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Active Ageing: A Framework for the Global Strategy for the Prevention of Falls in Older Age

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Abstract: Every one has an opinion about their quality of life, but no one knows precisely what it means in general. John Stewart Mill noted that individual opinion about well-being was 'the best means of knowledge immeasurably surpassing those that can be possessed by any one else' (JS, 1885). Thus, quality of life is highly individualistic and might even be an 'idiosyncratic mystery' due to the high levels of variability between individuals, making it unsuitable for decision making. (Leplége, 1997).

Keywords: WHO; Quality of Life; Aging; Well-being

"Happiness is not something ready made.

It comes from your own actions"

Dalai Lama

1. Introduction

The WHO's Active Ageing policy offers a coherent framework on which to develop a strategy for the prevention of falls in older age worldwide.

What is 'Active Ageing'? Active Ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. Active Ageing depends on a variety of influences or determinants that surround individuals, families and communities. They include gender and culture, which are cross-cutting, and six additional groups of complementary and interrelated determinants:

1. access to health and social services;

2. behavioural;

3. physical environment;

4. personal;

5. social;

6. economic.

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In addition, there are the underlying 'biological' factors which can play a significant role as preventing individuals from falls and consequent injuries or, conversely, can act as risk factors. All of these determinants, and the interplay between them, play an important role in affecting how high or low is the risk of falling and/or if a fall occurs, the risk of sustaining serious injuries. These determinants have to be understood from a life course perspective which recognizes that older persons are not a homogeneous group and that individual diversity increases with age.

Active ageing is a lifelong process. Thus, age-friendly environments with barrierfree buildings and streets, adequate public transportation and accessible sources of information and communication enhance the mobility and independence of younger as well as older persons who present the risk of developing disabilities.

2. Defining Aging

Aging is commonly understood as the process of maturing or becoming older; in fact, aging is a broad term which includes several processes:

1. those changes happening along life;
2. individual differences attributed to age and, finally;
3. the group of aged or older people (in comparison among those younger) (Birren, 1996).

It has been emphasized that Quality of Life (QoL) is an extremely complex, abstract, and scattered concept difficult to define and has a high impact on research and practice. QoL is a key concept in environmental, social, medical and psychological sciences, as well as in public policy and in the minds of the population at large;

Lawton (1991) proposed a Four Sector model in which psychological well-being, perceived quality of life, behavioral competence and objective environment were present in the QoL of older individuals. Hughes (1990) enlarged those domains considering the followings: personal characteristics of the individual (functional activities, physical and mental health, dependency, etc.), physical environmental factors (facilities and amenities, comfort, security, etc.), socio- environmental factors (levels of social and recreational activity, family and social network, etc.), socio-economic factors (income, socio-economic status, etc.), personal autonomy factors (ability to make choices, exercise control, etc.), personality factors (psychological well-being, morale, life satisfaction, happiness, etc.) and subjective satisfaction.

In summary, QoL focusing on health can be considered a predominant field on QoL, usually consisting of subjective appraisal of symptoms in specific pathologies and in the subjective appraisal functioning of the individual. Thus, in spite of the fact that QoL is a multidimensional concept that arises from several disciplines (biology, medicine, psychology and sociology), from a bio-medical perspective, authors propose a *reductionistic* definition without balance between personal (internal) and external conditions, or subjective and objective characteristics. This criticism is in many of QoL perspectives from social sciences or from psychology (Walker, 2005 a,b).

3. What is "Active Ageing"?

Active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. It applies to both individuals and population groups.

Active ageing allows people to realize their potential for physical, social, and mental well-being throughout the life course and to participate in society, while providing them with adequate protection, security and care when they need.

The word "active" refers to continuing participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labor force. Older people who retire from work, ill or live with disabilities can remain active contributors to their families, peers, communities and nations. Active ageing aims to extend healthy life expectancy and quality of life for all people as they age.

"Health" refers to physical, mental and social well being as expressed in the WHO definition of health. Maintaining autonomy and independence for the older people is a key goal in the policy framework for active ageing.

Ageing takes place within the context of friends, work associates, neighbors and family members. This is why interdependence as well as intergenerational solidarity are important tenets of active ageing.

From a lay perspective, several authors have surveyed the conditions that older persons report to be important for *their QoL*. Brown and Flynn (2003) reviewed those components nominated by older people in selected studies, most of the population that was selected for these studies from several countries and world regions, identified the following factors as main aspects of QoL: good health, be independent, good pension/income, family and social relationships, be active, happiness, good living conditions and neighbourhood, opportunities for learning and development, religion. From this lay perspective, it was concluded that QoLof older persons was sharing a multidimensional concept of QoL, similar to experts.

4. Aging and Disability – What does it Look Like?

It is important to note that one grows old gradually, one does not suddenly become old when they turn age 75 or 80 or 85. Physical health does decline with age; this does not necessarily mean that older adults are incapacitated, or, in the language of some, handicapped. Disability is usually defined in terms of restrictions in the ability to perform activities of daily living (ADL), or, the inability to function independently in terms of basic ADL or instrumental ADL (World Health Organization [WHO], 2003). Mobility disability is particularly important because the ability to ambulate is critical to so many activities that allow us to be independent. The International Classification of Functioning, Disability and Health (WHO, 2001) defines disability as, "the ... result of complex relationships between an individual's health condition and personal factors, and of the external factors that represent the circumstances in which the individual lives". This latter definition is important because it points to a relational perspective often forgotten when simply diagnosing physical ability.

The WHO (2003; 2006) estimates that 10% of the world's population has some form of a disability, 20% of those aged 75+, and 50% of those aged 85+. That is, with increasing age, disability increases and, among those who are elderly (age 85 and over), the old elderly are more likely to experience disability than are young elderly. For this reason, the WHO argues that in terms of disability, old age can be viewed as starting at age 75. It is noteworthy that the oldest old are the most rapidly growing

segment of the population and it is among the oldest old that severe disability is the highest (Ferucci, et al., 1996). While recent reports of declining rates of disability in some countries have lead to optimism, the trend does not characterize all nations. For example, a declining trend in severe disability is evident in the U.S., Italy and the Netherlands but it is stable in Australia and Canada and is increasing in Sweden and Japan (OECD 2009; Manton 2008). Furthermore, it is as yet unclear as to whether any trend toward decreasing rates will continue or spread. Increases in the prevalence of obesity threaten the trend where it is evident.

The most common causes of disability among older adults are: chronic diseases, injuries, mental impairment, malnutrition, HIV/AIDS and other communicable diseases. The major chronic conditions of an aging society include: cardiovascular diseases, hypertension, stroke, diabetes, cancer, chronic obstructive pulmonary disease, muscular-skeletal conditions including arthritis and osteoporosis, mental health conditions such as dementia and depression, and blindness and visual impairment. Injuries can be due to road traffic accidents, conflicts, falls, and land mines (McKenna et al. 2005). Certain chronic conditions are particularly related to disability including stroke, diabetes, cognitive impairment, arthritis and visual impairment. (Jagger et al. 2007a; Andrade 2009; McGuire et al. 2006). For adults with arthritis, the odds of disability rise with age, diminish with education and are higher for non-whites and non-married persons (Verbrugge 1991). Schoppera and colleagues (2000) and Melse et al. (2000) emphasize the importance of mental health problems, notably depression (and also isolate the importance of osteoarthritis, alcohol abuse, and lung disease) in the elderly. In addition, smoking is estimated to cause or aggravate several chronic conditions that amount to 18% of the total disability-adjusted life years (DALY) lost (WHO 2005).

In addition to gender differences, socio-economic status, whether one lives in the developed world or the developing world, and ethnicity are among some of the factors related to the extent of disability experienced in old age. The relationship between disability and poverty cannot be over-emphasized. Poverty can lead to malnutrition, poor health services and sanitation, unsafe living and working conditions etc. that are associated with disability; disability can also trap people in a life of poverty (Mont, 2007).

Interestingly, the rates of life satisfaction (happiness, well-being) tend to be high among older adults despite their decline in physical health and living with a disability. For example, in the U.S., 94.4% of older adults report being satisfied or very satisfied with their lives (Strine et al. 2008), in China 77.8% report being quite or very happy (Appleton & Song, 2008), in Canada over 90% say they are satisfied or very satisfied with life (Statistics Canada, 2008), and in both Italy and Germany older adults score 7.5 out of 10 on a life satisfaction scale (Gagliardi et al., 2008). Ferring and colleagues (2004) similarly report ‘content’ older populations in the Netherlands, Luxemburg, Italy, Austria, United Kingdom, and Sweden.

The environment also plays a critical role in the effects of disability on the lives of older adults. The environment is modifiable, such as air, soil and water pollution with chemicals or biological agents, ultraviolet and ionizing radiation, the built environment, noise, electromagnetic fields, occupational risks, agricultural methods, irrigation schemes, anthropogenic climate changes, ecosystem degradation, as well as individual behaviours related to the environment such as hand washing and food contamination with unsafe water or dirty hands (WHO 2009). An environment which embraces accessible design and fosters independent living can make a difference in terms of a good quality of life for those with disabilities.

5. Quality of Life and Therapeutic Environments

Whether individuals with age-related disabilities reside in community or institutional dwellings, the physical environment serves as a valuable resource by which their remaining cognitive and physical abilities can be supported (Iwarsson, 2005; Oswald, et al. 2007). Verbrugge and Jette's (1994) disablement process model and Lawton and Nahemow's (1973) competence-environmental press model both examine the relationship between the physical environment and disability. According to the model, the physical environment has the potential to help an individual overcome his or her intrinsic disability through either the removal of environmental barriers or the provision of environmental modifications.

While the disablement process model provides a framework for understanding the role of the environment in the disablement process, Lawton and Nahemow's (1973) competence-environmental press model offers insight into the mechanism by which the physical environment and disability outcomes are linked (Wahl, et al. 2009). Environmental press refers to the demand that the environment makes on an individual, while competence represents the ability of an individual to respond adaptively to such demands. An individual's functional performance is the result of interactions between competence and environmental demand, a concept more commonly referred to as person-environment fit.

Many older adults express the desire to age-in-place, that is, to remain in their own home for as long as possible (Gitlin, 2003). However, for individuals with age-related disabilities successful aging-in-place may be compromised by environmental hazards or barriers, common in the homes of older adults. While common barriers include dim lighting, shadows or glare, tripping hazards (cords, loose throw rugs/mats, curled carpet edges), the absence of a kitchen work surface at a height suitable for sitting, bathroom sinks designed to be used only when standing, and hardware or controls requiring suitable wrist flexibility to operate, it is the absence of grab bars at the shower/bathtub and/or toilet that can create the most problems with accessibility.

Older European adults living in accessible homes, who perceive their home as meaningful and useful (i.e., support the performance of activities at home) and who view their home situation as contingent upon their own behavior, are more likely to be independent in their daily activities and have better well-being (Oswald et al., 2007). Gitlin, Miller and Boyce (1999) report marked improvement in bathing ability and ADL performance following minor bathroom modifications. Brunnstrom and colleagues (2004) found that increased kitchen lighting improves the performance of several daily kitchen activities, while additional improvements in living room lighting increase quality of life and well-being. Mann and colleagues (1999) reported that the provision of assistive devices and/or environmental modifications significantly decreases functional decline.

The home environment can also influence the lives of caregivers. For example, caregivers of individuals with dementia report that single-story dwellings, open layouts with straight sight lines from one room to another, shower stalls large enough to accommodate a shower chair, and sufficient room around the toilet to facilitate transfers make care giving tasks easy (Olsen et al. 1999). Gitlin and colleagues (2001) also found that, as a result of modifying their homes to address the challenges associated with caring for a person with dementia at home, family caregivers report reduced upset and enhanced self-efficacy in managing behaviors and functional dependency.

When functional disability becomes too great for an individual to safely remain in his/her own home, a transition to institutional care may be warranted. Given the increasing number of individuals with dementia residing in such settings, much of the work examining the relationship between the

institutional environment and age-related disability has focused on dementia (Calkins and Weisman 1999). Research supports the value of a home-like atmosphere which residents are familiar with. Familiarity is enhanced by smaller-scale spaces and a variety of home-like furnishings (e.g., chairs with different patterns and textures, coffee tables, lamps, bookcases), flooring finishes (e.g., carpeting, hardwood), and window treatments, and unhampered by characteristics such as large multi-purpose living/dining areas, uniform vinyl-covered furniture and linoleum flooring. A non-institutional character is associated with improved resident intellectual and emotional well-being, enhanced social interaction, and reduced agitation and aggression (Sloane et al. 1998; Zeisel et al. 2003).

Visually and physically accessible toilets, short hallways, handrails along both sides of the hallway, a cluster or household floor plan, and a walking path with inviting destination spaces support residents' daily functioning by compensating for their reduced cognitive and physical abilities (Cohen and Weisman, 1991). In contrast, long hallways with few places to sit, considerable distance between common spaces and resident rooms, and the limited use of handrails are environmental barriers that can increase resident dependence upon staff. In a recent British study (Parker et al., 2004), residents in care homes that offered greater functional support for cognitive incapacities exhibited increased positive affect while residents in homes that compensated for physical and sensory challenges displayed the greatest control over their immediate environment.

The visibility of exits is of central importance to the safety and security of residents with dementia. Camouflaged exits (e.g., murals, cloth panels) or blinds at exit door windows can reduce elopement attempts (Dickinson & McLain-Kark, 1998; Kincaid & Peacock, 2003). Residents in facilities with camouflaged exits and silent electronic locks are also found to be less depressed (Zeisel et al., 2003).

Many individuals with dementia experience impaired spatial cognition which can make navigation difficult. Physical landmarks, decorating schemes (e.g., hallways with a garden vs. ocean theme), easy-to-read and well-placed directional signs, personalized entryways to resident rooms, short hallways, furnishings unique to specific areas, and cluster or household floor plans in which bedrooms and common areas are located in close proximity to one another are all features that facilitate resident orientation (Cohen and Weisman 1991; Zeisel et al. 2003). Such features are associated with positive resident emotion (Parker et al. 2004). In contrast, large-scale units, large multipurpose common areas, limited visual access to common areas from resident bedrooms, and unfamiliar institutional equipment (e.g., lifts, laundry carts) can hamper residents' efforts at orientation (Cohen & Weisman, 1991).

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