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Review

Definitions of successful ageing: A brief review of a multidimensional concept

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Summary. Successful ageing has become an important concept to describe the quality of ageing. It is a multidimensional concept, and the main focus is how to expand functional years in a later life span. The concept has developed from a biomedical approach to a wider understanding of social and psychological adaptation processes in later life. However, a standard definition of successful ageing remains unclear and various operational definitions of concept have been used in various studies. In this review we will describe some definitions and operational indicators of successful ageing with a multidimensional approach. (www.actabiomedica.it)

Key words: healthy ageing, quality of life, functionality

Introduction

In recent years, the concept of successful ageing has induced much debate (1-3), and various definitions of the concept have been introduced in various studies (4). According to the classic concept of Rowe and Kahn, successful ageing is defined as high physical, psychological, and social functioning in old age without major diseases (5, 6). In this brief review we use the classic name, although several terms of this concept, such as healthy ageing, active ageing, productive ageing, and ageing well, etc. have been used in the field (7). The relationship of these terms, and the dimensions of successful ageing are presented in the Figure 1.

The main focus in the concept of successful ageing is how to expand healthy and functional years in the life span (8, 9). The phenomenon of successful ageing can be viewed from a population or an individual perspective (7). At the population level, definition includes determinants of health and participation for the purpose of promoting policies, whereas at the individual level it is defined by outcomes of health, physical, and cognitive function, and life involvement (7). Because, successful ageing is a multidimensional concept encompassing domains of physical, functional, social, and psychological health, all of these dimensions should be taken into account, both with objective and subjective conditions, when studying the phenomenon (4, 8, 10, 11).

Kim and Park (12) conducted a meta-analysis of the correlates of successful ageing and they identified that four domains describing successful ageing were; avoiding disease and disability, having high cognitive, mental and physical function, being actively engage in life, and being psychologically well adapted in later life. Similarly, in the model of "Aging well" by Fernandez-Ballesteros et al. (13, 14), successful ageing is defined by the domains of health and activities of daily living (ADL), physical and cognitive functioning, social participation and engagement, and also positive affect and control, when the definition by Baltes et colleagues (15, 16) is also considered. Kok et al. (18) found in

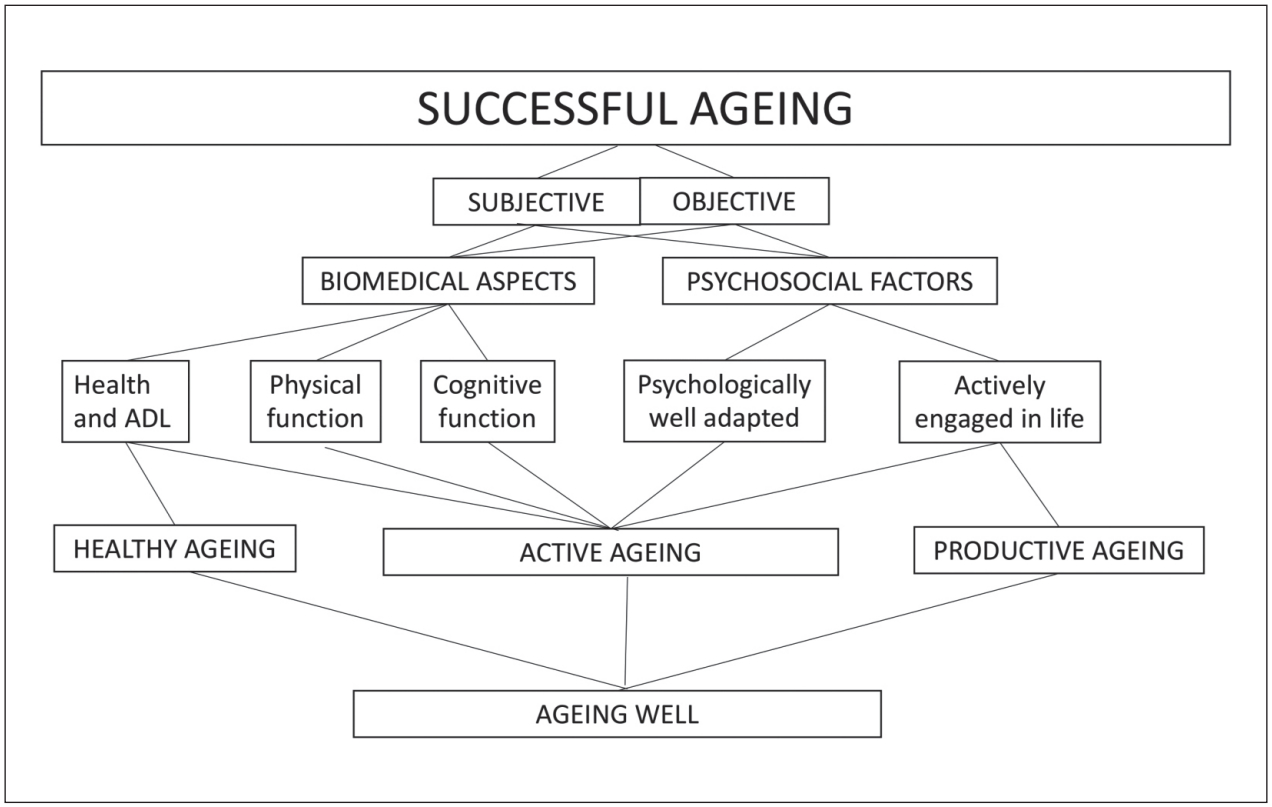

Figure 1. The dimensions of successful ageing. Modified from Fernandez-Ballesteros 2019, (7).

their study that many older adults were ageing relatively successfully, but there was a variation between indicators of characters of successful ageing, and the combinations of successful indicators varied also between individuals.

Most definitions of successful ageing include also outcomes which can be described as the operational definitions of the concept (7). The operational definitions are generally based on objective measurements of health and functionality and do not necessarily take into account individual's perceptions of their own health and wellbeing which would give more comprehensive view of ageing (4). Kleinedam and colleagues (19) have suggested that well-constructed operationalisation of successful ageing includes measurements of physiological health, well-being and social engagement, with subjective and objective aspects.

The aim of this brief review is to describe and discuss about conceptual and operational definitions of successful ageing with the multidimensional approach.

Biomedical aspects

Physiological function

Over the last decades, life expectancy has increased substantially. The increasing number of individuals reach over 80 years of age which has led to growing prone of multimorbidity, frailty and disability in older population (20). The cohort studies have shown that morbidity and functional limitations are associated with lower quality of life in old age (21, 22). Recent study showed that a good SRH and low levels of cardiovascular risk factors in midlife are associated with active and healthy ageing (23).

The concept of successful and healthy ageing has been generally associated with longevity, and the absence of disease and disability, which is based on the definition of successful ageing by Rowe and Kahn (5, 6).

Many studies have focused on longevity research to define successful ageing, highlighting the impor-

tance of having lived a very long and healthy life (10). The study of Andersen-Ranberg and colleagues suggested that "healthy centenarians do not exist, but autonomous centenarians do," which shows that longevity may have a price (10, 24). In addition, very few of the centenarians would be classified as "successful" according to Rowe and Kahn's criteria (10).

Avoiding disease and disability is common criterion also in the studies of successful ageing (12). However, recent studies have suggested that absence of disease and disability is not the most important element in the concept of successful ageing, and people with chronic disease can also age successfully (15, 25, 26). Young and colleagues' model of successful ageing (17), and also the model of selective optimisation with compensation proposed by Baltes and Baltes (15, 16), takes into account adaptive psychological and social mechanisms which can compensate limitations of physiological health. Manierre (27) has demonstrated that Young and colleagues' model provides a holistic perspective of successful ageing among people with chronic diseases.

Cognitive function

Maintaining cognitive abilities and preventing memory disorders are key aims in old age (28). Hartley et al. (28) have suggested that successful cognitive functioning should be a central component of successful ageing. Cognitive development in old age differs individually (28). Longitudinal studies have shown that midlife is a critical period for the beginning of the pathology of cognitive disorders, although indicators of the disease process remain still poorly understood (29). A compensation for age-related changes, a reliance on memory, and a cognitive reserve are themes that might explain higher cognitive functioning in old age among some individuals (28). According to this, relatively higher function may reflect relatively more successful ageing (28).

The cognitive functioning comprises perception, attention, memory, and higher functions, but indicators of successful cognitive functioning are often chosen to tap particular dimensions of functioning (28). Depp and Jeste (11) found that 13 of 29 operational definitions of successful ageing consisted indicators of cognitive functioning, and eight of those used a clinical assessment tool as an indicator. They also found that standards for successful cognitive ageing have large differences in studies (11, 28). Hartley and colleagues suggest that the clinical cognitive measurements may not be optimal for reflecting of current thinking in cognitive psychology (28).

Physical function

The furthest developed domain of successful ageing is physical functioning (30). Maintaining physical function is an important component of successful ageing (31). Regular physical activity during the life span is a strong predictor of healthy ageing (30-33). Decrease of muscle mass and muscle strength are related to ageing processes, but also to chronic diseases and lifestyle (nutrition, physical inactivity) (31). Sarcopenia is characterised by low muscle strength and low muscle mass and quantity, and it is associated with the development of functional disability (34). Sarcopenia is also a component of frailty, which is a syndrome that refers to vulnerability to stressors, loss of reserves, and an increased risk to functional disability and mortality (31).

The indicators of mobility performance and physical function are well known, and there is a consensus of measures and evaluation, for example, walking speed is an excellent marker of overall health and predicts the maintenance of physical function (30). The indicators of mobility performance and physical function can include both objective and subjective measures, for example ability to perform ADL and physical performance tests (30, 31). Chronic pain is a common condition in older adults and contributes to functional decline and limitation of activity (35).

Psychosocial factors

Psychosocial conditions contribute to ageing processes (15). Baltes and Baltes (15) have proposed the model of selective optimisation with compensation (SOC) which explains adaptation to deficits of ageing with successful psychological and behavioural processes. The SOC model consists both objective and sub-

jective criteria and reflects people's capacity to make choices that suit best to individual resources. In addition, Young and colleagues have proposed an alternative model which captures the possibility to compensate physiological limitations with psychological and social dimensions (17). According to the study of Kim and Park (12), older adults can age successfully, if they are socially active and psychologically well adapted, even though they encounter decline of physical and cognitive function.

Actively engaged in life

Good social functioning is often determined as an important factor in successful ageing, especially by older adults themselves (36). It reflects a wish to retain a role in society and being involved with people (36). Social functioning includes indicators of loneliness, social activity, and emotional and instrumental support given to others. For example, the participants could be defined as being actively engaged, if they have reported involvement in voluntary work, or participating in a sport, social or other kind of club (36).

Psychologically well adapted in later life

Recent studies have shown that life satisfaction, purpose in life, and perception of the ageing process contributed to ageing successfully, and therefore psychological domain of adaptation in later life is an important part of successful ageing (9). Emotional functioning could be assessed by depressive symptoms and satisfaction with life (15), and subjective feeling could be assessed with questions, e.g. "describe how successfully you have aged" (21).

Conclusions

Definition of successful ageing has shifted from biomedical to more holistic view, and towards more subjective aspects of the ageing process (1). The multidimensional approach of successful ageing could be more informative than focus on single health outcomes, such as chronic diseases or functioning (1), and therefore it can be used for understanding and promoting the concept in the populations of ageing societies. There still remains need for universal description and consensus of successful ageing which incorporate broad scientific evidence, and also need for operational definitions of indicators for this phenomenon.

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