Stress: the good, the bad and the ugly?

In a world with increasing life span, societies with more and more people living longer and longer, ageing research within both disciplines, gerontology (investigation of mechanisms of ageing) as well as geriatrics (treatment of elderly frail patients) are particularly relevant to society. With this increase in life span, the causes of death have changed towards degenerative diseases, such as cardiovascular diseases. There is a growing body of evidence that high or long-lasting stress results in permanent changes in the individual response capacity that influence susceptibility to disease and functional decline. Indeed, it seems to be a well-known fact that stress is a problem per se: a lot of news about biological stress, disease stress, posttraumatic stress, social stress, nutritional stress, job stress, and other stress, as well as the anticipation of stress (even if it is objectively not high) pointed to the well-known bridge towards degenerative diseases and ageing. Whereas this connection seems to be easy, we have to realize that this is not true.

In this issue we therefore present a series of articles about stress and ageing from different viewpoints. Gerontology as an interdisciplinary approach for research and action often suffers from the fact that different disciplines have different histories, languages, methods and questions they address. That might seem something like natural in the development of big players, such as biology, medicine, psychology and sociology but astonishing in that way that gerontology itself - and every discipline in this field - knows (or seem to know) that there is something outside its own field which may be necessary for the design, interpretation and implementation of research [1, 2]. There-

fore, the idea arises to look at an important topic like stress from different areas of gerontology.

In the first paper “Stress and biological aging: a double-edged sword” Simm and Klotz address the biological knowledge of what happens regarding stress and ageing in living systems. The main message is that stress, such as oxidative stress happens during the whole life course, is biological inevitable, and is followed by adaptation in different aspects [3, 4]. For example, advanced glycation endproducts (AGE) as a biomarker of ageing are within our daily nutrition but for example also linked to outcome in coronary artery bypass patients [5]. The second main point is that stress even contributes to the ageing process - and therefore to the development of (chronic) diseases and functional decline - by the stress exposure itself over time and a declining capacity of repair mechanisms. Furthermore, they mention the fact that stress exposure is not in general bad and adaptation can also lead to a positive outcome [6]. In this way, stress is essential and a prerequisite for adaptation, prevention and further development.

In the second paper by Wanka et al. stress was analyzed from a social viewpoint based on “well-being”, a quantitative online survey in four countries. The baby boomer generation, born between World War II and 1970, was thought to have faced a lot of stressors. Indeed, employees of the baby boomer generation express to a high percentage symptoms of physical and psychological stress. Whereas social support positively influences the negative effects of a limited health and lower education for female baby boomers, male baby boomers lack the resources to effective-

ly cope with work strains. It is of note that the progress in measuring biomarkers in disease and ageing more and more reveals also the link between social stress and biology as it's shown in children [7, 8].

In the field of old age psychology the high diversity in stress reactions was shown in disease, e.g. myocardial infarction [9], emotional stress like depression [10], and bereavement [11]. Interestingly, in the third paper, Schilling and Diehl focus on affective reactivity to daily stressors especially in old age. They concentrate on two main postulations: firstly, ageing should be associated with increased affective reactivity and secondly, due to adapted emotional self-regulation skills during the life span, there should be an age-related decrease in stress reactivity. As the results regarding both these facts are inconsistent, the main message of this paper is that older adults react to multiple stressors in a more adaptive way than younger adults. The capacity in highly vulnerable elderly people exposed to posttraumatic stress depends of many factors [12]. It is fascinating that it was now shown that psychotherapeutic interventions in posttraumatic stress disorder patients may reduce the amount of basal DNA breakage [13].

The last paper “Stress and optimal ageing” by Gogol makes the effort to combine knowledge from biology and medicine. As many of the basic hallmarks of ageing are now measurable on cellular and organ levels, he points out that a life course approach to chronic disease today in medicine is missing but in progress. The accumulation of stress during lifetime and the age-associated development of chronic diseases raises some questions. Firstly, is it pos-

sible to disentangle ageing from disease, and secondly, is the term “healthy ageing” the right one? As there is a growing body of evidence about successful interventions in the elderly population - even in high age - questions remain about our biological understanding and the right interventions in a highly diverse population. Most research now is done in the field of cardiovascular disease [14, 15] and nutrition [16, 17] or both [18] linking basic mechanisms with disease and interventions [18, 19]. That means also to define elderly people as a minority - such as sex and gender and ethnicity - in clinical research [20].

Within the framework of suspense focusing on stress from biology to social and psychological science up to the integrative concept of medicine, it can clearly be seen that stress is not a simple and easy concept. Historically, in a biological context, factors/demands causing a disturbance of the homeostasis can be experienced as stress. Regarding the different views on stress, wording as well as conceptual research changes within the different disciplines. At the end, as all of them will affect human health, we have to integrate these different lines of research [21].

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Zwei neue Patienteninformationsbroschüren der BZgA zum Thema Sturzprävention

Unter dem Dach des Programms „Gesund und aktiv älter werden“ entwickelt die Bundeszentrale für gesundheitliche Aufklärung (BZgA) gegenwärtig das Präventionsprogramm „Älter werden in Balance“. Zielsetzung des Programms ist es, durch körperliche Aktivität und Bewegung die Gesundheit und Lebensqualität älterer Menschen in Deutschland zu fördern, Pflegebedürftigkeit so weit wie möglich hinauszuschieben und eine wachsende Sensibilisierung für das Thema Gesundheit im Alter herzustellen.

Im Rahmen dieses Programmes haben die Bundesinitiative Sturzprävention und die BZgA zwei Broschüren entwickelt. Anfang Juli 2015 wurde die Broschüren mit großer Resonanz erstmals auf dem 11. Deutschen Seniorentag in Frankfurt a.M. vorgestellt.

Broschüre 1: „Gleichgewicht und Kraft - Einführung in die Sturzprävention“

Broschüre 2: „Gleichgewicht und Kraft - das Übungsprogramm“.

Neben einem Trainingsprogramm werden Informationen zu dem wichtigen Thema dargestellt. Verständlich erklärt, liefern sie Tipps, Hilfen, nützliche Adressen und Anleitung wie Stand- und Gangsicherheit verbessert werden können. Dabei wird sehr genau darauf geachtet, dass nur bewährte Maßnahmen und Übungen weiterempfohlen werden. Die Idee für die Broschüre stammt aus England (AgeUK) und wurde im EU Netzwerk ProFouND (Prevention of Falls Network for Dissemination) weiterentwickelt. Zielgruppen sind besonders geriatrische Patienten und deren Familien, die entweder sturzgefährdet sind oder einen Sturz hatten. Die Koordination der Inhalte lag bei Dr. Niki Brenner und Prof. Clemens Becker, Robert-Bosch-Krankenhaus, Stuttgart.

Zu beziehen sind beide Broschüren als kostenloses PDF-Dokument zum downloaden oder auf Bestellung über die Webseite www.bzga.de unter der Rubrik Informationsmaterialien „Gesundheit älterer Menschen“ oder per Post: BZgA Bundeszentrale für gesundheitliche Aufklärung, 50819 Köln.