Functional Characteristics and Supporting Methods for Maintaining Independent Life of the Elders

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INTRODUCTION

At first, it is necessary to measure physical and intellectual function objectively to support independence of the elders who need care in daily life, and to analyze the reason why the elders cannot move or take action, and why the barrier occurs. An effective use of a survival or substituted function and also the improvement of physical environment, such as housing accommodation in private and public sectors, require removing barriers. In addition, social resources are useful to support independence of the elders in their daily lives. In this chapter, two issues were the focus: functional characteristics that change in accordance with the increase of age, and the methods of removing barriers for elders to move as they like.

BACKGROUND

We take actions with physical and intelligent functions in our daily life, but their functions change as they get old. Some activity limitations or participation limitations will occur when the necessary function for the action declines, as shown in ICF (International Classification of Functioning, Disability and Health) offered by WHO (2001) (cf. Figure 1). Therefore, to support independence of elders who need care in daily life, we must grasp declining status of physical and intellectual functions objectively, and barriers should be removed that cause activity limitations or participation limitations. In addition, an independence of the elders in their community life is feasible by positive utilization of social resources (Nishiguchi, Saito & Ozeki, 1997; 1998).

Figure 1. Interaction between the components of ICF
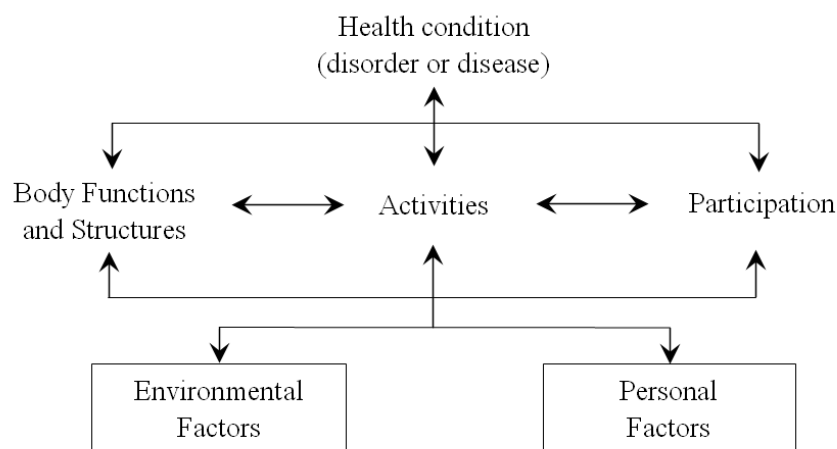
MAIN FOCUS OF THE CHAPTER

Functions of the Elders

How to Grasp Functions of Elders

There are two representative methods to grasp changes of human being functions (cf. Figure 2). One method is the longitudinal survey, which measures functions of one certain elder group as investigation subject. The other is the cross-sectional survey, which is a method to compare functions of different ages.

Change of Physical and Intellectual Functions by Aging

It is generally mentioned that many human being functions change by aging (Charness, 1985). Most physical functions become the highest values at the 20-year-old generation (Nishiguchi, Saito& Ozeki, 1996). On the other hand, it is known that some intellectual function is

maintained or raised (Dennis & Tapsfield, 1996). This knowledge was reported by Horn and Cattell (1966), and they classified the intellectual ability into "fluid ability" and "crystallized ability."

Furthermore, Thurstone and Thurstone (1941) proposed that intellectual ability of human beings is composed of "seven ability factors." They are as follows: Memory (M), Number (N), Perception (P), Reasoning (R), Word fluency (W), Space (S), and Verbal comprehension (V).

Cross-Sectional Comparison of Intellectual Ability

The authors made a description-style test to measure the previously mentioned seven ability factors (Nishiguchi & Saito, 2000). This test carried out to two subject groups: one elder group (20 people with an average age of 63.1 years), and a young group (20 people with an average age of 20.9 years).

In this test, four phases of degrees of difficulty (a degree of difficulty rises by order of I→IV) are set for

Figure 2. Cross-sectional and longitudinal survey
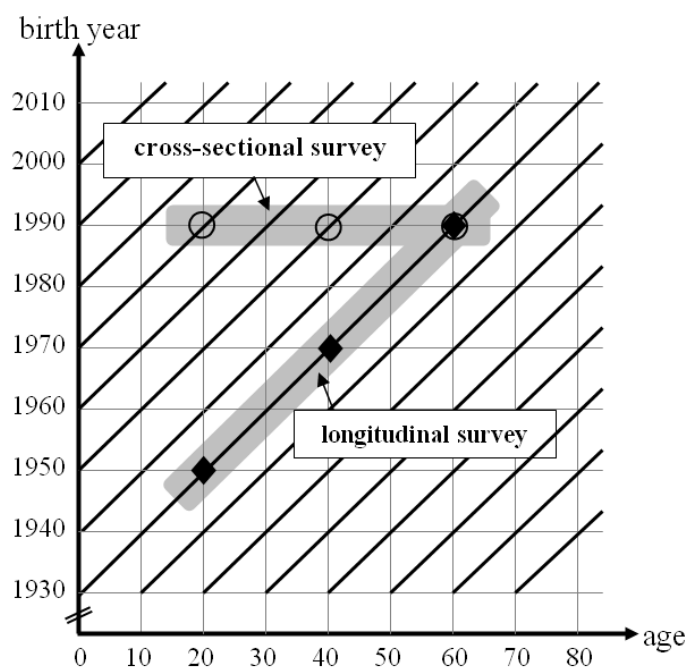
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