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Scenario: Course and Consequences of Chronic Diseases

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Introduction

Physical function decreases with aging. Maximal aerobic capacity decreases 50–60% between 30 and 80 years in healthy people. In the same period, vital capacity of the lungs decreases 40%, and renal function 50%. More complex functions such as postural stability decrease in the same order. With aging the prevalence of chronic diseases increases. The effect of the chronic diseases is superimposed on the effect of physiological aging. Many chronic diseases affect mobility and well-being. The decrease of mobility is one of the main threats to autonomy. Within LASA, the study of the effects of physical impairments and chronic diseases on autonomy and well-being is one of the principal tasks. We also project to examine longitudinally how the aging of the population is associated with changes in both the proportion and the absolute number of persons with chronic disease and disability.

In the Western world, an enormous increase in life-expectancy has occurred during the present century. Epidemiologists refer to this era as the fourth phase of the epidemiological transition (Mackenbach 1993): the 'age of delayed degenerative diseases' (Olshansky & Ault 1986). Due to the earlier stage in which chronic diseases are diagnosed and improvements in medical care for these diseases, the increase in life-expectancy for people with chronic diseases is associated with a longer lifetime with the disease, and a higher risk of developing disease-associated complications and disability. Efforts aimed at primary prevention of chronic diseases (reducing incidence by elimination of causal factors) and secondary prevention (early detection and effective initial treatment), although these were shown to be effective (Fries 1989, Rowe & Kahn 1987), are not adequate for preventing disability in older persons with established chronic diseases. For patients with chronic diseases, tertiary pre-

vention (aimed at preventing disability when chronic diseases are present) may be the most promising strategy to add life to years, instead of only adding years to life (Spitzer 1987, Fries 1989, Verbrugge & Jette 1994).

Conceptual model

In the LASA studies on course and consequences of chronic diseases, a conceptual scheme linking pathology to disability (the 'disablement process', see Figure 3.1), which has been developed for scientific and clinical research by Verbrugge and Jette (1994), is adopted. This scheme contains a similar core of concepts and causal connections as the International Classification of Impairments, Disabilities and Handicaps (World Health Organization 1993). The main pathway of the disablement process consists of four concepts and their causal links: pathology, impairments, functional limitations and disability. Pathology (or disease) may, or may not, cause impairments of specific body systems (such as signs and symptoms, but also physiological abnormalities). These disease-associated impairments or symptoms may, in turn, cause functional limitations (restrictions in basic physical and mental actions). Functional limitations may, or may not, result in disability (difficulty doing activities of daily life). Functional limitations are distinguished from disability by the absence of social (or situational) features. Disability, thus, can be defined as the result of behavioral processes arising from functional limitations. In other words: disability refers to the expression of a functional limitation in a social context (Verbrugge & Jette 1994).



Figure 3.1

Main pathway of the disablement process (adapted from Verbrugge & Jette 1994)

Psychosocial coping resources can affect physical health status by 1) inhibiting the progression of disease (impairments), 2) reducing functional limitations, and 3) reducing the impact on disability. Research so far hardly distinguished these different parts of the pathway, causing a lack of insight into the actual mechanism underlying the effects of psychosocial coping resources on physical health. This insight, however, is necessary for designing useful strategies to implement interventions in treatment and rehabilitation programmes for chronic patients and identifying high-risk patients for whom interventions might be valuable. These interventions may be

either directly aimed at psychosocial functioning or at physical functions that are indirectly affected by psychosocial factors.

LASA

The design of the Longitudinal Aging Study Amsterdam (LASA) includes longitudinal assessment of both parameters of health status (pathology, impairments, functional limitations and disability) and psychosocial coping resources (including structural and functional characteristics of the social network, self-efficacy, self-esteem and mastery). Herewith, unique opportunities are available to determine the influence of psychosocial coping resources on changes in health status, and to obtain new insights in the dynamics of the interactions between health status and psychosocial coping resources. In LASA, important ongoing studies about this subject include studies addressing the differential influence of psychosocial coping resources on incidence and course of chronic diseases and studies about physical and psychosocial risk factors for falls and fractures.

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