5TH PLENARY LECTURE
OLDER PEOPLE
Second Lecture on Older People
Acquired deafblindness in older people: a challenge for epidemiological approaches, prevention, rehabilitation and professional training

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INTRODUCTION
Dual sensory impairment in older adults today is a challenge, considering the predicted trend towards increasing longevity, the effects on activities of daily life, and the levels of demand on health services by users and clients.
This paper will focus on three points:
1/ The demographic impact on deafblindness
2/ Effects on health
3/ Challenges for professionals working in the fields of dual sensory loss and geriatric care.
I speak from my own area of professional practice which is as a medical practitioner working with people with deafblindness, acquired in adulthood and / or in advancing years

CHAPTER 1 DEMOGRAPHIC CHANGE AND HEALTH POLICY
The ageing of the European Union's population is the result of different interactive demographic trends.
Different hypotheses and projections are possible in the field of ageing, but the results are not homogeneous for the EU's 25 member States because the magnitude and rythm of trends may vary from one country to another, with a gradient North–South and West–East. There is a large area to the North and West of Europe which contains the 15 original European Union members, and an area of 10 more European states in the South and East.
In this paper I will use statistics produced by EUROSTAT or the World Health Organisation and will refer to significant factors relating to demographic change.
1° **the proportion of the population over the age of 65 in 2005** varies from 10 to 12% in East Europe and from 16 to 18 % in North Europe. In some countries this has already reached 20% of the total population.
2° life expectancy at birth has increased consistently since 1950 and it is expected to continue, varying from 81.6 years in Iceland to 67.2 in Kyrgistan
3° **life expectancy at age 65** shows the same gap betwen North – South with 17 to 19 years of expected additional life in Northern Europe and from 14.8 to 15.25 years in the South and East.
4° **life expectancy at 75 or 80** years is unknown in almost every country. No reliable European statistics yet exist, although in France we have calculated that, at age 75 in 2008 people are expected to live 10 years more!!!
5° **expectancy of healthy life years at birth** is also increasing. The average in Europe is around 62 for men and 64.5 for women. This Healthy Life Years (HLY) is also called Disability Free Life Expectancy. This determinant is more intersting when it is calculated at 75 years because it is the main challenge that we will have to face in the years to come. We are all living longer in good health, and the years of our lives spent with disabilities are reducing.We can note a compression of morbidity in a shorter period at the end of the life However, these disabilities are more serious when they do occur. Measuring healthy life expectancy is important; good health and well being in an ageing population will limit the pressure on health systems

and on carers. Therefore reducing morbidity is an aim for health policy in every country. The level of HLY is dependent on the health status of a population but is also a product of cultural approaches to life.
Although birth and infant mortality is reducing the size and proportion of the older population is increasing. With this trend we see the emergence of chronic conditions such as Alzheimers and cardiovascular disease and diabetes. Behind these chronic diseases is hidden deafblind impairment.
This raises a number of issues:

Firstly, mortality at birth has reduced but in fact this has depended not only on increased knowledge in medical science but also on the quality of the environment; for example mortality by infectious pathology has remained at the same level for 20 years. Progress has not been due to antibiotic drugs but to the quality of water and nutrition. So in the fields of deafblindness, we should focus not on medical interventions but on improvements in technical aids and environmental factors.
Secondly, chronic diseases are increasing. Therefore health policy needs to be organised to manage disease over a very long period with users and clients, and geared more and more to their quality of daily life.
Thirdly, the older population want to remain independent and to stay at home a long time. However, with an increasing elderly population the demands on health and social care services are increasing and those now living in nursing homes are more dependant. In all the European states the levels of intervention and care are different and heterogeneous. Whe have to promote services to meet the needs of those with dual sensory loss earlier in order to ensure the best quality of life and to prevent the need for more expensive forms of care, beginning when people become 60 years old.

6°Prevalence of Deafblindness in older people
This population has been statistically invisible but considered to be an inevitably increasing proportion of the population in the future. Some studies in each country have been carried out but using various methods and definitions.
Ole Mortensen presented a paper on this subject at the conference in Poitiers in 1999. At that time the figures - around 30/100,00- are vastly underestimated , we can just. estimated that around 65 to 80% of people with a dual sensory loss are aged 75 years or older but we have to develop further epidemiological research in this field.

CHAPTER 2 DUAL SENSORY IMPAIRMENT (DSI) AND EFFECT ON HEALTH

DSI refers to the presence of both hearing loss and vision loss. Individual definitions of degrees of vision impairment and hearing impairment are clear. Definitions of DSI are not so clear and their effects on health in older people are mixed together with issues around the natural ageing process. Added to this is the difficulty of measuring the interaction between the two impairments.
So, practitioners lack tools to recognize DSI and clinical testing protocols for impairment classification and also lack guidelines for rehabilitation. For all that, I will try, herein, to describe the causes and effects of DSI.
An excellent overview of dual sensory impairment in older people was published in 2007 in the journal "Trends in Amplification" and I refer to it in this presentation

CAUSES OF DSI ASSOCIATED WITH AGEING

1/Normal age – related changes in vision system:

presbyopia

decreased pupil size
losses in contrast sensitivy
delayed dark adaptation
reduce visual field and color discrimination

Normal age-related changes in auditory system:
loss of elasticity in pinna
narrowing of the external auditory canal
rigidity of the tympanic membrane
ossicular atrophy
degeneration and decreased elasticity of Corti organ and basilar membrane
decreased blood flow in the brain reduces the auditory processing capabilities
2/Pathological conditions in vision loss
Macular degeneration
Diabetic retinopathy
Glaucoma
Cataract
And secondary stroke, malignant hypertension
Tobacco exposure
Some drugs
Pathological conditions in hearing loss
Presbyacousia
Some viral infections such as adenovirus and herpes zoster
Long term exposure to noise
Tobacco exposure
Drugs

EFFECTS OF DSI IN AGEING

In this section I propose to focus on three areas: effects on Activities of Daily Life(ADL), on cognitive capacity and on symptoms of depression.

1 /Effects on ADL

Two studies are reviewed:
The First study, published in the American Journal of Public Health in 2004 studied 9447 individuals over 70 years old. Individuals with DSI were identified by positive responses to the questions :
-are you having trouble with your vision, even with glasses?
-do you have deafness in one ear or two ears or any other trouble hearing?
This population is compared with personns who reported no sensory impairment
The Second study, published in the Archive Opthalmologic in 2006 examined 2015 individuals aged 55 to 98 years and followed them for 5years. Levels of DSI were measured with pure tone audiometry for hearing impairment and by visual acuity for vision impairment.
The results of these two studies with two different analytical methods are similar. They show people with DSI having more difficulties with walking (48.2% vs 17.8%), on shopping (36.9% vs 10.3%), preparing meals (23.9% vs 6.3%) and social activities including well being (16/4% vs 7.7%)
Nonetheless study findings of DSI seem to suggest that vision loss has the same effect as dual sensory loss on daily life activity compared with the effects of hearing impairment. But further research is needed to validate such a conclusion.

2/ Effects on cognitive capacity

Older adults with hearing impairment are disavantaged in dual task conditions, in memory attention and comprehensive language.

The association between visual contrast sensitivy and cognitive performance has shown a slower encoding of information with a lower contrast

The Mini Mental State Examination scores are lower with persons having vision impairment and severe or moderate hearing loss

It is Probable that interrelations exist between sensory, perceptual, and cognitive function. But more research is needed to test these hypotheses

The principal study on this subject is reported in the journal of Gerontology in 2006

3/ Effects on symptoms of depression

Three studies have shown self-reported DSI to be associated with depression, but no scale has been developed in these studies to measure the level of depressive symptoms

4/ Effect of psychological state with ageing

Older adults tend to "overestimate" their capabilities, and to "underestimate" their degree of impairment. Furthermore, the impairment begins slowly and silently and is considered "normal" with ageing.

5/The place of Geriatric medicine

Geriatric medecine is the medical specialisation for health related problems in older people, including acute, chronic,and rehabilitation problems, delivered in the commnity as well as in institutional and hospital settings.It adresses the management of multi system and organ diseases, recognizes the individual and varied nature of ageing process . Geriatric medecine is multidisciplinary and the main aim is to intervene at the lowest possible level of intervention and care. It has been demonstrated that comprehensive, holistic geriatric assessment and integrated care can be of great benefit in maintaining the quality of life of older people. In the field of acquired deafblindness, providers of geriatric healthcare have to prevent the passage from symptoms to illness. Their role is to prevent the onset of frailty.

For example DSI in ageing increases difficulties in walking, in preparing meals, and reduces social life

If no preventative action or rehabilitation programmes are in place DSI increases significantly the risk of falls, of denutrition, and depression

A recent review of geriatric medicine showed that the intervention of geriatric teams contributed to improving the quality of life of older people and improved services to carers, but access to these geriatric services is unequal

CHAPTER 3 CHALLENGE FOR THE PROFESSIONALS

A/ REHABILITATION

With the increasing level of healthy life expectancy the need for rehabilitation services in this field is increasing and citizens are raising their levels of expectation. But there are barriers to the development of rehabilitation services:

- firstly, elderly people who acquire deafblindness in old age remain invisible in society and their disability is regarded as a secondary issue

-secondly, in nursing homes Norwegian studies have shown that these disabilities are unknown, or neglected or attributed to mental decline. The lack of knowledge and availble tools to recognize the impairment are the principal causes of this barrier.

In current practice, audiologists address hearing impairment, and optometrists address vision

problems. Practitioners rarely consider the function of the other sense, nor do they necessarily realize the extent to which dysfunction is a barrier to rehabilitation
-thirdly, intervention and rehabilitation are complicated by the fact that with sensory losses there is added decreased manual dexterity and losses in cognitive capacity. Furthermore, when affected by dual sensory loss the person is deprived of compensatory strategies with the other sense
-lastly, therapists, mobility teachers and ADL teachers, lack knowledge of DSI in older people. Service providers are not sufficiently developed to answer needs and sometimes, particularly in France, low vision services and hearing impairment services are working side by side but not in integrated action

B/ TRAINING
The needs are growing with three target groups:
1° provide more knowledge about specifics in the normal ageing process to therapists; audiologists, optometrists and mobility teachers working usually with a younger population
2° provide more information and basic knowledge to nursing home staff and healthcare providers in the community about the consequences of disabilities to enable them to improve intervention techniques and to learn new strategies to manage all the activities daily life
3° develop interdisciplinary training for hearing, vision and geriatric services to progress from two or three independent, unconnected services to a single integrated system
Whe have to stop one +one + one = three to move towards more holistic care

C/RESEARCH
Following the same reasoning, multidisciplinary teams could be helpful in developing research. A conference in September 2004 by The Veterans Affairs Rehabilitation Research Services discussed technology for rehabilitation and identified the following 3 categories of devices which are needed:
1/ devices to improve communication with further research into supporting new assistive information technology
2/ devices to increase environmental awareness
3/ devices that address usability for individuals with DSI
It is crucial to invest
- in clinical research to find better rehabilitation strategies in DSI
- in developing tools to recognize the disability (currently only one scale to recognize DSI exists (Norway scale de K Lyng)
- in special training programmes for paramedical professionals
- in support for the education of trained qualified teachers
The older population must be included in clinical trials in all initiatives to improve the quality of life for those with a deafblind impairment

CONCLUSION
There is an opportunity with demographic pressure and increased life expectancy as expected, to consider new ways to reduce the effects of deafblind impairments as a core element in increasing Healthy Life Years.
There is a huge challenge to obtain health budgets in this field to promote access to services, to develop preventative action and research into new technology, and to develop integrated care systems with competence both in the field of sensory loss and in the field of geriatric medecine.
I hope all these comments will promote discussion and contribute to new initiatives

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