Research Article

How do older adults cope with their aging and age? A scale for an offensive coping strategy of older adults

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The article describes the development and properties of an aggregate scale that characterizes an offensive, proactive strategy for coping with one's own aging and old age. Data were obtained from an anonymous online survey of 1,692 Czech older adults aged 65-84 in June 2021. The offensive strategy scale shows sufficient internal consistency and acceptable validity and reliability. Those with a purely offensive strategy are more likely to be young-old people, still employed, with a higher vocational school or university degree, primarily from large cities, with previously predominantly mental work and with a greater range of activities including household activities. The results are consistent with selected items of the M. P. Lawton´s well-being questionnaire (PGCM) and with the WHO emotional well-being index. The proposed offensive strategy scale can be used (along with the defensive strategy scale not discussed here) as a basis for a construction of a validated instrument for identifying behavior that is used by older adults to cope with their own aging and age.

Introduction

Today we know a great deal about stress and its management. Something is known about how older adults manage their old age and aging. However, we know very little which strategies are persistently chosen by older adults to cope with their old age and aging, to maintain a consistent self-concept and thus self-esteem. It might therefore be useful to have a tool to identify ('measure') this strategy and to provide a quantified basis for categorising specific 'personal coping strategies'.

Stress and its coping is a frequent and common topic in the psychological literature and there are many studies that address it (cf. e.g., Lazarus 1984; Lazarus 1993; Heckhausen 1995; Skinner 2003; Wong 2006; Cervone 2013). However, most often they deal with simple reactions to stress that arises

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under the influence of an isolated and temporary event such as failure in a school exam or a break-up with a partner. In addition, many studies are based solely on examining and surveying university students.

As a frequent subject of research interest there are ways in which a person responds to a stressor (an event, a situation) and which help to overcome and manage the stress. Among the most common, there are seeking support in the immediate social environment, escaping from the problem, distraction, trying to solve the problem, adapting, denying the existence of the problem, aggression, self-blame, social isolation, positive reappraisal, and others (Gunther 1994; Skinner 2003; Lazarus 2006; Carver 2010, etc.). Empirical studies in recent years have not yet yielded fundamentally new findings; rather, they are characterized by a more detailed and specific focus. The objects are patients with specific illnesses (e.g., Leecharoen 2021 on older adults with dementia), various ethnic minorities (e.g., Luong 2020 on Chinese Americans' coping with interpersonal tensions), older adults in a bad mood (von Faber 2016) etc. Most often, in-depth interviews are used here with fewer than ten participants and the overall approach is psychological or medical.

We believe that the concept of coping can be extended to coping with one's own old age and aging, just as we might talk about coping with puberty, pregnancy and other life periods that bring specific 'ontogenetic' demands. However, the simple patterns of behavior that people use in response to common stressors, such as prayer, sedation, self-irony or escape into fantasy, are not sufficient to describe coping with a complex and long-term (and conclusive) process such as aging, unless they are part of a wider set of coping resources. Although old age and aging may not bring daily stress, there is an accumulation of stressful events and changes that - in total - have the potential for chronic, albeit sometimes mild, stress. Coping with stress can then be seen as a form of adaptation that a person is able to reflect on, is aware of, and in some cases actively manages it.

An older person is exposed, of course as well as a young person, to a variety of stressors which are of single events´ nature and have an impact on his/her physical and mental state or on his/her social life. Yet specifically in older age, these include, for example, the definitive abandonment of regular gainful activity together with the loss of many important social contacts and the enormous increase of 'free' or - more precisely - unstructured time; one's own serious illness which may mean a significant limitation in self-sufficiency, in social communication and in other areas of his/her life; a permanent care of a non-self-sufficient partner (or of another member of the family); death of the life partner; involution changes in his/her body resulting in a loss of physical and mental capacity and

functionality; but also conflicts within a broad family or remotion, especially to a distant location or a social care institution. A stressor may be a very knowledge that one's strength is inevitably waning, that one cannot keep up, that one will die. Typically, it is the stress caused and exacerbated by the decline of short-term (working) memory which older adults perceive as a symptom of the impending onset of Alzheimer's disease or dementia. An older person is aware that his or her long-standing disability is likely to be permanent just like chronic diseases. This phenomenon can be overall called a stress of aging.

Aging is thus a significantly more complex process than a single life event that can be managed by simple cognition- or emotion-focused responses, problem-solving, or stressor-avoidance, as reported in the "classic coping" literature (e.g., Lazarus 1984; 1993; 2006). Nevertheless, even in old age, there is a great deal of variability in behavior and experience that relates to coping with old age (e.g. Aldwin 2021). It is to be assumed that in the so-called 4th age (e.g. Baltes 2003), which is characterized by a general fragility of the organism and vulnerability of the person and personality, coping with one's own aging and old age takes place even more strongly and dramatically than in the 3rd age. Nevertheless, there is also great heterogeneity within these cohorts.

We assume that there is a general factor behind the older person's life expressions, his/her daily behavior, experiences, chosen activities, etc. which could be best described as a personal coping strategy (PCS). This is a general life line, not a fully conscious complex of actions, attitudes and feelings, which predetermines behavior and experience in older age in relation to one's own aging and old age. It is a "program" for coping with continuously emerging life circumstances and stimuli, an overall direction of behavior, a constantly recurring, almost daily basis in the thinking of an older person. It is not about memories but about the time frame in which current events are interpreted. The strategy is related to the willingness to step out of one's comfort zone, to overall resilience and to certain personality traits. The strategy is formed by a lifetime´s accumulated experience and habitual behavior in meeting needs and pursuing personal values. It represents the basis of lifestyle in old age. It is based on a certain self-concept and closely linked to the overall view of one's own life.

Since the focus of this article is the development of a scale assessing the degree of application of one of PCS types, it is necessary to define these strategies first. In the conception of R. S. Lazarus (1984; 1993; 2006) and his followers, the strategies are the simple reactions to a stressful event or groups of similar reactions, already mentioned. Yet, according to P. T. P. Wong and his colleagues, problem solving and reducing emotional distress, which correspond to the two basic strategies in R. S.

Lazarus's conception, are only two forms or directions of reactive coping with a stressor. Creative forms and ways to prevent the occurrence of stressful situations by improving living conditions and/or minimizing negative stress and maximizing subjective well-being should also be considered. The creative coping consists of caring for the growth of coping resources (proactive, preventive coping) and creating a positive attitude towards life (transformative coping). It therefore has a preventive, not a reactive, function (Wong 2006, 35-38, 129).

In the context of the Wong's conception, it seems likely that Lazarus does not appreciate that humans are constant learners and can develop creative ways of coping with potential stressors. In this connection, S. V. Gunther (1994, 22) singles out transformational coping which, unlike regressive coping, involves decisive action and optimistic thinking. A resilient, hardy personality uses transformational coping, which includes both responding appropriately to stress and seeking change in the current life, and this change is incorporated as a positive part of its life.

One of the essential aspects of coping with old age consists in the sources of regulation of behavior and experience, that is motivation. J. Rotter (1966) introduced the concepts of internality and externality [1]. Internality is the subject's idea (belief) that one dominates situational factors, that he has the ability to control events that concern him. His life and the influences on him from the environment are under his own control. His basic attitude is offensive, "proactive". Externality means to recognize out-of-person´s factors as stronger, beyond personal control. People with high levels of externality consider even the immediate future (and often the past) to be managed by fate, chance, social environment, authority and other circumstances that are independent of themselves. Their basic attitude is defensive and their self-confidence is often low but this in no way means that they could not live a contented life, the contented old age of a reasonably healthy person.

The way in which stressors are managed is related to personality resilience and a source of behavior regulation (Carver & Connor-Smith, 2010). People with high self-esteem are more likely to engage in positive and active attempts to cope with stressors. People with low self-esteem have been found to have a tendency to become overwhelmed by negative emotions and are more likely to abandon their goals due to stress. People with an internal source of behavior regulation are more likely engaged in planning and active coping than people with the external regulation. Active coping and planning a way to deal with stress is positively associated with optimism, with feeling that the subject is generally able to do something about stressful situations, with self-esteem, and with overall resilience. This has been confirmed by later research. For example, M. Zapater-Farají and her colleagues found (Zapater-

Fajarí 2021) that resilience, in the sense of the ability to overcome adversity and to face stressful demands and experiences, is associated with active coping strategies, with subjectively successful aging, with low risk of disease, and with high psychological and physical functioning. Active strategies included solution planning, direct action and suppression of competitive activities while passive strategies included avoidance on behavioral level, mental disengagement and religious activities.

Thus, coping style is related both to resilience and to other personality traits. It appears to be probable that problem-focused coping is more likely to be used in situations where people believe that something can be done about the stress, and emotion-focused coping is more likely to be used where people believe that they must endure or tolerate the situation (Scheier 1985, 187). M. Durak (2007, 28) notes that types of coping strategies are linked to psychological symptomatology in the sense that emotion-focused coping is associated with indicators of maladjustment such as pessimism, negative physical symptoms, depression and panic. In contrast, problem-focused coping is conceptually linked to personal well-being.

Types of personal coping strategies of older adults

We consider, in accordance with S. Gunther (1994, 11), that there are two basic approaches to empirical identification of coping strategies. The first starts with conceptual categories and works deductively, with testing and comparing actual responses to a stressful event. The second starts with actual reactions, works inductively, and reveals features, that represent general strategies. Our approach corresponds to the first alternative except that it does not work with an individual stress event, as explained above.

Coping strategy is - methodologically meant - a latent variable that we cannot observe directly but we can infer it from a series of manifestations that establish its defining features. These partial manifestations have the character of indicators, symptoms and, as manifest variables, are empirically detectable. PCS can be inferred, at least in part, from a direct, participant observation of the elderly in their natural environment, from in-depth interviews, from analysis of their letters and oral communications, and from structured interviews or questionnaires. A questionnaire is probably not a very valid survey instrument but, as a source of data, it is cheap, quick and readily available, and is therefore the most commonly used in studies.

In the preparatory phase of our research, we defined two dichotomously conceived strategies as ideal types [2]. Their main features are listed in Table 1 and can be elaborated into a set of questions that serve

as predictors of the overall manner that older adults use in relation to their own old age and aging.

Characteristics	Offensive strategy (OS)	Defensive strategy (DS)
overall activity	active	passive
relationship to the problem (stressor)	anticipates problems and tries to solve them (to maintain capacity and functions)	displaces or ignores problems (resigns) or suppresses symptoms of old age
ambition	has demands on one's life, desire to change oneself and the world around oneself	passive (mal) adaptation to what is coming
in relation to his/her outlook	optimistic	pessimistic
focus on activities outside household	many interests and hobbies outside household	few interests and hobbies outside household
form of coping (Wong 2006)	creative and reactive	reactive
coping by resilience (Gunther 1994)	transformational	regressive
source of regulation of behavior and experience (Rotter 1966)	(mostly) internal	(mostly) external

Table 1. Two basic coping strategies to deal with old age and aging

Some components or aspects of the strategies can be seen as two poles of a continuum (e.g., many concerns versus few concerns) but others establish different qualities (e.g., transformational versus regressive coping). Thus, we are tentatively talking about two distinct, discontinuous strategies that are only partially measurable by identical scales.

The positively oriented, offensive coping strategy (OS) is based on anticipation of aging and aims to improve or maintain functional, physical, mental, and social capacity. The concept of active aging (according to WHO 2002) is actually a guide to the offensive PCS. In contrast, a defensive, that is a

passive and often maladaptive strategy only suppresses the symptoms of aging by choosing a lifestyle while objective, regressive processes continue, or it suppresses the awareness of increasing difficulties or leads to resignation, i.e. to acceptance of ongoing changes.

The offensive strategy is not exclusively focused on problem solving, to mitigate the manifestations of aging and to exploit the remaining potential, and the defensive strategy is not exclusively focused on emotions and evaluation of the situation, or on a suppression (escape). In our opinion, in practice there is never a separation of the behavioral side of coping from the cognitive and emotional side, as traditional psychological concepts (P. Lazarus) assume in the analysis of coping events. In our conception, the behavioral and emotional, or also cognitive, aspects of coping are constitutive for both two strategies.

The defensive strategy may also be a functional, adaptive variant for the life of the elderly. Older adults can experience a satisfying old age, in a prevailing state of a good well-being and in a sense of security, if they are not exposed to massive stress and are surrounded by positively experienced interpersonal relationships. His/her activities are predominantly linked to his/her home and family, with a predominance of relaxation and passive consumption of an undemanding cultural content. The subject is neither "stressed" by the demands of a “correct” life regime nor by a life pattern full of miscellaneous challenges and activities.

A proactive strategy as a comprehensive way of coping with stress implies to mobilize internal and external resources that are available to an older person. The internal resources include, for example, learning from one's own experiences, acquired or innate resilience, vitality and flexibility; external resources include to employ friends and acquaintances as helpers and mentors, or focused studying of similar situations (from friends, from reading). The application of the defensive strategy is typically characterised by adaptation rather than activation of one's own strengths.

Moreover, the following elements can be found within the offensive type of strategy:

- performing a variety of activities that appropriately affect physical, mental and social capacities and functions,
- maintaining a supportive social environment (especially family and friends) with opportunities for a daily exchange of ideas and emotions and with ongoing strengthening of friendship bonds,
- striving for a deliberately 'healthy alimentation', getting enough sleep and supporting immunity.

For many older adults pursuing this active strategy, we could probably find other practices such as cultivating hobbies at home and in the community, including reading books and playing games, using a sense of humour or seeking opportunities for humour, or practicing relaxation techniques such as yoga and meditation.

As mentioned, the a-priori defined "pure" strategies are abstractions to which the real life of the elderly is only approximated to a certain extent. They do not represent a unicit (one to one) classification of older adults who should be unambiguously "assigned" to one or another strategy. However, we can find empirically observable symptoms that are characteristic of a given strategy and that can thus capture the propensity of an older person to use that strategy [3].

A general chart of the factors that influence PCS is shown in Figure 1. It includes relevant relationships that play major (the bolded arrows) or complementary roles in the development of coping strategies. We will use some of them in the following text.

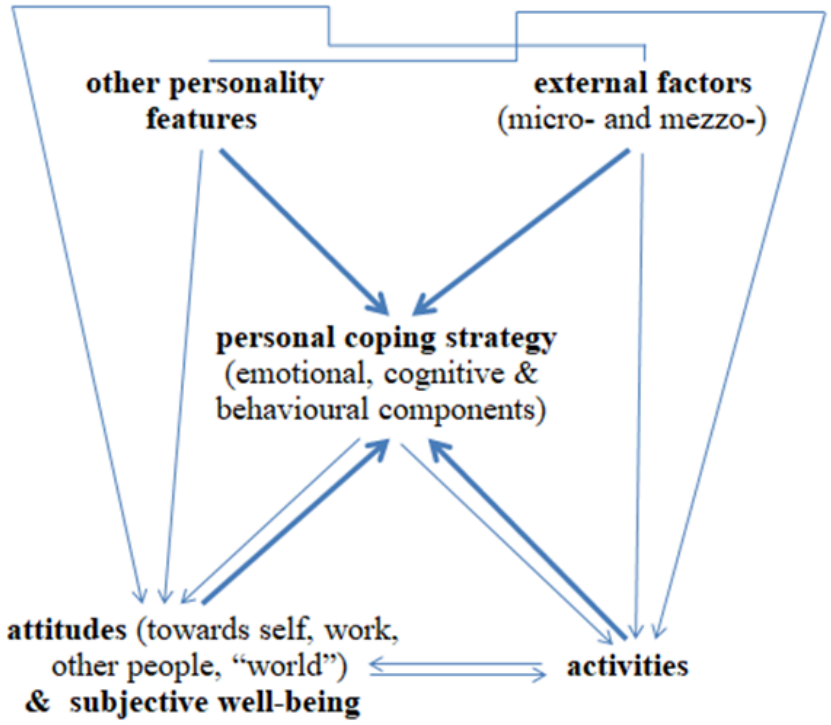

Figure 1. A relational playground of a personal coping strategy

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Method

Scale construction

In constructing the scales, we used the OPQoL (Bowling 2016), SWLS (Diener 1985; Vanhoutte 2014), CASP (Hyde 2003), the WHO-5 emotional well-being index (WHO-5 undated; Topp 2015), and the PGCM scale (Lawton 2003), which is essentially a questionnaire on attitudinal and emotional levels of quality of life. We also used one of the domains identified by N. Zanjari (2019) in exploring subjectively perceived successful aging, as well as subscale 6 ("Positive Emotions") of the extraversion dimension of the NEO-FFI (McCrae 2005; Cervone 2013), one question from the American Longitudinal Health and Retirement Study (https://hrs.isr.umich.edu), and some items from the Sinclair's BRCS Brief Resilience Scale (Sinclair 2004).

To these questions, we added questions affecting regular or frequent activities, which were applied in our pre-survey from February and March 2019 (a total of 3207 Czech people aged 60-94 years using the Internet; the median age was 69 years). Furthermore, we used several sayings and "folk wisdom" related to old age as indicators of attitudes towards one's own old age. We collected them over several years from various sources and presented 26 of 91 items to 67 people aged 60-82 years (median age 71 years) in March 2020. The final selection of the 12 items for the main survey was made taking into consideration Cronbach's α values. We further formulated six questions on "everyday behaviors" based on the findings from individual interviews. Indeed, we were careful to cover not only the cognitive and emotional but also and above all the conative (behavioral) component of the OS.

For the purposes of the empirical research, we finally defined the offensive strategy by means of 21 questions that were formulated in six places of the questionnaire rather than in a continuous set of questions. They come from four batteries of questions and two stand-alone questions. For completeness, we have taken the question labels from the questionnaire into Table 2. By counting certain response values (e.g., "strongly agree"), we created a gross score and used this for further analysis.

Question label and modified wording	Type	Answers counted in the scale
19 Are you currently taking courses or attending school? (with at least 30 hours of tuition in total, or a semester at a third-age university or attending high school or college)	Ac	at least 30 hours; or to a lesser extent repeatedly
33 Comparing this year with the last one, how much energy and zest do you have for your life?	At	lot more; a little more
3901 Can you independently perform various activities outside your home (e.g., shopping in stores, going to the physician, going for walks)?	Ac	definitely yes; more likely yes
3910 Do you pursue to maintaining your physical health, fitness, exercise?	Ac	definitely yes; rather yes
People have different views on old age. To what extent do you agree or disagree with each of the following views? *(applies to the following six items)*		
4007 If one has learned something useful in life, he/she should use it in the old age.	At	I agree completely; I agree rather than disagree
4008 One should see that does not yet belong to the very old school.	At	I agree completely; I agree rather than disagree
4009 A person who is almost always resting rather than doing something is aging faster.	At	I agree completely; I agree rather than disagree
4010 What you haven't done in your life so far, you can at least try now, in retirement.	At	I agree completely; I agree rather than disagree
4011 I enjoy doing something for others.	Ac	I totally agree; I agree more than I disagree.
4012 I want to use my time and fill each day with interesting work.	Ac	I totally agree; I agree more than I disagree
461 To what extent do you try to keep a certain order to each day, for example, getting up on time, doing what you set out to do during the day and	At	very much

Question label and modified wording	Type	Answers counted in the scale
looking forward to evenings?		
463 To what extent are you interested in and practice the principles of healthy alimentation?	Ac	very much
464 How often do you pursue a variety of physical and mental hobbies, such as reading books, listening to music, meeting friends, working in garden, walking in nature?	Ac	often
465 How much do you volunteer in your municipality or club?	Ac	very much
466 How often do you seek out opportunities for humor, such as reading humorous books, watching TV comedies, joking with friends?	Ac	often
To what extent do the following characteristics apply to you. Are you like this? *(applies to the following six items)*		
4701 I enjoy making plans for the future.	At	definitely yes; more likely yes
4705 I look for new ways to overcome difficult situations.	At	definitely yes; more likely yes
4706 Whatever happens to me, I believe I can handle it.	At	definitely yes; more likely yes
4707 I believe that dealing with difficult situations has a positive effect on me.	At	definitely yes; more likely yes
4708 I actively look for ways to cope with the losses I experience in my life.	At	definitely yes; more likely yes
4710 I wished to stay in my job as long as possible.	Ac	definitely yes; more likely yes

Table 2. The offensive coping strategy scale items

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The scale consists of two types of questions: the "At" is for 11 questions that emphasize cognitive, emotional, and behavioral components of attitude (e.g., questions 4007 attitude towards yourself, 4706 confidence, 4707 optimism); the "Ac" is for 10 questions on general or specific activities. When selecting items for the scale, we excluded questions expressing long-term feelings or mood, which were primarily components of the well-being in PGCM and the hedonic component of well-being in CASP.

In the preliminary stage of the scale construction, we came out from the face validity; we consider that the selected items correspond well to the main characteristics of the ideal type of proactive strategy, as listed in Table 1. The offensive strategy scale is additive, and the raw score is calculated as the sum of the occurrence of the selected response values in the items. Thus, the range of the scale is 0 - 21 points.

Only no more than 4% of the respondents did not answer any sub-question (scale item) what supports an assumption of the general acceptability of the questions by persons which were polled.

The research sample

The aim of the surveys in 2019-2021 was not to provide a fully standardised instrument for measuring basic attitudes to aging and old age in terms of coping strategies but to obtain various data and insights about the activities of older internet users, then to present a first draft of scales for measuring PCS and to conduct a preliminary exploration of them, i.e. to find out which of the two a priori derived type strategies is preferably used by each segment of the older population.

A principal, anonymous online survey using a non-public questionnaire on a web-based platform was conducted in June 2021. A sample of 1692 internet users aged 65-84 was obtained. Three sources were employed for recruiting respondents: a) an original panel of 907 persons who agreed to be contacted in previous surveys (2019, 2020), b) a two-stage selection in which representatives of non-profit organizations operating senior websites, managers of third age universities, senior clubs, etc. were asked to send out our requests to "their" older people for completing the questionnaire, c) requests to forward the link to the questionnaire to other 60+ people (chain emails with a "snowball" effect).

The sample cannot be representative for the entire elderly population as it was only drawn from those who use the internet - which is roughly half of the Czech people 65+. The sample consists of 72% of people under 75 years of age, 29% still employed in work, 42% with secondary and 47% with higher education, 80% women, the average age is 71.5 years (SD=4.6). Among older internet users -

compared to people who do not use the internet - there is likely to be a bigger proportion of people with higher education, greater general digital literacy and thus awareness, and probably a greater range of daily or casual activities. However, a representative sample is not necessary: studies that define and test the usefulness, validity and reliability of scales are often based on testing small numbers within specific groups.

Results

Scale properties

The research sample allowed to process individual gross scores (GS) and to assess the validity and reliability of the scale. In case a question was missing an answer, we followed a rigorous procedure and excluded the questionnaire from further processing instead of replacing the missing value. As a result, the number of complete responses for all 21 questions was reduced to 1493.

The observed range of the scale is 3 to 21 points, the arithmetic mean is 15.4, the mode and median are 16, and the standard deviation is 2.9. We do not consider the distribution to be sufficiently normal, - given the observed asymmetry (Chart 1) and the not entirely linear pattern of quantiles on the Q-Q plot (Chart 2) - although the small difference between mean and median and the Kolmogorov-Smirnov test (test statistic 0.146) admit otherwise.

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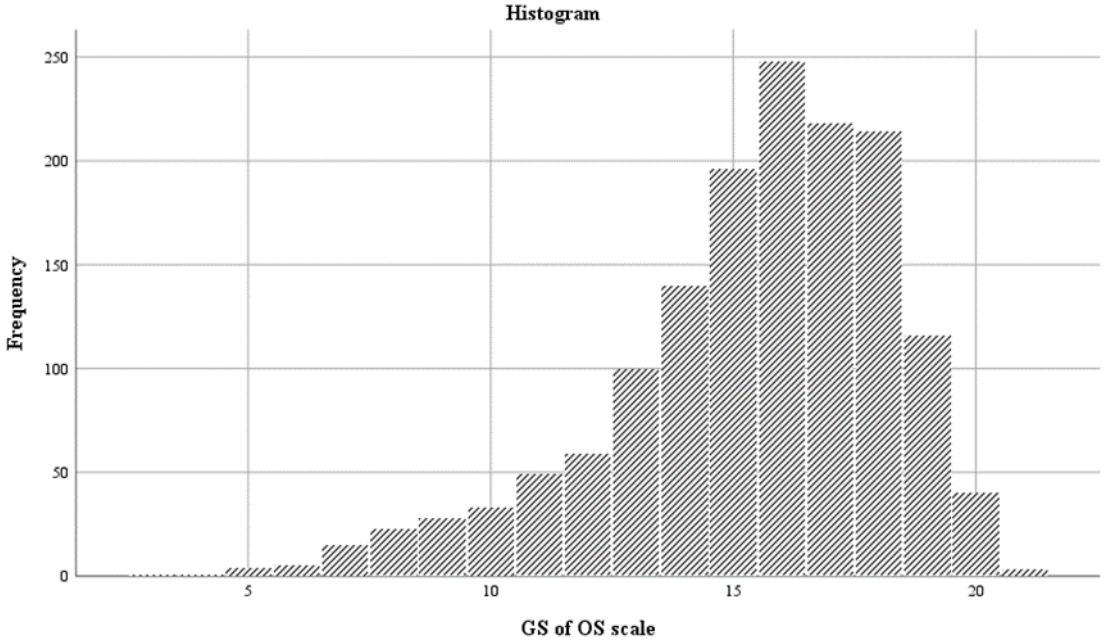

Chart 1. Distribution of gross scores of the offensive strategy scale in the pilot sample

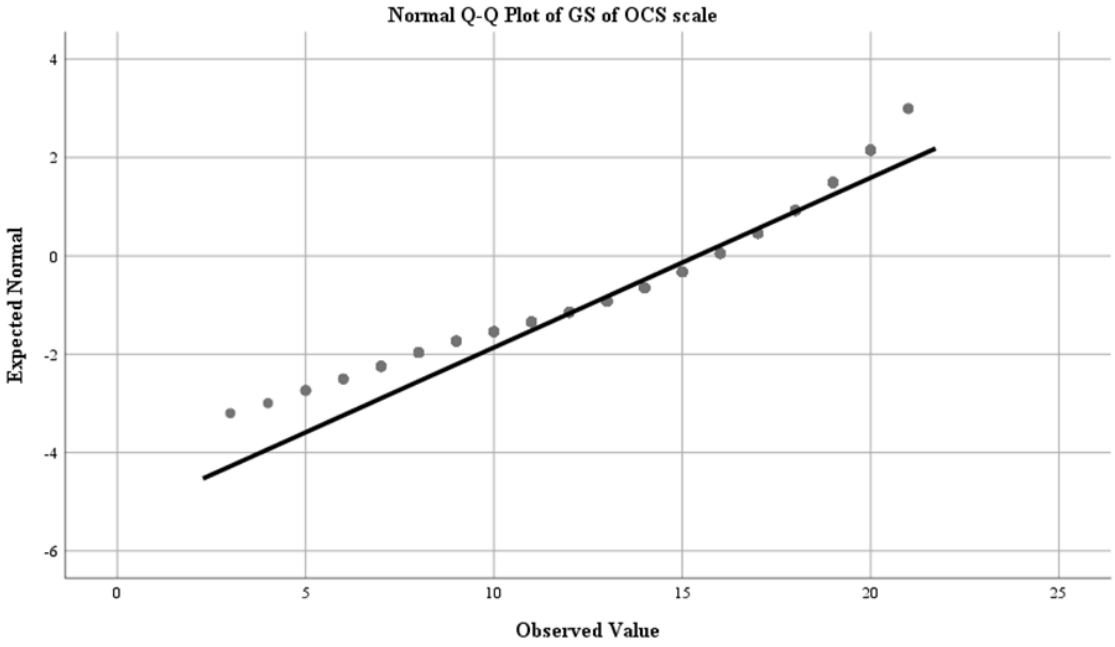

Chart 2. Q - Q plot of the gross scores of the offensive strategy scale in the pilot sample

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We deem the construct validity of the OS scale to be satisfying. The scale was constructed in line with the findings presented in the previous sections of the paper and using the concepts of subjective well-being, quality of life and active and successful aging (Bengtson 2009; Boudiny 2013; Bowling 2017; Büllow 2014; Hyde 2003; Kahana 2014; Vanhoutte 2012; Zanjari 2017).

The convergent validity of the scale was examined by the degree of fitness with two content-related scales. The first one was the WHO emotional wellbeing questionnaire (WHO-5), which is widely used in various fields (Topp 2015). In our dataset, some questions in the WHO-5 set of five questions were not completed in 60 cases, and these cases were excluded from the processing. Individual gross scores were found to range from 5 to 20 (mean 13.2, SD 2.9). Then the scale was correlated with the OS scale. We used Pearson's correlation coefficient (as the WHO-5 gross score indicates characteristics of the normal distribution) with the resulting value of 0.370, and Spearman's ρ with the value of 0.339, both highly statistically significant (< 0.01). The ordinal symmetric association measure γ showed a lower but statistically significant value of 0.284 (< 0.01).

The second scale was our own index of common activities, which was constructed from 16 leisure (not working) activities that were engaged by respondents in at least once a week, but often every day or almost every day. These include reading a newspaper, walking for at least 30 minutes, or going to a restaurant. The scale has a normal distribution and its correlation with the OS scale is 0.392 (r) and 0.409 (ρ), respectively, at the 0.01 significance level.

Both analyses show that the offensive coping strategy in our framework occurs concurrently with positive emotional well-being and with a broader range of activities.

Reliability of the OS scale was verified in two ways. To assess the internal consistency of the scale, we used the Cronbach's test which provided a value of α = 0.836. The item analysis yielded the results shown in Table 3, where, for clarity, are not reported the full questions but the relevant response values that count for the scale.

Item with the values selected for scoring	α	r	L/S
19 I am currently receiving at least 30 hours of education in courses or school, or to a lesser extent repeatedly.	0,847	0,245	L
33 Compared to last year, I have a lot or a little more energy and zest for life.	0,829	0,412	L
3901 I can independently engage in various activities outside my home.	0,827	0,459	L
3910 I devote myself to maintaining physical health, physical fitness, exercise.	0,826	0,488	S
4007 I agree with the view that if one has learned something useful in life, he/she should use it in the old age.	0,828	0,450	L
4008 I agree that one should see that he/she does not yet belong to the very old school.	0,831	0,365	S
4009 I agree with the view that a person who is almost always resting rather than doing something is aging faster.	0,832	0,329	L
4010 I agree with the view that what you haven't done in your life so far, you can at least try now, in retirement.	0,831	0,374	S
4011 I enjoy doing something for others.	0,829	0,404	L
4012 I want to fill each day with meaningful work.	0,824	0,549	S
461 I try to make sure that every day has a certain order.	0,822	0,576	L
463 To a large extent, I practice the principles of healthy alimentation.	0,820	0,595	L
464 I often pursue a variety of hobbies.	0,822	0,555	S
465 I volunteer extensively in my municipality or in a club.	0,827	0,466	L
466 I often seek opportunities for humor.	0,825	0,489	S
4701 I enjoy making plans for the future	0,826	0,489	L
4705 I look for new ways to overcome difficult situations.	0,832	0,340	S
4706 Whatever happens to me, I believe I can handle it.	0,832	0,325	S
4707 I believe that dealing with difficult situations has a positive effect on me.	0,832	0,403	L
4708 I actively look for ways to cope with the losses I experience in my life.	0,840	0,198	S
4710 I wish to stay in my job as long as possible.	0,833	0,325	S

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Table 3. The α values for the OS scale items. The L/S column indicates the distribution of items for the half-split test (L for odd, S for even).

The values are in the narrow range of 0.820 to 0.847, which supports an opinion of an item balance of the scale. The correlation coefficients for the situation where an item is excluded from the scale are reported in column r.

The half-split test was chosen as the next method, for which we used two ways of splitting the items. One divides the items into two groups according to their order in the questionnaire in the ratio of 11:10 items. The next one is based on the original numerical order of the items in the questionnaire (in the right column of Table 3). We identified 12 odd-numbered (L) and 9 even-numbered (S) items. To better balance the two groups, we moved one item randomly selected from the battery of 47 to be among the even ones. Among the 11 odd-numbered items, five are related to activities and six to attitudes, and among the remaining 10, five are related to activities and five to attitudes.

For both the first and the second distribution of items, we obtained values of the relevant statistics that can be considered as reasonably high (Table 4).

statistic	1st splitting	2nd splitting
correlation coefficient between the two parts	0,656	0,703
Spearman-Brown coefficient with correction for unequal length of the scale part	0,793	0,826
Guttman coefficient for split files	0,783	0,825

Table 4. Selected statistics of the split-half test.

Based on these findings, we can conclude that the data obtained for the OS scale are sufficiently consistent, valid and reliable to be used for further analysis.

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To use the scale

Since the main purpose of this paper is to present a design for a development of the scale, we will only give an example for its further use, as it might inspire a further work.

We have found useful to reduce the information about an individual's position on the scale of gross scores and condense the GSs into several mutually distinct groups. Theoretically, a quantile-based partitioning of the population could be used here, for example into three groups (clusters) based on terciles. Let´s recall that the partitioning of artificial variables is always a challenge for an arbitrary decision. For further analysis, we want to sharpen the partitioning to clearly show the differences between those who score very high on the scale and those who score very low. Indeed, a research question may be how and to what extent older people with high levels of the proactive coping strategy differ from those who, in contrast, reach low levels.

We transformed the gross score of the OS scale into a scaled tOS score by splitting the respondents into clusters in a 1:8:1 ratio, i.e. with equally sized first and third clusters (Table 5). Of course, we manage the new variable as an ordinal variable, not a continuous or ratio variable.

tOS	**GS range**	**count**	**%**
1st cluster (bottom)	3 – 11	159	10,6
2nd cluster (middle)	12 – 18	1175	78,7
3rd cluster (upper)	19 – 21	159	10,6
total	**3 – 21**	1493	100,0

Table 5. Distribution of respondents into clusters according to OS gross scores.

Now, for the analysis, we can select only the first cluster of the least active and the third cluster of the most active to see the differences in personal characteristics, attitudes, external factors and activities more sharply (Fig. 1).

In this methodologically oriented paper, we cannot go into the details about using of the cluster form of the OS scale. Let us just summarise that there are no statistically significant differences in including

women and men in the clusters - there are roughly equal numbers of men and women among the 10% who have a very active approach and a very inactive approach towards their own age and aging. When evaluated with Spearman's ρ and adjusted standardized residuals, high scores on the scale are significantly related to having a completed higher education (college and university), to previously execution of some kind of intellectual occupation (as opposed to manual, craft and service occupations) but also to living in a large city and to continuing employment. The aforementioned variables are, of course, mutually related in some extent. Conversely, the lower cluster of people with low number of proactive strategy symptoms includes people with primary or secondary education or living in small towns. In the pilot sample, when using the clusters, there are no differences in the use of the offensive strategy between the groups aged 65-74 and 75-84.

There are obvious relationships between the OS scale and other aggregate scales. Individuals who rank in the top cluster of the offensive strategy, score high on both the WHO-5 emotional well-being scale and in the well-being scale expressed as a summary attitude towards aging in the PGCM questionnaire.

The best predictor for extent of offensive, proactive strategy used by people when coping with the changes in old age and in the aging process appears to be education attainment (Goodman-Kruskal statistic γ=0.339 with significance < 0.01) and also current health status in the form of self-assessment (γ=0.513 after scale rotation) [4].

Discussion

The offensive and defensive (not discussed here) strategy scales were derived from two a priori defined strategies (Table 1), which are abstract constructs to which real personal strategies of older adults only more or less approximate. As mentioned, the usefulness and validity of any summary scale-type measurement tool depends on how precisely the phenomenon to be measured is defined, how completely the relevant properties of the phenomenon are captured, and how sensitive the tool is in distinguishing among real cases. Thus, in the case of synthetic scales of the summative type, the quality and usefulness of the scale depends on the choice of attributes, i.e. items for the scale, on the choice of measurement scale (two-step, multistep, etc.) and also on the reliability of measurement in the sense of minimising inter- and intrasubjective differences in responses.

The scale does not measure the “success in aging”. It measures the inclination of the elderly towards one of the strategies, namely how actively and optimistically they accept aging and take care of their

physical and mental strengths. Of course, these are prerequisites (not directly attributes) of the successful aging [5].

For the elderly, the conscious coping is an effort to overcome or compensate a coming physical and mental decline (problem-focused coping) or at least to cognitively and emotionally reassess one's own situation (emotion-focused coping). It is likely that the implementation of offensive, proactive OS has preventive effects by which aging processes are slowed in physical, mental and social dimensions (e.g., Pinto 2017; Kelly 2017), and that social, leisure, work and other activities directly influence well-being and perceived health in old age, as a review of results from 42 studies from 1995 to 2009 pointed to (Adams 2011).

In the literature, typologization of the elderly´s behavior towards their own aging is not a common topic. A similar, though more comprehensive, scale has been developed by a team of Iranian authors (Zanjari 2017; 2019) under the title "instrument to measure subjectively perceived successful aging", which – in our context – can be seen as both an essential component and a consequence of a coping strategy. The questionnaire was developed in a culturally different (Iranian, Muslim) environment but with a knowledge base from a predominantly Euro-American cultural sphere. A total of 54 items were placed into seven domains, with psychological well-being as the most important factor, consisting of positive characteristics and abilities, life satisfaction, and positive perceptions of aging (Zanjari 2019, 138). The scales do not divide older people into successful and unsuccessful groups because successful aging is a continuum on which subjects place thanks to their self-assessment. Yet the results showed that older adults with poor health and low socioeconomic status scored low on self-rated aging, and vice versa.

E. Kahana and her colleagues have developed a comprehensive preventive corrective proactive model of successful aging (Kahana 2014). She emphasizes the critical role of proactive behavioral adaptation in mitigating the adverse effects of stressors. The model is intended to offer a new perspective on behavior that can improve quality of life in old age. In fact, it is a description of the relationships between stressors, quality of life components (such as life satisfaction or perceived meaning of one's own life), external and internal factors (such as self-esteem or optimism), demographic and other contexts, and the proactive behavioral adaptations themselves (Kahana 2014, 20). In this paper, we take a similar approach (Fig. 1) but with an emphasis on the role of activities that the older person performs in and outside his/her home, both privately and publicly beneficial.

A team of Czech authors identified four strategies for adults using data from a survey about preparing for old age (Frič 2020, 23-25). The strategies were created by combining two dichotomies: the level of perceived risks of old age and the level of strategic activities. The risks are economic, health, and social, and the activities corresponding to the risks vary from none (A tolerating and B ignoring risks) to intensive (C insuring risks and D avoiding risks through a variety of activities). Although this was a behavioral study of the entire adult population (18+), the strategies identified by the research for old age (roughly 60 years and older) seem to show well the tendency to adopt offensive proactive (C and D) and defensive passive adaptive strategies (A and B).

As the closest to our interest a typology of aggregate responses to old age and aging was proposed by S. Reichard, F. Livson, and P. G. Petersen (Reichard 1962, 178-179). They distinguished five types. People of the constructive type accept the coming of old age, and are predominantly contented and positive towards themselves and other people. The 'rocking chair' devotees are dependent on others, passive and preferring to rest. The third (“armored”) are those who take a defensive stance; they were active at work and in their involvement outside work, but now they fear dependency and so try to persevere at work; they banish their fear of physical decline by staying active. The fourth group produces a hostile strategy based on an awareness of life failure; annoyance, envy and anger are prevalent in these people. The last strategy of the people getting older is self-hatred, with a lack of self-love and the belief that they have wasted their lives. According to the authors, the first three types signify good adaptation, the other mean poor adaptation (Reichard 1962, 178). Although the authors were concerned only with people preparing for or entering retirement and were concerned with how they react to leaving employment we can conclude that their first and third types correspond to offensive and the other three to defensive coping strategies of older adults.

Conclusions and Limits

Our introduction of the concept of personal coping strategies is an attempt to capture the behavior and experience of the elderly towards their own age and aging in its complexity and plasticity. It is closely related to the notions of quality of life and well-being but unlike them it emphasizes the behavioral component of life, i.e. particular actions, habits and activities, not only the experiential, emotional side and objectively existing material and immaterial circumstances that create together the essential environment for a specific way of life.

The OS scale is designed to measure the degree to which a senior achieves the "pure" offensive strategy for coping with aging and old age, using 21 emotional, cognitive, and behavioral symptoms that can be collected by self-assessment when using a questionnaire. It is based on a simple, dichotomous typology of strategies. In this article, we have described only a scale characterizing an offensive, proactive strategy (not a defensive, passive-adaptive strategy with 15 symptoms). Its introduction can be considered as a first version of a future instrument for identifying the strategies that are used by older adults to cope with their own aging and old age. In our opinion, the research has shown that it is possible to identify indicators of coping strategies and that we could get new insights into the lives of the elderly. The proposed selection of values (responses) that score for the scale also provides a strong basis for identifying a coping style of older people.

A future research would benefit from validating the offensive (as well as the defensive) strategy scale with additional sample of older adults, possibly testing external validity outside of the elderly population, and further exploring other relationships between the OS and diverse attitudes and behavior patterns of older adults. A future use of the refined scale would also benefit from comparison with other data sources, including specific samples (visitors to senior centres etc.), testing of the scale in other countries of the Euro-American cultural sphere, and, most importantly, a longitudinal study that could test the predictive validity of the scale.

In addition to further validation and refinement of the validity and reliability of the scale, it would be useful to address a measurement error which, however, depends on the probability sampling options of the respondents, on the influence of the socioeconomic situation of the elderly, on the perceived confidentiality of the questions and the desirability of the answers, and on a number of other factors.

Critical comments might be made mainly in three directions:

Not all possibilities of statistical analysis were used for the data analysis what impoverishes our findings. Although this is to be admitted, we were guided by the consideration that the use of more sophisticated parametric statistical procedures might bring an impression of a greater precision and accuracy than would be consistent with the reliability of the data and the 'exactness' of the responses. Researchers sometimes get the impression from the numerical coding of responses (strongly agree = 1, rather agree = 2, something in between = 3, etc.) that these codes are values of a continuous variable and that they can work with their arithmetic mean and variance and thus proceed, for example, to regression or factor analysis. We do not share this practice (arithmetic operations cannot be performed on the values of the nominal and ordinal variables), and because all items in the scale are

ordinal, we have used robust ordinal statistical techniques and deliberately worked with three bands (clusters) of OS symptom scores. In addition, we used the adjusted standardized residuals as indicators of the significance of deviations from the hypothesized independence of two variables.

A second objection may suggest that the strategy was constructed through the lens of middle-class lifestyles. Thanks to the questionnaire, we had data on 24 types of activities, including those that are quite common and those that take place exclusively in the home, and yet still it turned out that even here it is possible to identify to a large extent people with different approaches to their own ageing and old age in terms of defined strategies.

The third question is which items should form the content of the scale and with what weight. Nevertheless, this always remains a matter of the overall erudition of an author and his/her research intention. The notions of offensive (and defensive) strategies have been operationalized in line with the theoretical background and empirical findings presented in the first two sections of the paper and based on knowledge of similar measurement tools. Further conceptual deepening, modifications of indicators and validation of scales are warmly welcome as they will help to improve the understanding of the ways in which older adults cope with their age and continuing aging.

About the author

Oldřich Čepelka (*1948), a Czech sociologist, worked outside academic field until 2017. He has been involved in public opinion polls, sociological and economic studies, implementation of the community-led local development tool and in grant advisory for non-profit organizations, municipalities, small businesses and local action groups in rural areas (the community-led local development approach). He completed his doctoral studies at the Faculty of Humanities, Charles University in Prague, in 2022. Here he focused on issues of active ageing and activities of the elderly that have a public impact on life in municipalities, communities of interest and society.

Footnotes

[1] This view of the motivational component of behavior is close to the sociological concept of the internally driven and externally driven person described by D. Riesman (2007) as early as 1950, albeit in the historical context of the development of human societies and culture.

[2] The ideal type, as defined by Max Weber, emerges as an abstract model by the exaggeration of selected observed features of an object under study (Trubek 1972; Kim 2020). It is a fictitious construction, an unreal abstract model in which selected features of a real object are exaggerated in order to expose essential characteristics and tendencies. It does not attempt to identify real objects but serves as an abstract ideal against which the observed reality can be compared. In the ideal type, features and tendencies that are present in the real world, but for a number of reasons cannot be fulfilled to an absolute degree, are consistently figured out, developed in thought.

Nevertheless, we can empirically investigate to what extent reality approaches the ideal type as an abstract concept with significant theoretical valence. The ideal concept differs from the ordinary, generic concept that describes concrete reality. It is intended to lead to a better understanding of it. The advantage of ideal types is their clarity and definiteness, which makes it possible to formulate and elaborate theoretical hypotheses about the relationships between phenomena. The very comparison of ideal types with reality serves then as a source for the formulation of new hypotheses or typologies. The word "ideal" here does obviously not imply a moral value; it means only that it is a type formed in thoughts - that it is an idea.

[3] Due to the limited scope of this article, we will continue to focus only on the scale that characterizes the proactive, offensive strategy. Note only that we have chosen different items as symptoms of the defensive strategy. These included an agreement with statements such as "*What you didn't catch up with during your lifetime, you won't catch up with in your old age*"; *"I prefer to rest rather than always getting on with things"*; a negative response to the question "*I want to use my time and fill each day with some interesting work*"; or never pursuing *"varied physical and mental hobbies such as reading books, listening to music, meeting friends, working in my garden, moving around in nature".*

[4] Health status is with statistical significance associated with the use of offensive strategies in all the five-year age groups; health thus emerges as a general factor shaping elderly´s attitudes towards their own aging. Certainly, this is not a surprising finding, given that health limitations, caused by both illness and permanent disability, have a major impact on overall lifestyle.

[5] The main components of successful aging are low incidence of illness and disability, high cognitive and physical functional capacity, and active engagement in interpersonal relationships and in productive activities (e.g. Rowe 1997, 433-434). It has been argued that the concept of successful aging reinforces a negative image of 'the others' who do not age successfully and that it is therefore excluding older people with less education or health problems from an opportunity of the 'proper' or

'successful' aging. Yet clearly, not all the older people have all the internal and external resources needed for successful aging. Since no one wants to age 'unsuccessfully' it is natural that the design of successful aging acts as a model against which the elderly compare themselves (also due to the amplification effect of media and advertising).

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