** – vulnerable groups and people with disabilities face numerous barriers to achieving an independent livelihood, it is crucial that specific sectors responsible for livelihood programs and projects to make accessible to all vulnerable and people with disabilities.
- F) **Protection** – marginalized groups and people with disabilities may face risks and vulnerabilities to experiencing violence, exploitation, abuse, neglect and violation of rights and therefore need to be specifically considered and included in protection programs and projects.
- G) **Humanitarian and emergency response** – the disproportionate effect of emergency and humanitarian situations on vulnerable groups and people with disabilities should be reflected in the design and implementation of the humanitarian projects.

Implement effective Intervention and Rehabilitation

- Rehabilitation interventions promote a comprehensive process to facilitate attainment of the optimal physical, psychological, cognitive, behavioural, social, vocational, avocational, and educational status within the capacity allowed by the anatomic or physiologic impairment, personal desires and life plans, and environmental (dis)advantages for a person with a disability.
- Rehabilitation requires goal-based activities and, more recently, measurement of outcomes.
- Consideration of accessibility of environments and social participation can, and increasingly should, be included within the scope of outcomes and goals for independence. A broad range of measurement tools have been developed for use within rehabilitation, and these standardized tools, along with objective measures of performance (e.g., distance walked, ability to perform a task independently), are typically documented throughout the course of the intervention.
- There are general underlying concepts and theories of rehabilitation interventions. These concepts, alone or in combination, form the basis for interventions and treatment plans. Advances in medical research now support or explain some of the theories or concepts. It has been demonstrated, for example, that retraining reorganizes neural networks and circuits, that skill retraining must be task specific and maintaining a skill is use dependent, that central nervous system cells and chemical messengers may be replaced, that neural circuits and connections can be regrown, and that all muscles can be strengthened.
- Medical rehabilitation is often considered separately, and is focused on recognition, diagnosis, and treatment of health conditions (e.g., medication for treatment of fatigue in multiple sclerosis, botulinum injections for spasticity management in brain injury); on reducing further impairment (e.g., treatment of ongoing shoulder adhesive capsulitis in stroke, management of osteoarthritis of the remaining knee in above-knee amputation); and on preventing or treating associated, secondary, or complicating conditions (e.g., neurogenic bladder management with intermittent catheterization in spinal cord injury, diagnosis of cervical spinal stenosis in an adult with cerebral palsy).
- Although medical rehabilitation does use rehabilitation interventions and espouses the principles of rehabilitation, medical aspects are additive to rehabilitation interventions and principles, with common goals of improved function and outcomes.
- There is convincing evidence that the rehabilitation process and interventions improve the functional outcomes of people with a variety of injuries, medical conditions, and disabilities. Assistive technology is often used in conjunction with rehabilitation interventions; this topic is covered in the *Assistive Technology and Science* volume in this series. Rehabilitation interventions are associated with social participation (e.g., access to education using rehabilitation interventions) and career planning and employment (e.g., long-term goal of rehabilitation interventions). These topics are covered in the *Education* and *Employment and Work* volumes.
- Rehabilitation was conceived within the more traditional model of medical care, but it is increasingly obvious that disability issues are more than medically driven. The social justice and civil rights model of disability is important to understand, and elements must be incorporated into rehabilitation interventions, especially as they relate to accessibility of environments and services. Of all the medical specialties and programs, rehabilitation is the one most based on quality of life and functioning within the community. Inequalities and differences must be addressed within the structures of funding and spheres of influence. Increasingly, insurance plans determine the availability of rehabilitation services, equipment and assistive devices, and community-based resources; government funding is more limited for education, especially for those with special needs; and businesses and workers‘ compensation programs are more restrictive with flexibility and coverage policies.

Components of Rehabilitation Interventions

Rehabilitation is a process designed to optimize function and improve the quality of life of those with disabilities. Consequently, it is not a simple process. It involves multiple participants, and it can take on many forms. The following is a description of the individual components that, when combined, comprise the process and activity of rehabilitation.

- **Multiple Disciplines**

Rehabilitation interventions usually involve multiple disciplines.

The list is long, and it includes (although is not limited to) such professionals as the following:

Physicians

The physician‘s role is to manage the medical and health conditions of the patient/consumer within the rehabilitation process, providing diagnosis, treatment, or management of disability-specific issues. Often, the physician leads the rehabilitation team, although other team members can assume the leadership role depending on the targeted goal or predominant intervention. Because of the depth and breadth of their knowledge and training, certified rehabilitation physicians or physiatrists usually are the best qualified to anticipate outcomes from rehabilitation interventions and the process of rehabilitation. They also can provide the diagnosis and treatment of additional medical conditions related to the specific disability or underlying pathology, which will have an influence on performance and outcome.

- **Occupational Therapists**

Occupational therapists (OTs) typically work with patients/consumers through functional activities in order to increase their ability to participate in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), in school and work environments, using a variety of techniques. Typical techniques include functional training, exercise, splinting, cognitive strategies, vision activities, computer programs and activities, recommendation of specially designed or commercially available adaptive equipment, and home/education/work site assessments and recommendations.

Physical Therapists

Physical therapists (PTs) assess movement dysfunction and use treatment interventions such as exercise, functional training, manual therapy techniques, gait and balance training, assistive and adaptive devices and equipment, and physical agents, including electrotherapy, massage, and manual traction. The outcome focus of interventions is improved mobility, decreased pain, and reduced physical disability.

Speech and Language Therapist

Speech and language therapist assess, treat, and help to prevent disorders related to speech, language, cognition, voice, communication, swallowing, and fluency. Rehabilitation interventions involve more than the spoken word, including the cognitive aspects of communication and oral-motor function with swallowing. Assistive technology using augmentative or alternative communication (AAC) devices (e.g., BIGmack switch-activation devices, DynaVox dynamic display and digitized voice devices) is another focus area of speech pathologists.

Audiologists

Audiologists identify, assess, manage, and interpret test results related to disorders of hearing, balance, and other systems related to hearing. Hearing screens and more technologically advanced testing systems fall under the areas of practice. Audiologic rehabilitation interventions include developing auditory and central processing skills, evaluating and fitting for a variety of hearing aids and supports, training for use of hearing prosthetics, including cochlear implants, and counseling for adjustment to hearing loss or newly acquired hearing. Although sign language is a technique used to assist with communication for those with hearing impairments, competency is not required foraudiologists.

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- **Rehabilitation Nurses**

The rehabilitation nurse usually takes the role of educator and taskmaster throughout rehabilitation, but these professionals have most prominence within inpatient rehabilitation programs. They are expert at bladder management, bowel management, and skin care, and they provide education to patients and families about these important areas and also medications to be used at home after discharge. Activities developed within the active therapeutic rehabilitation programs are routinely used and practiced, such as dressing, bathing, feeding, toileting, transfers to and from wheelchairs, and mobility.

- **Social Workers**

Social workers in health settings may provide case management or coordination for persons with complex medical conditions and needs; help patients navigate the paths between different levels of care; refer patients to legal, financial, housing, or employment services; assist patients with access to entitlement benefits, transportation assistance, or community based services; identify, assess, refer, or offer treatment for such problems as depression, anxiety, or substance abuse; or provide education or support programming for health or related social problems. Social workers work not only with the individual receiving rehabilitation services, but with family members, to assist both the individual and family in reaching decisions and making emotional or other adjustments.

- **Case Managers**

Case management is a relatively new concept that has come about with the survival of patients/consumers with complex medical problems and disabilities, and with the development of a more complex health care system. Case managers possess skills and credentials within other health professions, such as nursing, counseling, or therapies, although they usually have a nursing background. Coordination of services following the inpatient admission can be the most difficult task. A hospital, rehabilitation program, or insurance company may employ case managers.

- **Rehabilitation Psychologists**

Rehabilitation psychology is a specialized area of psychology that assists the individual (and family) with *any* injury, illness, or disability that may be chronic, traumatic, and/or congenital in achieving optimal physical, psychological, and interpersonal functioning (Scherer et al.,2004). This profession is an integral part of rehabilitation, and it involves assessment and intervention that is tailored to the person‘s level of impairment and is set within an interdisciplinary framework.

- **Neuropsychologists**

Neuropsychology is another specialized area within psychology, and it is of particular importance in the care of individuals who have sustained brain injuries. These professionals possess specialized skills in testing procedures and methods that assess various aspects of cognition (e.g., memory, attention, language), emotions, behaviors, personality, effort, motivation, and symptom validity. With this testing, the neuropsychologist can determine whether the level and pattern of performance is consistent with the clinical history, behavioral observations, and known or suspected neuropathology, and the degree to which the test performance deviates from expected norms. Additional contexts encountered in brain injury survivors can complicate the clinical presentation and impact neuropsychological test performance. The neuropsychologist can identify emotional states arising from changing life circumstances (e.g., depression, anxiety), medical co-morbidities (e.g., substance abuse, heart disease), and social-contextual factors (e.g., litigation, financial distress), and can then explain their potential influence to the injured person, family members, and other health care providers.

- **Therapeutic Recreation Specialists**

Recreational therapists, also referred to as therapeutic recreation specialists, provide treatment services and recreation activities for individuals with disabilities or illnesses. They use a variety of techniques to improve and maintain the physical, mental, and emotional wellbeing of their clients, with the typical broad goals of greater independence and integration into the community. Therapists promote community-based leisure activities as a complement to other therapeutic interventions, and as a means to practice those clinic- or hospital-based activities within a real-world context.

Rehabilitation Counselors

Rehabilitation counselors (previously known as vocational counselors) assist persons with both physical and mental disabilities, and cover the vocational, psychological, social, and medical aspects of disability, through a partnership with the individuals served.

Orthotists and Prosthetists

These professionals practice within a unique area of rehabilitation, combining technical and some clinical skills. The orthotist fabricates and designs custom braces or orthotics to improve the function of those with neuromuscular or musculoskeletal impairments, or to stabilize an injury or impairment through the healing process. The prosthetist works with individuals with partial or total limb absence or amputation to enhance their function by use of a prosthesis (i.e., artificial limb, prosthetic device). The orthotist/prosthetist usually works with a physician, therapist, or other member of the rehabilitation team to ensure an effective design to meet the needs of the individual, especially regarding the ability to maneuver within the built environment and be socially active.

Additional Rehabilitation Professionals

Other rehabilitation professionals who might be considered members of the team include nutritionist, spiritual care, rehabilitation engineer, music therapist, dance therapist, child-life specialist, hospital-based school teacher, massage therapist, kinesiologist, and trainer, among others.

Person with the Disability and His or Her Family

The person with the disability and his or her family members are partners in this team process. In fact, they are key members of the team. Personal and family/support system goals, family/friend support, and community resources are driving forces regarding goals and discharge planning within the rehabilitation process. The process involves the best strategies of interventions based on standards of care, the evidence base regarding outcomes related to interventions, the experience of the practitioners, and the personal and family needs and contexts of the person with the disability. Professionals should be skillful in their communication to consumers about anticipated outcomes and effectiveness of interventions.

Community-Based Rehabilitation

CBR promotes collaboration among community leaders, peoples with disabilities and their families and other concerned citizens to provide equal opportunities for all peoples with disabilities in the community and to strengthen the role of their organization.

According to the view of World Health Organization (WHO) and United Nations Education, Scientific and Cultural Organization (UNESCO), CBR is a strategy that can address the need of peoples with disabilities within their community which can be implemented through the combined efforts of peoples with disabilities themselves, their families, organizations and communities, governmental and non-governmental organizations, health, education, vocational, social and other services. Community based rehabilitation is a combination of two important words; community and rehabilitation. Thus in order to get clear concept about the definition of CBR, let us first define the two terms separately.

Community-consists of people living together in some form of social organization sharing political, economic, social and cultural characteristics in varying degrees.

Rehabilitation-includes all measures aimed at reducing the impact of disability for an individual enabling him or her to achieve independence, social integration, a better quality of life and self actualization or refers to measures which aim to enable persons with disabilities to attain and maintain maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life.

If you give a person a fish,

He/she will eat for a day;

If you teach him/her to fish,

He/she eat for a lifetime.”

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- CBR is a systematized approach within general community development whereby Persons with Disabilities are enabled to live a fulfilling life within their own community, making maximum use of local resources and helping the community become aware of its responsibility in ensuring the inclusion and equal participation of — Persons with Disabilities (PWDs). In the process, PWDs are also made aware of their own role and responsibility, as they are part of the community.
- The idea of CBR is that people with disabilities should have the right to a good life. The help they need should be available to them, at a low cost. It should be offered to them and their family in a way that suits their usual way of living, whether in a village, a town or a city. They should have education like everybody else. They should be able to take up jobs and earn their living. They should be able to take a full part in all the activities of their village, or town or city.
- The idea of CBR is that, even if people learn very slowly, or has problems seeing or hearing, or finds it hard to move about, they should still be respected for being men and women, girls and boys. Nobody should be looked down on or treated badly just because they have a disability.
- Houses, shops and schools should be built in such a way that everyone can easily go in and out and make use of them. Information should be given to people in a way they understand, not only in writing, which is hard for people who cannot read or see it. Information should be given in spoken forms as well, so that everyone has a fair chance to use it. To do all this would mean a lot of changes. But they would be good changes, because everyone could live a better life, helping each other and respecting one another.

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- In addition, for the purpose of our discussion two important definitions will be given:

1. Community based rehabilitation is a strategy that can address the needs of peoples with disabilities with in their communities (WHO, UNESCO, 2004).
2. Community based rehabilitation is a common sense strategy for enhancing the quality of life of peoples with disabilities by improving services delivery in order to reach all in need by providing more equitable opportunities and by promoting and protecting their rights .
3. The joint position paper by WHO, ILO, UNICEF and UNESCO of the 2004 define CBR in a rather flexible and broad manner in the following way: Community based rehabilitation is a strategy within general community development for rehabilitation, equalization of opportunities and social inclusion of all children and adults with disabilities. It is implemented through the combined efforts of people with disabilities themselves, their families and communities, and the appropriate health, education, vocational and social services.

This definition particularly advocates a broad approach for developing programs that involves the following elements:

A. The participation of people with disabilities and their representatives at all stages of the development of the program
B. The formulation and implementation of national policies to support the equal participation of people with disabilities
C. The establishment of a system for program management
D. The multi-sectoral collaboration of governmental and nongovernmental sectors to support communities as they assume responsibility for the inclusion of their members who experience disabilities.
E. CBR focuses on strengthening the capacity of peoples with disabilities, and their families.
F. CBR focuses on challenging negative views and barriers in society to enable equal rights and opportunities.

Currently, three main meanings are attached to the notion of CBR: People taking care of themselves, a concept and an ideology and community based rehabilitation which will be described below.

1. **People Taking Care of Themselves**

Services for people with disabilities in most regions in developing countries are still limited to what people can do for themselves. This is the "real" CBR: all the activities that people with disability, their family members and other community members do in their own community for persons with disability, such as general care, accommodating each other's needs {i.e.. family members adapting themselves to the situation of the individual with disability, and vice-versa), education and health, using whatever they know, whatever they have, in whatever daily circumstances they exist.

2. A Concept and an Ideology. As a concept and an ideology, it promotes a decentralized approach to rehabilitation service-delivery, whereby, it is assumed that community members are willing and able to mobilize local resources and to provide appropriate services to people with disabilities. This concept has been 'fled out in many CBR programs in the developing world, by the use of government staff and facilities, but has in most cases proved to be unrealistic.

3. **Community Based Rehabilitation:** is mostly in a form of Non-Governmental Organizations (NGOs). Recognizing the human and material limitations of people with disabilities, their family members and other community members, CBR program tries to promote and facilitate community based rehabilitation. Unfortunately,

such CBR programs often consider 'local culture' as an obstacle, rather than as a condition towards progress.

Major Objectives of Community Based Rehabilitation

- The major objective of community based rehabilitation is to ensure that people with disabilities are empowered to maximize their physical and mental abilities, have access to regular services and opportunities and become active, contributing members of their communities and then societies. Thus, community based rehabilitation promotes the human rights of people with disabilities through attitude changes within the community.

Community based rehabilitation aims to include people who have disabilities from all types of impairments, including difficulty hearing, speaking, moving, learning or behaving. Community based rehabilitation also includes all age groups: children, youth, adults and older people.

- **Implement Technologies for Disability Inclusion**
- **Inclusiveness and Information Technology (ICT)**

Inclusiveness and Information Technology examines the extent to which regulatory frameworks for information and communication technologies (ICTs) safeguard the rights of persons with disabilities and vulnerabilities as citizenship rights.

Effective access to information is crucial in facilitating the participation of citizens in civil society. Accessibility concerns in the information and communications technologies (ICTs) sector have become particularly important, given the increased role played by ICTs in everyday life. For persons with disabilities and vulnerabilities, technological developments such as the proliferation of the Internet and the provision of services for accessing digital television such as audio description (video description), closed signing, and the availability of subtitles (captions) in live broadcasts enabled by speech-to text technologies can make an important contribution to facilitating independent living.

Unfortunately, persons with disabilities and vulnerabilities still face significant barriers in accessing ICTs. These barriers include, inter alia, poorly designed Web sites (e.g., with graphics not readable by computerized screen readers, with information that can be accessed only by the use of the mouse rather than the keyboard), limited availability of subtitles on webcasts, the use of multiple remote controls for digital television, and difficult to navigate on-screen displays. These access barriers have the potential to affect persons with disabilities, including persons with sensory disabilities (visual and/ or hearing), mobility disabilities, or cognitive disabilities. The objective to ensure equal access to information should play a central role in any regulatory framework for the ICT sector. Nevertheless, despite the potential of technology to empower the public as citizens, the regulatory framework for the ICT sector has been criticized for its overall perception of the public as economic actors and for the insufficient level of protection conferred to citizenship values such as equality and dignity.

Inclusiveness and Assistive Technology

Worldwide the number of persons with disabilities, vulnerabilities and marginalized groups is increasing alarmingly because of population aging, accident, global warming and climate change, medical advancement, humanitarian crises, natural disaster, conflict and increases in chronic health conditions, among other causes. Over a billion people, about 15% of the world's population, have some form of disability.

Technologies promote independence for people with disabilities and vulnerability. The use of devices, computers, robots, and other established assistive technology (AT) can potentially increase the autonomy of people with disabilities and vulnerability, by compensating for physical limitations and circumventing difficulties with normal activities of daily living (ADL).

Vulnerability and disability have adverse impact on quality life of these groups. Vulnerable people and those living with disabilities are losing their independence and overall wellbeing.

The growing number of persons with disabilities and vulnerabilities is too large to be cared for through traditional government programs. The cost associated with such programs and the lack of a skilled caregiver workforce makes it very difficult to meet the needs of this segment of the population. It is therefore inevitable that we resort to technology in our search for solutions to the costly and challenging problems facing persons with disabilities and vulnerabilities.

Wellbeing or quality of life is an important concern for persons with disabilities, vulnerabilities and marginalized groups, who, like every person, is seeking to be well, happy, healthy, and prosperous. Persons with disabilities, vulnerabilities and marginalized groups have several important components of wellbeing. A key activity is independent living with convenient access to goods and services, as well as being socially active and enjoying self-esteem and dignity.

In modern societies, persons with disabilities, vulnerabilities and marginalized groups can attain some components of wellbeing such as access to services using assistive technology (AT). Other components, such as freedom of navigation and travel, are much more difficult because of environmental obstacles encountered by the disabled.

Assistive Technologies (AT)

Surgery, generic therapy, rehabilitation, human assistance, and the use of assistive technology (AT) help disabled people cope with their disabilities. *Surgery* (medical intervention) helps decrease deficiency and, in some cases, restores capability. *Genetic therapy* attempts to remediate genes responsible for a given disease or disorder. Although promising in concept, genetic therapy is in its infancy and, as yet, has no broad application.

Rehabilitation develops and adapts residual capabilities, while *human assistance* aids

Persons with disabilities and vulnerabilities in their daily living activities. Unfortunately, such assistance is not always available and not necessarily cost-effective. AT can increase the autonomy, independence, and quality of life for Persons with disabilities and vulnerabilities and can also enable the integration of social, professional, and environmental aspects of life for Persons with disabilities and vulnerabilities populations.

- **AT and Daily Living of Persons with disabilities and Vulnerabilities**

Assistive technology affords Persons with disabilities and vulnerabilities greater equality of opportunity, by enhancing and expanding their communication, learning, participation, and achievement with higher levels of independence, wellbeing, and quality of life.

AT to enhance the performance of their daily living tasks, including communication, vision, hearing, recreation, movement, seating and mobility, reading, learning, writing, and studying, as well as controlling and accessing their environment.

Assistive Technology varies from low-tech devices such as a cane or adapted loop, to high-tech systems such as assistive robotics or smart spaces. Currently, most popular technologies for Persons with disabilities and Vulnerabilities are simple; or examples of mobility-enhancing equipment

include wheelchairs, communication via mobile telephones and computers, and voice-activated smart devices to enhance environmental control. Advances in communication and information technologies further support the development of new, more complex technologies such as utilization of

smart wheelchairs, assistive robots, and smart spaces.

AT Definitions

Assistive technology encompasses all systems that are designed for Persons with disabilities and Vulnerabilities, and that attempt to compensate the handicapped. This includes robotic tele manipulators, wheelchairs, or navigation systems for the blind. AT also includes systems that restore personal functionality, such as external prostheses and ortheses. There are various organizational definitions for assistive technology: The international standard ISO 9999 defines AT (refering to AT as —technical aid) as — any product, instrument, equipment or technical system used by a disabled person, especially produced or generally available, preventing, compensating, monitoring, relieving or neutralizing the impairment, disability or handicap.

In the United States, the Technology Act and Assistive Technology Act define an AT device as — any item, piece of equipment or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.‖ These Acts also define an *assistive technology service* as —any service that directly assists an individual with a disability in the selection, acquisition, or use, of an assistive technology device.

The Older Americans Act defines AT as — technology, engineering methodologies, or scientific principles appropriate to meet the needs of, and address the barriers confronted by older individuals with functional limitations.

In Europe, the European Commission (EC) defines AT as —products, devices or equipment that is used to maintain, increase or improve the functional capabilities of people with disabilities. The World Health Organization (WHO) defines an Assistive Device as —Equipment that enables an individual who requires assistance to perform the daily activities essential to maintain health and autonomy and to live as full a life as possible. Such equipment may include, for example, motorized scooters, walkers, walking sticks, grab rails and tilt-and-lift chairs WHO also defines assistive technology as —An umbrella term for any device or system that allows individuals to perform tasks they would otherwise be unable to do or increases the ease and safety with which tasks can be performed.

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- **AT and User Needs: A Classification Scheme**

Examples of AT user needs and classification

A. People with Communication Disabilities refers to be multiple difficulties including: Speech mechanism problem, Language processing, Hearing, Vision, Motor skills.

Needs & Barriers: Safety Technologies, Self-care and medication management, social needs socialization, access to information technology, communication and interaction with environment, access to public administration and facilities (authorities, banks, public services), shopping recreation and leisure problems with speech, writing, esteem independence and employment.

Assistive technologies: Mobile systems [phones, wearable electronics, computers, augmentative and alliterative communication (including I/O interfaces) (adaptable/configurable interfaces, tactile interfaces), vibrotactile displays reading screen, speech technologies, augmentative–alliterative communication. Socialization and entertainment tools (special games, virtual companion‘s videoconferences). Medication organizers (medication reminder/management). Speech technology (audio technology for I/O interfaces and control, writing translators, text–speech translators, transportation (public transportation facilities, smart environments home control, pervasive computing, context awareness, middleware) Shopping tools (Internet access) and education tools

B. People with Cognitive Disabilities: The impairments may include: Cognition, memory loss and forgetfulness

Needs & Barriers are survival, hygiene (toileting, bathing, laundry); feeding (food preparation, eating, drinking), remembering, housekeeping—home cleaning, safety, safety technologies, safety of environment, self-care and medication **m**anagement, social needs, socialization, navigation, access to information technology, education, communication and interaction with environment, shopping, esteem, independence, employment, recreation and leisure

Assistive technologies may include Mobile systems (phones, wearable electronics, and computers), socialization and entertainment tools (special games, virtual companions, videoconferences), augmentative and alliterative communication (including I/O interfaces), adaptable/configurable interfaces, organizer and reminder assistants for timekeeping), medications, (appointments, hygiene, etc., electronic organizers, medication reminder/management, procedure assistants, transportation public transportation facilities) Communication aids (communicators, multimedia procedure, assistants, large-screen programmable phones, electronic information organizers, electronic mail)

C. People with Motor Disabilities impairment include Upper-limbs difficulties/ dexterity, lowerlimb deficiencies

Needs & Barriers are the need for mobility, working in the inaccessible environment

Assistive technologies may include orthotics (cognitive orthotics), smart environments, home control, shopping tools (internet access) and education tools

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AT and the Marketplace

Markets for assistive technologies follow the general marketing rule that products introduced into a market influence the demand and growth of markets for such products. In practice, AT products can either represent a barrier to demand or become an engine of demand. This relationship between Persons with disabilities and Vulnerabilities and AT in the marketplace follows one of two strategies: (1) trivialization or (2) specialization, which are discussed as follows:

Specialization is based on the development of products or services that are adapted for Persons with disabilities. In practice, the AT industry considers Persons with disability populations as solvent autonomous markets. Developed products are adapted for Persons with disabilities needs, so the satisfaction of each target population or subpopulation is good, thereby supporting further product development or adaptation. Nonetheless, the market for such AT is not growing quickly, owing to (1) development costs, (2) high price of the final product, and (3) generally low income of people with disabilities. The exception to this rule is products for elderly retired people, which have significantly higher incomes and a much larger market.

Trivialization considers Persons with disabilities as an augmentation of the market for devices used by people without disabilities. In this strategy, industry does not target. Persons with disabilities and Vulnerabilities populations directly. Instead, the products for Persons with disabilities and Vulnerabilities are of standardized type, that is, generic with multipurpose capabilities. Given requirements for safety and comfort, these products and services are designed to be modified or adapted to meet Persons with disabilities and Vulnerabilities needs. This strategy targets a much larger market but does not consider user satisfaction among Persons with disabilities and Vulnerabilities.

AT and Design Methods

Given the requirements of functionality, safety, and comfort, the design of AT for Persons with disabilities and Vulnerabilities requires both excellent engineering capacities and relevant knowledge about Persons with disabilities and Vulnerabilities characteristics. Product developers must be fully aware of needs, wants, and capabilities of Persons with disabilities and Vulnerabilities populations, as well as limitations associated with each handicap. Numerous design methods have been suggested to assist in the process of AT development.

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- Most widely known are user centered design and universal design, which are discussed as follows:

User-centered design is a set of techniques and processes that enable developers to focus on users, within the design process. In practice, users are involved in the development process, depending on their skills and experience, and their interaction is facilitated by a domain expert. The intensity of this involvement varies with the stage of research and product development.

Often, the developed AT meets persons with disabilities satisfaction. However, this design method is expensive in terms of resources and time expended by engineers and domain experts. It is also difficult to recruit potential end users and to interact with them, especially when these end users are older people, or people with disabilities.

Universal design (also called *design for all)* is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Here, the design process is guided and constrained by a number of objectives: accessibility, adaptability, transgenerational applicability, and/or universal applicability or appeal.

Universal design does not emphasize differences among persons with disabilities, or between persons with disabilities and the general population. Instead, the ideas of adapting products, services, or the environment are extended to users at large. In practice, products are developed to meet the needs of average users. If a user is different, significantly, from the average population, (e.g., a person with a significant handicap), then, the product will provide poor user satisfaction.

- **Universal Design**

It is frequently the case that the built environment can be modified permanently so that functional limitations become less disabling and personal or temporary assistive technologies are not needed. For example, the presence of ramps increases the ability of wheelchair users to get around and thus decreases the degree to which the condition that led to their use of a wheelchair is disabling.

The presence of ramps will increase frequency of trips out of the house and into the community for wheelchair users when ramps are installed in their houses. Wider doors, lower bathroom sinks, and grab bars are other examples of modifications to build environments that decrease the degree to which a building itself may be disabling. Lighting patterns and the materials used for walls and ceilings affect the visual ability of all people, even though the largest impact may be on improving the ability of the person who is hard of hearing to hear in a particular room or the ability of a person who is deaf to see an interpreter or other signers.

Universal design is based on the principle that the built environments and instruments used for everyday living can be ergonomically designed so that everyone can use them. Traditionally, architecture and everyday products have been designed for market appeal, with a **greater focus on fashion rather than function**. However, as the population of older adults and people with disabling conditions increases, there has been a greater trend toward universal design.

Today, with the influence of consumer demand and through thoughtful disability policy, greater emphasis is placed on the development of built materials that are ergonomically friendly to users, regardless of their abilities. Universal design is an enabling factor in the environment that allows the user with a functional limitation to become more independent, yet without an additional cost or stigma attached to the particular product.

Today, as a result of new federal legislation, all new television sets are manufactured with a closed-captioning microchip that allows any user access to broadcast closed captioning. Thus, it is useful not only for deaf users but also for other vulnerable groups, such as older individuals who are starting to lose their audio acuity, or a person watching a late-night talk show in the bedroom who does not want to wake his or her partner.

In all of these ways, the environment affects the degree to which a functional limitation is disabling for a person. However, decisions about the use of technology or built environments are social decisions. The next major section considers the effects of the social and psychological environments on the extent to which a particular functional limitation will be disabling or not .

Implement Inclusive Job Opportunities and Employment

The right to work is fundamental to being a full and equal member of society, and it applies to all persons, regardless of whether or not they have a disability. A decent job in the open labor market is a key bulwark against poverty. It also enables people to build self-esteem, form social relationships, and to gain skills and knowledge. Moreover, a productive workforce is essential for overall economic growth.

Barriers to employment thus not only affect individuals‘ lives, but the entire economy. Despite the fact that the majority of jobs can be performed by individuals with disabilities, the pathways to their employment are often strewn with barriers. An OECD study of its members showed that persons without disabilities were nearly three times more likely than persons with disabilities to participate in the labor market.

Evidence suggests the same is true for countries in the Asia and Pacific region, although data to illustrate the full extent of this trend is scarce. The employment gaps suggested above are likely to understate the divergent work experiences of persons with and without disabilities, since they do not factor in differences in type of employment.

Persons with disabilities and vulnerabilities are more likely to be own-account workers and occupy jobs in the informal sector, often without the security offered by work contracts, salaries, pension schemes, health insurance and other benefits. Even when persons with disabilities are formally employed, they are more likely to be in low-paid, low-level positions with poor prospects for career development. Simple comparisons of the employment rates for persons with and without disabilities can therefore be misleading.

The recently adopted 2030 Agenda for Sustainable Development calls on governments around the world to promote full employment and decent work for all, including persons with disabilities and vulnerabilities. Besides directly targeting employment, the 2030 Agenda and the accompanying SDGs also emphasize the need to guarantee the rights of persons with disabilities and vulnerabilities to equal and accessible education; social, economic and political inclusion, and access to cities, transport systems and public space.

Barriers of Employment

Barriers to the employment of persons with disabilities take many forms and operate at many levels, both within and beyond the workplace itself. Persons with disabilities may be prevented from working due to inaccessible transportation services; the lack of accessible information and communications services; the preference of employers for candidates without disabilities; legal stipulations that prevent individuals with particular impairments from working in certain fields; or the discouragement of family and community members.

Whilst these obstacles are often interconnected, and act collectively to limit employment opportunities for persons with disabilities, it is essential to distinguish between different barriers in order to develop effective policy responses. The major types of barriers are described below.

A) Attitudes and Discrimination

Employers may be reluctant to hire persons with disabilities based on the perception that they are less productive or less capable of carrying out their jobs than others. … prejudicial attitudes.

B) Accessibility

The accessibility of the following areas are crucial to the employment of persons with disabilities: the physical environment; transportation; information and communications; and other facilities open to the public.

In the workplace itself, a lack of physical features such as ramps and elevators can prevent persons with mobility disabilities from being able to work. Similarly, the lack of accessible information and communication infrastructure in workplaces such as clear signage, computers equipped with software such as screen-readers, and devices such as Braille displays can prevent persons with print and intellectual disabilities from being able to gain employment.

Lack of access to sign language interpretation or captioning services can inhibit the employment of deaf people.

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C) Education and Training

Persons with disabilities have disproportionately restricted access to education and training. This severely limits their job opportunities due to a lack of skills and knowledge that are relevant to find or retain a job. Children with disabilities are less likely to attend school, and when they do they are less likely to stay in school.

D) Social Networks

Another barrier to employment for persons with disabilities can be their more limited social networks. Social networks greatly aid the process of searching for work, the lack of which is likely to limit options for persons with disabilities. As part of their broader exclusion from many important social activities, persons with disabilities often therefore lack the opportunity to build social relationships with those who may be in a position to offer suggestions for potential work opportunities. These limited networks are part of the broader cultural and attitudinal barriers that inhibit participation in social, leisure, civic, and religious activities. A key benefit brought by employment itself is the building of social relationships with colleagues, clients and business partners. As a result of the barriers they face in entering and retaining work, many persons with disabilities are also denied the possibility of expanding their networks at the workplace itself.

E) Women Disabilities

In many developing countries including Ethiopia, as a result of continued prejudices both towards women and surrounding disability, women with disabilities are doubly discriminated against in the labor market. Study found that in many developing countries, women with disabilities are only half as likely as men with disabilities to have a job. Moreover, when they are employed, women with disabilities encounter worse working conditions and lower pay as compared with other women, as well as men with disabilities.

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F) Legal Barriers

As a result of discriminatory attitudes about the perceived capabilities of persons with disabilities, some countries impose legal restrictions on their participation in certain types of employment or processes. In some countries, people must be considered physically and mentally healthy‘ or sound‘ to represent oneself in a court of law, to occupy official positions, or to use certain public services. Such laws effectively rule out large numbers of persons with disabilities from accessing employment, based on the blanket assumption that they are incapable of doing particular jobs effectively. Japan is one country that previously had such laws, but has taken action to rectify them.

G) Inflexible Work Arrangements

Another common obstacle to the employment of persons with disabilities is the inflexibility of work arrangements. In some cases, persons with disabilities might prove to be competent and productive employees, but are nonetheless unable to perform certain tasks. The same is true for scheduling the work day. Persons with disabilities may have particular transportation issues or other needs that require a slightly different work day.

H) Dismissal on the Basis of Disability

Workers who are injured and acquire a disability on the job may face unaccommodating policies and a lack of rehabilitative services, which limit their ability to return to work. The absence of anti-discrimination legislation in the majority of countries in the region thus allows employers to dismiss staff on the basis of disability with impunity.

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I) The Benefit Trap

Another obstacle to the employment of persons with disabilities can ironically be imposed by social protection schemes ultimately designed to support them.

These schemes can encourage individuals to stay out of the labor force if they are structured in such a way as to make the receipt of benefits contingent on the inability to work. Therefore, even if persons with disabilities believe that they can work, they may choose not to in order to continue receiving disability benefits.

Even if working could offer them a higher level of income, persons with disabilities may still choose to receive benefits because of the risk of attempting to hold down a job that does not provide adequate support, or is not flexible towards their needs. It is important to stress that this benefit trap is mainly relevant to more developed countries with more generous benefit schemes.

The situation in most of the region‘s middle-to-low income countries is entirely different.

However, it is vital for governments to avoid creating strong work disincentives.

Strategies to Improve Employment for Persons with Disabilities and Vulnerabilities

There a number of strategies that is available to governments in respective sector as they work to improve the employment prospects of persons with disabilities, vulnerable and marginalized groups.

In addition, private sector initiatives that have been demonstrated to improve the employment experiences of persons with in these groups are also discussed below.

A) Anti-Discrimination Legislation

These laws make it illegal to discriminate against an individual on the basis of disability in a range of areas including: employment; education; access to public buildings; the provision of goods and services, and political processes.

With regard to employment, anti-discrimination laws protect persons with disabilities from discriminatory actions in hiring and termination of contracts and affirm the right of persons with disabilities to access employment on an equal basis with others. Anti-discrimination laws challenge collectively held discriminatory attitudes against persons with disabilities by influencing the nexus between law, norms and social mores‘.

Anti-discrimination laws can be made stronger when they include mandates for reasonable accommodations that remove additional barriers to employment for persons with disabilities. Crucially, however, these laws must outline clear enforcement mechanisms.

When penalties are neither stipulated nor enforced, employers are left free to discriminate with impunity.

B) Vocational Education And Training

Technical vocational education and training (TVET) programs can help to ensure that the workforce has the skills and knowledge necessary to obtain and retain a job, while also driving productivity and economic growth. Persons with disabilities often have limited opportunities to build skills and knowledge that are relevant to the labor market.

A vital first step in improving access to employment for persons with disabilities is therefore to ensure that employment support and vocational programs are as inclusive as possible. Such programs should also be held in accessible locations, and reasonable accommodations should be made to improve the access of persons with disabilities.

C) Wage Subsidies

Wage subsidies cover a portion of employees‘ wages, usually for a limited period of time, as a way to lessen the risk perceived by employers of hiring persons with disabilities.

D) Supported Employment

These programs integrate persons with disabilities into the open labor market by providing direct, on-the-job support to employees with disabilities. Supports are usually offered for a limited period of time. One common type of support is a job coach. Job coaches provide onsite, individually tailored assistance to help persons with disabilities perform their jobs.

Coaches also help persons with disabilities adjust to their working environment, and assist in determining which accessibility accommodations are necessary. Supported employment has been shown to be particularly cost-effective for people with intellectual and psychosocial disabilities, in terms of productivity and health related costs. Supported employment requires employers to be open to having such services on site, and to be willing to work cooperatively with job coaches and other service providers. Employment support services and job coaches require special training.

E) Workplace Accommodation Schemes

These schemes reduce the costs to employers of making workplaces more accessible to persons with disabilities. In so doing, workplace accommodation schemes seek to minimize employer reluctance to hire persons with disabilities. There are two ways Government programs can decrease or even eliminate those costs.

The first is by **offering tax breaks or tax credits** for expenditures undertaken to make such adjustments. This strategy may, however, be less effective for small businesses with cash flow issues or limited tax liability. Another strategy is to **provide full or partial funds for reasonable accommodations for employees with disabilities**. Such funding can be provided in various ways, either through employment agencies, using fines from quota systems, or by offering grants to employers from separate Government agencies. Investment in assistive equipment for employees returned costs by about eight times through increased productivity and reduced absenteeism.

F) Workers' Compensation

These programs are designed to address the issue of occupational injuries and illnesses. They provide cash and medical benefits to employees whose disability is acquired in the workplace. Generally, workers‘ compensation operates through insurance programs – either through public insurance programs, or private or even self-insurance at large firms. Because employer premiums are experience rated, they are higher for firms with more accidents.

Thus, the approach incentivizes workplace safety and encourages employers to support employees who acquire disabilities at work to be able to return to their jobs. In many countries, employers are legally mandated to establish workers‘ compensation programs.

G) Quota Systems

Quota systems mandate that firms hire at minimum a certain percentage of persons with disabilities.

Typically, quotas apply only to large employers. Empirical data points to only small net employment gains of persons with disabilities. In addition, quotas can prove difficult to both monitor and enforce. Moreover, by obliging employers to hire a specific number of persons with disabilities, quota systems perpetuate the prejudice that persons with disabilities are not really equivalent to others in their capacity to be productive.

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H) Sheltered Workshops

These programs only hire persons with disabilities, and structure jobs around the perceived abilities of each employee. Sometimes the stated goal of sheltered workshops is to serve as a training ground for the eventual transition of employees to the open labor market. In reality, however, employees with disabilities are rarely supported to make this transition.

Employees are generally paid poorly, and the workshops in which they work are seen as charitable enterprises and are funded as such, with revenues being a function not of sales but of the number of employees. Rather than promoting sheltered workshops, governments can serve their citizens with disabilities better by removing barriers towards their employment in the open labor market. Persons with severe disabilities may find it difficult to enter the open labor market, even if other barriers to their employment are removed. In certain cases therefore, programs that create non-competitive job opportunities may be necessary.

Government and public agencies should be mandated by law to preferentially procure certain products from such workshops in order to guarantee a stable income for their employees with severe disabilities.

I) Private Sector Initiatives

In addition to government-driven strategies, a number of private-sector initiatives also serve to illustrate the need for action to be taken not only by governments, but by employers themselves.

J) Employer Networks

A number of networks of private companies around the world have initiated their own programs to promote the employment of persons with disabilities. Sometimes these organizations are established in response to the creation of a quota policy, sometimes out of a sense of corporate social responsibility, and sometimes because of a compelling business case for being more inclusive.

The main activities of employer organizations include:

- Raising awareness and building capacity on disability inclusion;
- Providing information and tools on disability and employment;
- Influencing policy on the employment and training of persons with disabilities;
- Providing career development opportunities and organizing vocational training;
- Linking jobseekers with disabilities and employers;

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K) Support Disability-Inclusive Business

Private employers can play an important role in developing policies and programs to boost employment for persons with disabilities, as well as their own bottom line. It is recommended that governments:

a) Introduce programs to raise awareness among private employers of the business case for hiring persons with disabilities.

b) Support employers‘ organizations and networks to share inclusion practices and build their capacities to harness the potential of employees with disabilities.

Disability-Inclusive Business—a number of large employers should be proactive in promoting disability inclusion within their businesses. Many of these businesses draw on their positive experiences of hiring persons with disabilities to demonstrate the business case for inclusive employment, citing that persons with disabilities:

- Have higher retention and lower accident rates than employees without disabilities, and comparable productivity;
- Represent an untapped source of skills and talent and transferable problem solving skills developed in daily life;
- Often have valuable skills and experiences learned on the job prior to having a disability;
- Can provide unique insights to help firms to develop their products or services to customers and clients with disabilities;
- Can improve the company‘s image, increasing morale, creating links to the community, and appealing to potential customers who have a disability or whose family members have a disability.

L) Social Enterprises

Social enterprises are businesses that seek to advance a social cause whilst being financially self-sustainable. Rather than being driven solely by the desire to make profits, these businesses also aim to maximize social impact. Social enterprises that consciously seek to hire persons with disabilities, or address issues and barriers affecting the lives of persons with disabilities can therefore help to boost the employment of persons with disabilities, and also influence wider social change.

M) Support Persons with Disabilities in the Workplace

Governments can enhance the working experiences of persons with disabilities firstly by leading by example in terms of public sector employment practices, and secondly by establishing programs and services that support persons with disabilities to do their jobs effectively. It is therefore recommended that governments:

a) Promote flexible working arrangements to ensure that qualified, productive individuals are not unnecessarily prevented from doing certain jobs.

b) Provide funding support and tax incentives to start ups and social enterprise initiatives that aim to hire persons with disabilities or address specific needs of persons with disabilities.

c) Provide subsidies or tax incentives that support the inclusion of persons with disabilities in the workplace.

d) Develop job coach accreditation and training standards and provide job coaching services to enable persons with disabilities to do their jobs effectively and productively.

N) Building a More Inclusive Society

By creating more accessible physical environments, public transport and knowledge, information and communication services, governments can facilitate opportunities for persons with disabilities to work, as well as society at large. It is recommended that governments:

a) Develop and implement accessibility standards for the physical environment in line with universal design, including public buildings and transport services, to ensure that individuals with mobility disabilities are not denied employment opportunities.

b) Promote and provide knowledge, information and communication services in accessible formats, in line with universal design, to meet the needs of persons with sensory, intellectual and psychosocial disabilities to apply for and retain a job.

c) Foster greater social inclusion by establishing links with disabled persons‘ organizations,

including groups of women with disabilities, and working to promote employment opportunities.

O) Boost Education and Training Opportunities

Education and training is vital for all individuals to develop their human capital, and to acquire skills and knowledge relevant to the labor market. Governments must therefore ensure that persons with disabilities are able to access education and training on an equal basis with others. It is recommended that governments:

a) Make education systems more inclusive, both to make schools more accessible to children with disabilities, and to modify instruction to meet the needs of all children.

b) Mainstream disability inclusion into technical vocational education and training (TVET) programs, to support persons with disabilities to acquire knowledge and skills necessary to find and retain decent work.

P) Break Down Attitudinal Barriers and Challenge Discrimination

What are the attitudinal barriers and how can we overcome the challenges?

Discriminatory attitudes towards persons with disabilities inform and produce other barriers to the full and equal participation of persons with disabilities in society, including in employment. For governments to better understand and challenge attitudinal barriers, it is essential to:

a) Undertake research to examine the causes and manifestations of discriminatory attitudes towards persons with disabilities across society.

b) Launch public awareness campaigns and programs to promote the rights of persons with disabilities and to challenge discriminatory attitudes surrounding disability.

c) Conduct disability awareness training such as Disability Equality Training for public employees at the national and local levels.

Q) Improve Data Collection on Disability and Employment

Designing, monitoring and evaluating policies to promote decent work for persons with disabilities requires timely and high quality information. It is recommended that governments:

a) Include the six core Washington Group questions on disability in labor force surveys so that reliable, internationally comparable indicators on employment and disability can be generated on a regular basis.

b) Conduct disability-dedicated surveys to improve the quality of data and understanding on barriers to employment and in turn develop more responsive policies.

c) Take a consistent approach to disability identification so that multiple data sources can be used in conjunction to get a more complete picture of the experiences of persons with disabilities.

Chapter Summary

- Persons with disabilities and vulnerable groups have diverse needs such as; social-emotional, psychological, physical and economic.
- Factors affecting the needs of persons with disabilities vary depending on the nature of disability, personality trait of the person, the meaning the that person gives for the disability, the individual‘s current life condition, type of support provided, the family, community and society, political and economic system of the country at large.
- The basic needs of persons with disabilities and vulnerabilities to ensure equality for all within our society are: full access to the environment (towns, countryside & buildings). an accessible transport system, technical aids and equipment, accessible/adapted housing, personal assistance and support, inclusive education and training, an adequate income, equal opportunities for employment, appropriate and accessible information, advocacy (towards self-advocacy), counselling,, appropriate and accessible health care
- Social protection plays a key role in realizing the rights of persons with disabilities and vulnerabilities of all ages: providing them with an adequate standard of living, a basic level of income security; thus reducing levels of poverty and vulnerability
- Health outcomes for people with disabilities should be access to quality, affordable health care services, which make the best use of available resources.
- As several factors interact to inhibit access to health care, reforms in all the interacting components of the health care system such as policy and legislations, financing, services delivery and human resources training in line with inclusiveness perspectives.
- Disability is the result of the interaction between the characteristics of individuals with disabilities and the characteristics of their environment.

Chapter summary cont’d

- The amount of disability is not determined by levels of pathologies, impairments, or functional limitations, but instead is a **function of the kind of services provided** to people with disabling conditions and **the extent to which the physical, built environment is accommodating** or not accommodating to the particular disabling condition.
- Human competencies interact with the environment in a dynamic reciprocal relationship that shapes performance.

ㄱㅅ The physical and social environments comprise factors external to the individual, including family, institutions, community, geography, and the political climate

- Environmental factors must be seen to include the natural environment, the human made environment, culture, the economic system, the political system, and psychological factors.
- Persons with disabilities, vulnerable and marginalized groups living in rural areas have double disadvantaged due to their impairments and vulnerabilities and unfavorable physical and social environment.
- Environmental strategies can be effective in helping people function independently and not be limited in their social participation, in work, leisure or social interactions as a *spouse*, parent, friend, or coworker.
- The culture of a society or a subculture influences the types of personality or intrapsychic processes that are acceptable and influences the institutions that make up the social organization of a society.
- Multi-sectorial and multi-disciplinary approach to prevention, intervention and rehabilitation strategies are effective in building process of disability inclusive society.
- Inclusiveness promote equity, respect, peace, democracy, and inclusive development