Caught between two fronts: successful aging in the time of COVID-19

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Abstract

Purpose – *The COVID-19 pandemic poses a great challenge for older people both in terms of the severity of the disease and the negative consequences of social distancing. Assumptions about negative effects on the lives of the elderly, affecting dimensions of successful aging (such as the preservation of social relationships), have thus far been hypothetical and have lacked empirical evidence. The aim of this paper is to shed empirical light on the effects of COVID-19 on the everyday life of older people against the background of the concept of successful aging.*

Design/methodology/approach – *Data of a standardized, representative telephone survey with residents of Lower Austria, a county of Austria, were used for this secondary analysis. The sample included 521 persons of 60 years of age and older. For this paper, contingency analyses (χ^2 coefficients, z-tests using Bonferroni correction) and unidimensional correlational analyses were calculated.*

Findings – *The empirical data show that successful aging along the three dimensions of successful aging is a challenge in the time of the COVID-19 pandemic – leaving the elderly caught between two fronts.*

Originality/value – *The present work focusses on a unique moment in time, describing the changes to the lives of Austrian elderly because of the social distancing measures imposed to protect against the spread of COVID-19. These changes are discussed in the theoretical framework of successful aging.*

Keywords *Quality of life, Ageing well, Gerontology, Older people, COVID-19, Successful aging*

Paper type *Research paper*

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Introduction

From a gerontological standpoint, the COVID-19 pandemic poses a great challenge for older people. They are considered a risk group on account of not a [high mortality rate] only high mortality rate because of viral infection (Shahid *et al.*, 2020) but due to being [negatively affected by...] also negatively affected by the implemented social measures (commonly referred to as social distancing), intended to protect vulnerable members of society. The negative consequences of such measures include the reduction of physical activity (Roschel *et al.*, 2020) and, therefore, a decrease in both physical and cognitive functionalities (Pelicioni and Lord, 2020), as well as a suspected increase in social isolation assumed to accompany social distancing (Brooke and Jackson, 2020).

Many countries introduced similar measures to combat the ongoing pandemic starting at differing points in time. One of the first countries to respond to the viral outbreak by implementing protective measures was Austria, the country on which this article is based, which reported their first COVID-19 cases on 25 February in the town of Ischgl, Tyrol, receiving a lot of international attention owing to the high profile of this skiing village. Almost immediately after the first infections were made public, the Austrian Government presented the first decrees, which regulated the possibility to close business because of infections (BMSGPK, 2020a), the duty of disclosure (BMSGPK, 2020b) and restrictions and medical checks in international travel (i.e. BMSGPK, 2020c, 2020d) at the end of February. The

The authors would like to thank Prof Dr Kolland for initiating the survey and giving us the opportunity to analyse the data.

national shutdown was enforced by the government on 10 March, starting with the cancellation of all large-scale events and the closure of universities. This was then followed by closures of all schools and non-essential stores. On 15 March, the government passed a legislative act (National Council Austria, 2020) in the fight against the crisis accompanied by a stay-at-home order (BMSGPK, 2020e) for all the citizens. The measures reached their peak on 6 April, with the introduction of compulsory facemasks in all public spaces. Aside from the reopening of small shops around 15 April, these measures were upheld until the end of the month. Although the ambiguously formulated stay-at-home rules expired at the end of April, citizens were asked to maintain a one-meter distance in public spaces, to continue wearing masks and to only meet in groups of up to ten people. With the reopening of restaurants (under strict hygiene specifications) on 15 May, a gradual return to normality was begun, which still has not been reached to this date (end of June).

From this description and the ongoing effect of the internationally persisting pandemic, the scientific community suspects that many (elderly) peoples' day-to-day lives have undergone major changes in these past months, especially during the height of social distancing measures. Assumptions about negative effects on the lives of the elderly, affecting dimensions of successful aging (such as the preservation of social relationships), have thus far been hypothetical and have lacked empirical verification. With this article, empirical evidence of the effects of COVID-19 on elderly people's everyday life is supplied and interpreted using the theoretical concept of successful a (in tables abbreviated as SA). Furthermore, an analysis of the degree and the direction of the effects of social distancing measures on the three dimensions of active aging is calculated and discussed.

This work is based on the theoretical gerontological concept of "successful aging" as defined by Rowe and Kahn (1997) which states that successful aging is marked by a low probability of disease and (concomitant) disability, high physical and cognitive function and engagement with life. These three components are interrelated and can be translated into three fields of action: proactive avoidance (of disease and disability); proactive preservation (physical and cognitive performance); and proactive sustained engagement (with social relationships and productive activities). Overall, two levels of successful aging emerge as follows:

1. Firstly, the *current condition* as a result of exogenous and endogenous factors at a certain point in time which includes inter alia the person's present health status.
2. Secondly, the *active component* which is intertwined with the current condition and includes all behaviours and actions necessary to reach (continued) successful aging.

Therefore, successful aging cannot be reduced to *current condition or* health status alone, but includes all behaviour and action in line with for example primary, secondary and tertiary prevention of illness (Martin *et al*., 2015). In that sense, successful aging should be understood as acting in a way that prevents or minimises disease or disability, strengthens and keeps the individual productive and active, all on the foreground of the individuals current health and ability.

Social distancing measures can be viewed as ambivalent according to this concept: On the one hand, they provide a protection against the spread of disease and therefore are in line with part of the active aging concept (proactive avoidance). However, on the other hand, they may have indirect negative consequences on the other two dimensions of active aging (proactive preservation and engagement). Furthermore, successful aging emphasises an active lifestyle, not only from a purely individualistic perspective, but rather from a perspective supported by social conditions. Consequently, proactive avoidance of disease and disability is only possible, once societal conditions and possibilities for an active lifestyle are in place. In this context the question arises how the COVID-19 pandemic and the accompanying societal framework shapes the everyday of the elderly individual and

whether it changes the active component of the successful aging concept and therefore the active influence of the individual on his/her aging process.

Methods

Data of a standardized, representative telephone survey with residents of Lower Austria, a county of Austria, were used for this secondary analysis. The survey was conducted from 30 April to 8 May, when substantial social distancing measures were in place in Austria. The survey was constructed to ascertain the current situation of persons of 60 years of age and older, from a gerontological perspective. Among other questions, individuals were asked about their adherence to the hygiene measures implemented to reduce the risk of infection, changes to their day-to-day lives and the perceived role of elderly citizens in the political and societal response to the pandemic. Additionally, socio-psychological indicators (loneliness, social support) were surveyed. Sampling was done based on municipality size using stratified random sampling with age screening.

Analysis.

The sample included 521 persons aged 60 years and older. All analyses were done using IBM SPSS version 26. For this article, contingency analyses (χ^2 coefficients, *z*-tests using Bonferroni correction) and unidimensional correlational analyses were calculated, because of the moderate sample size and the lack of metric data.

Operationalisation.

Using the theoretical framework put forth in the introduction of this article, two parts of successful aging were operationalised: the current condition of the individual during this time and the behaviour and actions towards maintaining/achieving successful aging (activity component) in the times of social distancing.

The current condition of successful aging was operationalised by using the three dimensions, as formulated by Rowe and Kahn (1997). To compute an index, using equal weights of all dimensions, all construct indicators were normed on a value range of 1–3 each (Table 1). *Avoiding disease and disability* was indicated by the number of chronic diseases (CDs) reported by the individual, whereby differentiations were made between no CD, 1 CD or >1 CDs (multimorbidity). To approximate *high cognitive and physical function* the reported status of health (SH), a robust indicator for physical and functional health (Pinquart, 2001) and the self-assessed memory function (MF), as an important part of cognition, which has been shown to correlate with other basic cognitive functions (Kryscio *et al.*, 2014; Luo and Craik, 2008) were used. In their original work Rowe and Kahn (1997) divide *engagement with life* into engagement in social relationships and engagement in (productive) activity (Ng *et al.*, 2011). For index construction only social relationship measures were used as the survey questions on activity were asked in reference to the situation during social distancing measures and were included into the operationalisation of the active component of successful aging. Social support (SS) was measured with a four-item battery (two items instrumental support, two items emotional support) which resulted in a categorisation of individuals into having high, rather high, rather low or low social support. Because of small case numbers (n = 28), the two lower categories were combined (low to no social support was rare).

These indicators were added resulting in a total score ranging from 4 to 12, with higher scores corresponding to higher deficits. Three groups were classed according to score points, there in after referred to as distances to successful aging: 1st distance (4–6), 2nd distance (7–9) and 3rd distance (10–12). Distances denote the difference between the

Table 1 Operationalisation of the stable component of active aging (current condition)

Dimension	*Indicator*	*Variable values*
Avoiding disease and disability	Number of chronic diseases	(1) 0 – (2) 1 – (3) >1
Physical function	Subjective health status	(1) positive – (2) moderate (3) negative assessment
Cognitive function	Subjective memory function	(1) positive – (2) moderate (3) negative assessment
Engagement with life	Social support	(1) high – (2) rather high (3) rather low or low assessment
Index: current condition of successful aging	Total score	Range 4 – 12 divided into in *1st distance* (range 4–6), *2nd distance* (range 7–9), *3rd distance* (range 10–12)

successful aging (SA) ideal and the current condition of the individual, with a higher distance indicating a less favourable current condition.

For the operationalisation of the activity component of successful aging a set of survey items were chosen, which measured behaviour and action aimed at achieving successful aging. Included were items on the following topics: adherence to hygiene measures (avoidance of infectious disease), exercise both in and out of the home (preservation of physical function), television and newspaper consumption (preservation of cognitive function), shopping and volunteering (productive activity), social contact with children and friends (preservation of social relationships). In addition to perceived changes in their current activity level, participants were asked about their usual activity level (whether certain activities are carried out under normal circumstances). Descriptions of the response categories of the active component of successful aging can be found in Table 4, which deliberately includes the frequency distribution of each response category.

Findings and Discussion

First, we present findings concerning the stable component of successful aging (current condition). As discussed, an index score was calculated which can be interpreted as the result of a successful aging process. From the results depicted in Table 2, it is evident that 60% (n = 300) of all surveyed elderly can be classed in the nearest distance category (1st distance), with the majority having no chronic diseases, self-assessed good physical and cognitive function and a high measure of social capital in the form of social support (Table 3). A total of 33% (n = 125) of the sample were classed into the 2nd distance and 7% (n = 34) into the 3rd distance category, which indicate that their current status is far off from the ideal of successful aging. This *ad-hoc* classification was judged to be statistically viable correlating significantly with all four dimensions: high positive correlation with number of chronic diseases (r_s = 0.651, p = 0.000), high negative correlations with physical (r_s = −0.930. p = 0.000) and cognitive (r_s = −0.922, p = 0.000) functionalities, as well as with social capital (r_s = −0.436; p = 0.000) (see distribution and results of z- test in Table 3).

Table 2 illustrates differences of group distributions according to age (60–79 year olds versus 80+ year olds) and care allowance (CA) in levels 0 to 2+. In short, it can be shown

Table 2 Distribution of the sample across the distance groups

	SA-distance	*Overall*	*60–79 years*	*80+ years*	*Female in %*	*Male*	*CA 0*	*CA 1*	*CA 2+*
Successful aging	1	60	68	32	60	61	70	0	8
	2	33	27	56	34	31	27	76	58
	3	7	6	12	6	8	3	24	34

Table 3 Correlation of distance groups with indicators of stable component of successful aging (current condition)

CD	SA-distance (in %)				SH	SA-distance (in %)			
	1	2	3	Overall		1	2	3	Overall
0	62_a	3_b	0_b	38	Positive	98_a	6_b	0_b	61
1	29_a	54_b	0_c	35	Moderate	2_a	81_b	15_c	29
2+	10_a	43_b	100_c	27	Negative	0_a	14_b	85_c	10
MF	**SA-distance (in %)**				**SS**	**SA-distance (in %)**			
	1	2	3	Overall		1	2	3	Overall
Positive	98_a	6_b	0_b	61	High	79_a	51_b	6_c	65
Moderate	2_a	94_b	88_b	38	Rather high	20_a	42_b	53_b	29
Negative	0_a	1_a	12_b	1	Rather low/low	1_a	7_b	41_c	6

that individuals in the second and third distance groups have a higher probability to be persons at the fourth age (80+ years old) or to have a higher CA level.

We examined the impact of COVID-19 and the associated measures on the behaviour of the elderly as classed into the three groups of active aging (see Table 4 for main findings). Evidently, the majority of surveyed individuals report trying to keep the recommended one-meter distance and washing their hands regularly, with minimal differences between distance groups. Most participants report reducing social contacts (r_s = 0.194, p = 0.000) and staying at home (r_s = 0.304, p = 0.000), even though differences were apparent between distance groups: more individuals classed into the 2nd or 3rd distance group adhered to these hygiene rules, than those classed into the 1st distance group. Generally, the adherence to COVID-19 guidelines among the elderly is high and may have therefore strongly affected their day-to-day life. This is true for the majority of the sample, even though adherence is slightly lower among individuals closer to the ideal of successful aging (distance group 1).

These aforementioned effects of the pandemic influence the proactive preservation of cognitive and physical function and productive activity. For physical activity three separate trends become apparent: a reduction of physical activity across all distance groups, with a higher relative reduction of activity outside of the home (36% exercise less than usual, 17% do not exercise at all at the time of the survey); a larger proportion of generally inactive people in higher distance groups; and more currently inactive people in higher distance groups (*at home: Cramer-V = 0,228,* p *= 0,000; out-of-home: Cramer-V = 0,239,* p *= 0,000;*). A total of 84% of all people in the third distance group report to never, or not currently (during social distancing measures) exercise at home; 56% do not exercise outside of their home. Although reports of a reduction in physical activity are more seldom in individuals classed into the first distance group, we also observe a decrease in this group as well, e.g. 10% report having ceased exercising outside, 38% report a reduction of exercise.

Activity used to preserve cognitive functions is found via a considerable increase of television consumption (*p = 0,074;* independent of distance group*)* as well as a slight increase in newspaper consumption (*Cramer-V = 0.199,* p *= 0.000)*. In general, the increase in media consumption probably was because of the need for information. Even though recent studies report excessive TV consumption as relating to a decrease in cognitive functionality (Cansino *et al.*, 2020; Fancourt and Steptoe, 2019), we argue that under the special circumstances when other cognitively stimulating activities are somewhat restricted (social contact, exercise), watching television can be seen as cognitively active behaviour. Nevertheless, the findings on increased television consumption in this survey, must be interpreted cautiously considering the aforementioned scientific research: Increased consumption should remain an exception and should not be normalised among the elderly.

Table 4 Combining the modifiable and stable component of successful aging(SA)

			SA-Distance (in%)						SA-Distance (in%)			
			1	*2*	*3*	*Overall*		*1*	*2*	*3*	*overall*
Avoid disease	Staying at home	very much adheres	45_a	70_b	85_b	57	Reducing social contacts	57_a	79_b	$69_{a,b}$	65
		rather adheres	42_a	29_b	15_b	34		36_a	19_b	$25_{a,b}$	30
		rather does not adhere	13_a	1_b	$0_{a,b}$	9		7_a	2_a	6_a	5
	Keeping the recommended distance	very much adheres	83_a	91_b	97_b	87	More frequent hand washing	84_a	85_a	90_a	85
		rather adheres	16_a	9_a	3_a	13		16_a	14_a	10_a	15
		rather does not adhere	1_a	0_a	0_a	1		0_a	1_a	0_a	0
Physical Function	Exercise in the home	More often	22_a	$15_{a,b}$	1_b	18	Exercise outside of the home	10_a	7_a	2_a	9
		No change	35_a	$27_{a,b}$	9_b	30		39_a	29_a	7_b	34
		Less often	6_a	11_a	5_a	8		38_a	35_a	37_a	36
		Current not done	8_a	11_a	40_b	11		10_a	24_b	34_b	17
		Never done	29_a	36_a	44_a	33		3_a	5_a	20_b	6
Cognitive Function	Watching television	More often	51_a	56_a	50_a	52	Reading the newspaper	28_a	22_a	16_a	24
		No change	47_a	44_a	40_a	46		67_a	64_a	69_a	67
		Less often	2_a	1_a	6_a	2		2_a	8_b	$2_{a,b}$	4
		Currently not done	0_a	0_a	4_a	1		1_a	1_a	11_b	2
		Never done	0	0	0	0		3_a	5_a	1_a	3
Productive Activity	Self-reliant shopping (essential products)	More often	1_a	0_a	0_a	1	Volunteering/ voluntary work	2	0	0	1
		No change	23_a	13_b	6_b	19		8_a	6_a	8_a	7
		Less often	61_a	43_b	33_b	52		9_a	5_a	0_a	7
		Currently not done	13_a	42_b	54_b	25		24_a	25_a	31_a	24
		Never done	2_a	3_a	6_a	3		57_a	64_a	61_a	60
Social Relationships	Contact with friends and acquaintances	Daily	27_a	19_a	21_a	24	Contact with children/ grandchildren	53_a	44_a	54_a	49
		Multiple times/ week	47_a	$42_{a,b}$	23_b	43		33_a	28_a	24_a	32
		Multiple times/ month	25_a	$33_{a,b}$	46_b	29		10_a	17_a	10_a	12
		Less than multiple times a month/ never	2_a	6_b	10_b	4		5_a	12_b	11_b	7

The most striking decrease is seen in productive activity. Self-reliant shopping and volunteering activities are found to be notably reduced during social distancing measures. While the majority of participants reports going shopping under normal circumstances, 50% of the sample report a reduction in shopping activities and 25% had completely suspended shopping at the time of the survey. Differences for shopping (*Cramer-V = 0.262,p = 0.000)* are noticeable between distance groups, but not for volunteering. In the group of individuals normally involved in volunteering (40%), the majority mention a suspension or at least a reduction of these activities. Only 8% of the sample were just as, or even increasingly involved in voluntary activities/voluntary work.

A high degree of social contact, mostly via the telephone is reported in survey. Slight differences between distance groups are found both in the contact frequency with friends/acquaintances (r_s = 0.165, p = 0.000) and children/grandchildren (r_s = 0.112, p = 0.014). Contact with children/grandchildren was especially high, with 81% of all individuals communicating at least multiple times a week. It seems that the COVID-19 crisis may have led to an increase in social contact; regarding the frequency of contact, the pandemic may have brought families closer together.

Regarding successful aging in the time of COVID-19 a conflicting image emerges as elderly people seem to be caught between two fronts: adhering to hygiene measures can reduce the risk of infection, thereby facilitating successful aging. However, there are negative consequences for the elderly (with the exception of increased reading of the newspaper and more frequent social contact via the telephone). Even though they were never explicitly prohibited in Austria, productive activity, which often includes an interactive component and is mostly related to activity outside of the home, as well as physical activity (exercise) have been drastically reduced during social distancing measures. This confirms the concerns previously expressed within the scientific community, concerning changes in activity levels among the elderly (Roschel *et al.*, 2020). It is further notable, that individuals who are far from the ideal proposed by the successful aging concept have been shown to be more vulnerable to negative changes in behaviour because of the pandemic. Nonetheless, even individuals who report a current condition that is seemingly close to the ideal of successful aging may be at risk when active aging is permanently restricted.

The empirical data discussed in this article clearly show that proactive, successful and active aging along the three dimensions is a challenge in the times of the COVID-19 pandemic. Furthermore, this work demonstrates that at least in particular constellations, the dimensions based on the preventive and corrective proactivity model by Rowe and Kahn (1997) can impede or even exclude one another. Adherence to social distancing measures, a seemingly beneficial behaviour for one component of successful aging (proactive avoidance of disease), can also be seen as an obstructive behaviour in regards to the other two components of the same concept, as it entails reduction in productive activities and physical activity. This reduction in turn, impedes the preservation of function and therefore, conversely, increases the risk of disease.

Conclusion

Taking the consistently high numbers on infection and the high probability of multiple pandemic waves into account, social self-isolation of the elderly cannot and should not be seen as a solution in dealing with COVID-19. The results of this study emphasise the need to develop concepts for the elderly population that provide a societal framework to enable successful aging, even in the time of the pandemic. Otherwise, the elderly will continue to be stuck between two fronts: being forced to choose between a threat to their health and withdrawal from society.

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