

Impact of the COVID-19 Pandemic on Self-Perception of Aging Among Older Adults

Gerontology & Geriatric Medicine
Volume 7: 1–7
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DOI: 10.1177/2333721421999320
journals.sagepub.com/home/ggm



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Abstract

The COVID-19 pandemic has created a pattern of physical distancing worldwide, particularly for adults aged 65+. Such distancing can evoke subjective feelings of negative self-perception of aging (SPA) among older adults, but how this pandemic has influenced such SPA is not yet known. This study, therefore, explored SPA at different time phases of the COVID-19 pandemic to explain the pandemic's impact on SPA among older adults. The analysis employed a sample of 1,990 community-dwelling older adults aged 65 to 95 (mean age = 72.74 years; 43% female) in Switzerland. Data collection from different older adults within one study occurred both before and after Switzerland's first confirmed COVID-19 case. The descriptive analysis revealed that negative SPA increased, and positive SPA decreased, after the Swiss government recommended physical distancing. After the Federal Council decided to ease these measures, negative SPA slightly decreased and positive SPA increased. According to the multivariate analysis, individuals interviewed after the lockdown were more likely to report greater levels of negative SPA and lower levels of positive SPA. Age, income, and living alone also correlated with SPA. The results suggest that the pandemic has affected older adults' subjective views of their own aging, and these findings help illustrate the pandemic's outcomes.

Keywords

subjective age, SARS-CoV-2, isolation, COVID-19, Switzerland

Manuscript received: January 25, 2021; **final revision received:** January 25, 2021; **accepted:** February 9, 2021.

The current coronavirus (COVID-19) pandemic has become a threatening element of our lives. People around the world read the latest figures about those suffering from COVID-19 and publicly discuss what measures will best prevent an uncontrollable increase in cases. Since the beginning of the pandemic, a wide range of national and international measures have indicated that people aged 65+ constitute a particularly vulnerable group (Shahid et al., 2020). For example, the Federal Office of Public Health (FOPH, 2020a) in Switzerland has advised older people to be particularly careful, avoiding direct contact with others, crowds, and social gatherings away from home, even beyond the formal lockdown. During this pandemic, older adults have had to manage everyday tasks while social distancing and have perhaps even become newly dependent on help from others, such as neighbors or friends. While this situation applies to all people worldwide, older adults find themselves in an at-risk group, a designation that may prompt feelings of being in need—being old.

Society's blanket use of biological-calendar age to determine risk level for COVID-19 does not reflect the

heterogeneity among older adults; instead, it conveys a picture of a homogeneous group of fragile people—a picture that has long been abandoned by gerontology (Ayalon et al., 2020). Defining people only by their biological-calendar age can lead, not only to societal age discrimination, but also to individual negative self-perception of aging (SPA) among older adults (Losada-Baltar et al., 2020). Negative views about aging can create perceptions of older adults as fragile people who lack resources; positive views about aging could consider older adults as persons who can gain competencies and capabilities with age (Hausknecht et al., 2020).

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Previous research has shown that SPA can be an element for coping with the pandemic, showing that negative SPA is associated with loneliness and psychological distress during the COVID-19 outbreak (Losada-Baltar et al., 2020). However less is known about the COVID-19 pandemic's influence on positive and negative SPA in the older population. This study, therefore, investigated negative and positive SPA before and during COVID19 in a different set of older adults aged 65+ in Switzerland.

Theoretical Assumptions

The experience of becoming older are inherent components of the aged self (Ryff, 1991). Older individuals' internalized age stereotypes contribute to the formation of their SPA (Hummert, 2011). The presented study defined SPA as "a personal evaluation of one's own aging" (Moser et al., 2011, p. 675). Positive SPA refers to the view that aging is a time of continuous personal development; negative SPA refers to the view that aging is accompanied by health and social declines (Steuerink et al., 2001; Westerhof & Wurm, 2015; Wurm et al., 2017). Negative SPA reflects the possible losses in old age (Heckhausen et al., 1989), for example the physical or psychological changes (e.g., having chronic disabilities, having cognitive declines), social losses (e.g., death of a spouse or close friends), or behavioral tendencies (e.g., becoming dependent on others). In comparison, positive SPA reflects the potential gains and growth in old age (Heckhausen et al., 1989), for example, increase in wisdom, freedom, or skills.

Previous research has shown that the way in which individuals view their own aging affects their functional health levels (Levy et al., 2002). Having positive SPA is positively related with perceived control of life (Luo et al., 2020). COVID-19 related studies showed for example, that positive SPA can help people become more resilient during the current pandemic (Losada-Baltar et al., 2020).

COVID-19 has confronted many older adults with an increased risk of social isolation and with the stress of finding themselves in an "at-risk group." These stressful reminders of "being old" may produce negative SPA. The first studies point to the negative consequences of age discriminatory and stereotype-based crisis communication for the well-being of older adults (Kornadt et al., 2020). The media releases coming from FOPH (2020a) emphasizing that people aged 65 and over were particularly at risk for COVID-19 and the subsequent media reports could produce stereotypical views of older adults in society (Ayalon et al., 2020). The stereotypes that "older adults are frail and at risk" could produce negative self-perceptions among older adults. These external attributions may influence self-perceptions of SPA as, for example, it has been shown that negative age stereotypes and socially shared beliefs about the process of aging and about older people as a group affect individuals' SPA (Brothers et al., 2020).

Research Aim and Hypothesis

This research investigated the association between SPA at different time phases of the pandemic to explain COVID-19's impact on SPA among adults aged 65 and older living in Switzerland. The author hypothesized that individuals interviewed following the release of the first governmental recommendations that people maintain physical distance (after March 6th 2020) would report greater negative SPA and lower positive SPA because older adults were informed by the media and the government that they were now members of a high-risk group due only to their age.

Research Design and Methods

Participants

This study was based on data from a representative survey (Swiss Survey 65+) of 1,990 adults aged 65+ living in Switzerland. The survey initially focused on older adults' resources for maintaining autonomy in their own households; therefore, it was not constructed as a pandemic-related survey. Nevertheless, data collection occurred both before and after the first confirmed COVID-19 case in Switzerland (February 25, 2020), the first confirmed COVID-19-related death in Switzerland (March 5, 2020), and the Swiss Federal Council's decision (March 16, 2020) to introduce "extraordinary situation" measures for public protection.

From January to May 2020, 1,900 people aged 65+ were interviewed using a computer-assisted telephone interview (CATI) approach supplemented by paper-and-pencil surveys. Of the sample, the mean age was 72.74 years (*SD*: 5.18; age range: 65–95), and 42.8% were female. Verbal informed consent was obtained. Participation in the study was voluntary. Participants were informed about the purpose and the procedures of the study, the benefits of the research to society and to the participant, and the length of time it would take to fill in the questionnaire. All data were treated confidentially; only the research team had access to the data. Participants' names and addresses were not matched with the questionnaires or the results, so respondents remained anonymous throughout and after finishing the study.

Based on media releases from the Swiss FOPH regarding the government's COVID-19 response, the sample of 1,990 different older individuals was divided into four subgroups (different participants, no repeated measurement) according to interview date.

- Phase 1 (Jan 27–Mar 6): Start of survey to Federal Council's "call for special protection of older adults" (FOPH, 2020a), (*n* = 391).
- Phase 2 (Mar 7–Mar 16): Up to Federal Council declaring an "extraordinary situation" (FOPH, 2020b), (*n* = 582).

Table 1. Descriptive Characteristics of the Sample and Subgroups.

Parameter	Scale	Study sample	Subgroup 1	Subgroup 2	Subgroup 3	Subgroup 4
		(N = 1,990)	(Jan 27–Mar 6) (n = 391)	(Mar 7–Mar 16) (n = 582)	(Mar 17–Apr 8) (n = 757)	(Apr 9–May 5) (n = 260)
		% or Mean	% or Mean	% or Mean	% or Mean	% or Mean
Gender	Female	42.8	56.0	33.5	37.1	60.4
	Male	57.2	44.0	66.5	62.9	39.6
Age	Mean ^a	72.74	74.51	72.10	72.24	72.95
Living alone	Yes	26.5	30.7	23.8	27.5	23.3
	No	73.5	69.3	76.2	72.5	76.7
Education	Mean ^b	2.94	3.18	2.93	2.77	3.04
Income	Mean ^c	5.33	5.11	5.56	5.36	5.14
Children	Yes	85.6	88.0	85.6	85.1	83.8
	No	14.4	12.0	14.4	14.9	16.2
Living area	Non-Rural	76.7	69.3	78.4	80.2	74.2
	Rural	23.3	30.7	21.6	19.8	25.8
Positive SPA	Mean ^d	3.74	3.86	3.66	3.70	3.87
Negative SPA	Mean ^e	2.15	2.13	2.19	2.16	2.06

^aAge range: 65 to 95.

^bEducation scale (1 = preprimary education, 5 = second state of tertiary education).

^cIncome scale (1 = up to 1,200 CHF [Swiss francs], 9 = over 15,000 CHF).

^dPositive SPA scale (1 = low, 5 = high).

^eNegative SPA scale (1 = low, 5 = high).

- Phase 3 (Mar 17–Apr 8): Up to Federal Council deciding to gradually ease the shutdown (FOPH, 2020c), (n = 757).
- Phase 4 (Apr 9–May 5): Up to the end of data collection, (n = 260).

Table 1 describes the sample and subgroups.

Measures

The concept of personal aging experience was measured using a set of statements referring to both positive and negative SPA in such different life domains as health, activities, personality, and social interactions (Kohli & Dittmann-Kohli, 1996; Steverink et al., 2001). All statements began with the phrase: “*Aging means to me. . .*” Participants answered the items on a five-point scale (1 = *does not apply at all*, 5 = *fully applies*). Positive SPA, viewing aging as an opportunity to grow personally, was assessed via three-items: “. . . *that I remain able to put many ideas into action*,” “. . . *that I retain the ability to learn new things*,” and “. . . *that I know exactly what I want*.” The three items loaded on one factor, with factor loadings from .630 to .795. Cronbach’s alpha for the scale was .594. The mean (M : 3.74, SD : .807) of all items was calculated, with higher scores reflecting greater positive SPA. Negative SPA, viewing aging as a situation of increasing physical and social losses, was assessed via three-items: “. . . *that I am less respected by others*,” “. . . *that my health declines*,” and “. . . *that I feel lonely more often*.” The three items loaded on one factor, with factor loadings from .677 to .722. Cronbach’s

alpha for the scale was .488. The mean (M : 2.15, SD : .814) of all items was calculated, with higher scores reflecting greater negative SPA.

Time-related subgroups were selected via FOPH media releases, as described above. Covariates, evaluated as important SPA predictors in previous research (Steverink et al., 2001; Westerhof & Wurm, 2015), included chronological age in years, sex (0 = male, 1 = female), educational level (1 = preprimary education, 5 = second state of tertiary education), monthly household income (1 = up to 1,200 CHF [Swiss francs], 9 = over 15,000 CHF), living alone (0 = no, 1 = yes), having children (0 = no, 1 = yes), and living in a rural area (0 = no, 1 = yes).

Analytical Strategy

Single regression models were calculated to determine the binary effects of all independent variables on positive and negative SPA. Additionally, a multiple hierarchical linear regression model was employed to analyze the predictors of positive and negative SPA. Missing data were excluded. All analyses were conducted using SPSS 26 software.

Results

Table 1 shows the descriptive statistics for the sample and the four subgroups. Figure 1 shows the positive and negative SPA scale means for each time-related sub-group. Negative SPA increased from the first to second subgroups and decreased from the third to

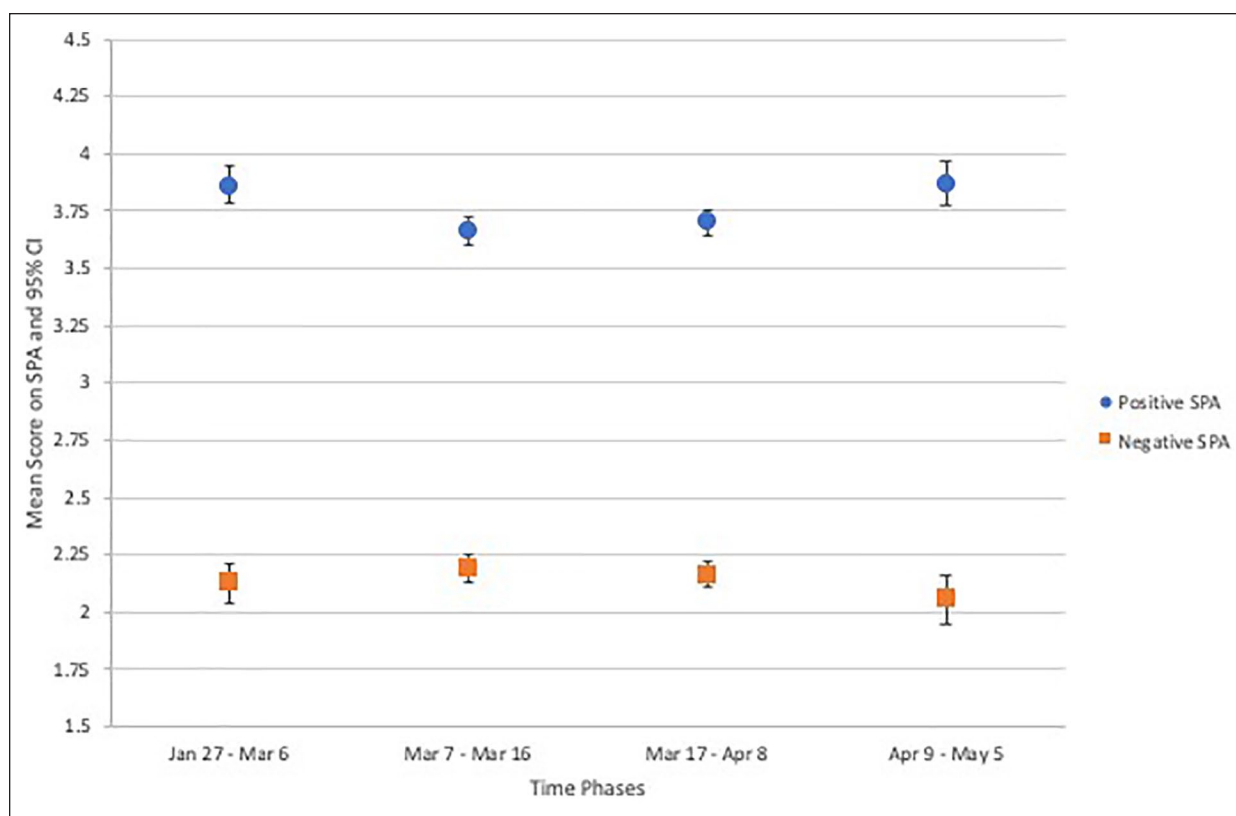


Figure 1. Differences in self-perception of aging (SPA) between the four time groups.

fourth subgroups. Positive SPA decreased from the first to second subgroups and increased from the third to fourth subgroups.

Table 2 shows the bivariate relationships between the four subgroups and the covariates with the independent variables “positive SPA” and “negative SPA.” In the single gross models, positive SPA was statistically significantly associated with the differences between the first subgroup (as reference) and the second and third subgroups, revealing that the decrease in positive SPA was significant for comparing the first subgroup to the second and third subgroups. All covariates—except gender, living alone, having children, and living in a rural area—were statistically significantly associated with positive SPA. In the single gross models for negative SPA, negative SPA was not statistically significantly associated with the differences between the first subgroup (as reference) and the other subgroups. All covariates—except gender, education, and living in a rural area—were statistically significantly associated with positive SPA.

Table 2 also shows the linear regression analyses for the multivariate predictors of positive and negative SPA. In model A (positive SPA), subgroups two and three—compared to the first subgroup and the covariates age, education, and living alone—were statistically significant predictors for positive SPA. Participants who were older, had attained higher education levels, lived alone, or were interviewed before March 6, 2020, were more

likely to report greater positive SPA. In model B (negative SPA), subgroups two and three—compared to the first subgroup and the covariates age, income, and living alone—were statistically significant predictors for negative SPA. Participants who were older, had lower incomes, lived alone, or were interviewed after March 6, 2020, were more likely to report greater negative SPA.

Discussion and Implications

This study explored the impact of different COVID-19-related time phases on SPA among adults aged 65+ living in Switzerland. As expected, negative and positive SPA was associated with the time periods in which the interviews took place. Individuals interviewed before the Federal Council called for the special protection of older adults reported lower negative SPA and higher positive SPA than those interviewed later. Thus, the results suggest that the pandemic—more specifically, the Federal Council’s call for the special protection of older adults through physical distancing—affected older adults’ subjective evaluations of their own aging.

Positive SPA decreased and negative SPA increased between the first and second subgroups, but positive SPA slightly increased and negative SPA decreased, as a possible “normalization” of SPA, after the Federal Council called for easing the official COVID-related restrictions. Other recent studies have also found these up-and-down movements for loneliness among older

Table 2. Linear Regression Analyses with Positive and Negative SPA as Dependent Variables.

Parameter	Scale	Single gross models with positive SPA		Model A: positive SPA		Single gross models with negative SPA		Model B: negative SPA	
		β		β		β		β	
Age	65–95	-.101***		-.129***		.111***		.103***	
Gender	Female (ref. male)	.025		-.010		-.033		.016	
Education	1–5	.101***		.072**		-.020		.045	
Income	1–9	.051*		.040		-.124***		-.083**	
Living alone	Yes (ref. no)	.026		.059*		.171***		.135***	
Children	Yes (ref. no)	.002		.032		-.060**		-.044	
Rural area	Yes (ref. no)	-.004		-.012		.009		.024	
Subgroup 2 (Mar 7–Mar 16)	ref. Subgroup 1 (Jan 27–Mar 6)	-.114**		-.116***		.030		.102**	
Subgroup 3 (Mar 17–Apr 8)	ref. Subgroup 1 (Jan 27–Mar 6)	-.094**		-.097**		.011		.067*	
Subgroup 4 (Apr 9–May 5)	ref. Subgroup 1 (Jan 27–Mar 6)	.005		.005		-.030		-.010	
Model fit									
				F (10/1,618) = 5.785;				F (10/1,612) = 9.211;	
				p < .000; R ² = .035				p < .000; R ² = .054	

Note: Dependent variables: Positive and negative SPA scales (scale 1–5).
 *p < .05. **p < .01. ***p < .001.

adults, indicating that loneliness increased during the first weeks of the COVID-19 lockdown and decreased thereafter (Buecker et al., 2020; Höglinger et al., 2020; Seifert & Hassler, 2020). However, the present data collection ended on May 5, 2020, and, therefore, further research is needed to evaluate future developments.

Nevertheless, from the available data, it may be assumed that recommendations grouping all older adults aged 65+ into one “at-risk group” affected their SPA—probably by (a) making older individuals reflect on their own resources and social/support networks, potentially evaluating them as frail; (b) labeling older adults as “at risk,” possibly causing them to be shunned; and (c) making older individuals feel old because society considered them frail and, therefore, old.

In addition to this time-related effect, SPA factors known from previous research—being older, having a lower income or lower education level, and living alone—were also found. COVID-19 has affected SPA, but this does not eliminate existing inequalities. Those who report high levels of negative SPA should be asked what could help them overcome those feelings. This calls for an individual—instead of a sweeping, one-group—view of older adults, and gerontological social work responses must be tailored to individual needs (Amadasun, 2020; Berg-Weger & Morley, 2020). The response to the COVID-19 pandemic has highlighted that older people are often grouped into a single 65+ at-risk group. Given the disease’s age-related multimorbidity and increasing mortality rate, the initial responses of the Swiss government and the FOPH seem to make sense for promoting general protection, but they are not justified from a scientific perspective (Ayalon et al., 2020). Putting all people aged 65+ into one group neglects the heterogeneity of these individuals and their diverse plans, situations, and lifestyles. In addition, such a one-dimensional view carries the danger of cementing an image of old age that no longer corresponds to empirical evidence or everyday experience. Stigmatizing all older people as sick, fragile, and helpless reinforces an image of this group as a social burden—an image that worries many people working in the field of aging because it promotes age discrimination and strains relationships between the young and old, which is all the more troubling during this already tense time. Nevertheless, there is still little information about how COVID-19 protective measures and the resulting social isolation are affecting older adults. Presumably, more will be learned from retrospective studies following the pandemic, but now researchers should be seeking to understand how the pandemic affects older people and how practical gerontology can best respond. Furthermore, more interventions should be developed to protect against increases in negative and decreases in positive SPA; for example, intervention studies were designed to promote more positive SPA in the context of an exercise program for older adults (Beyer et al., 2019).

Despite this study’s strengths, several limitations must be noted. First, the research focused on Switzerland, so the findings have limited generalizability. Second, the existing data provided only a cross-sectional view. Third, the test score reliability of the two scales used in this study for negative and positive SPA are low; nevertheless, the scales are well-established within the SPA research field. Fourth, because of the study variables’ limited width, the author could not control for other important background factors, such as measurements of quantity/quality and valuations of pandemic-related limitations in everyday life, personality, or attitudes toward COVID-19 governmental restrictions. Clearly, further studies with longitudinal designs and wider variable ranges are required to examine this topic in more detail.

In conclusion, the study showed that negative and positive SPA were affected by the Swiss government’s recommendations that people physically distance from each other, especially “vulnerable groups” (FOPH, 2020a) such as older adults aged 65 years and older. Putting all people over age 65 into one group neglects the heterogeneity of these individuals and their diverse plans, situations, and lifestyles. This could lead to a self-perception by older people that they are reduced only to their age. Although the study showed that the reduction in positive SPA and the increase in negative SPA returned to some degree of normality after the first lockdown, the possible consequences of the Corona pandemic regarding the self-image of older adults should still be monitored.

Acknowledgments

The author would like to acknowledge and thank Klaus R. Schroeter for his helpful comments on the first draft of this paper. The author would also like to thank the National Innovation Network, “Ageing in Society” (AGE-NT: www.age-netzwerk.ch), for its support of the Swiss Survey 65+ project.


Declaration of Conflicting Interests

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the State Secretariat for Education, Research and Innovation (SERI; project number: PgB 2017-2020-P-13), by the National Innovation Network, “Ageing in Society” (AGE-NT), and by the School of Social Work, University of Applied Sciences and Arts Northwestern Switzerland (FHNW).

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References

- Amadasun, S. (2020). Social work and COVID-19 pandemic: An action call. *International Social Work, 63*(6), 753–756. <https://doi.org/10.1177/0020872820959357>
- Ayalon, L., Chasteen, A., Diehl, M., Levy, B. R., Neupert, S. D., Rothermund, K., Tesch-Römer, C., & Wahl, H. W. (2020). Aging in times of the COVID-19 pandemic: Avoiding ageism and fostering intergenerational solidarity. *The Journals of Gerontology: Series B, 76*(2), e49–e52. <https://doi.org/10.1093/geronb/gbaa051>
- Berg-Weger, M., & Morley, J. E. (2020). Loneliness and social isolation in older adults during the COVID-19 pandemic: Implications for gerontological social work. *The Journal of Nutrition, Health & Aging, 24*(5), 456–458. <https://doi.org/10.1007/s12603-020-1366-8>
- Beyer, A.-K., Wolff, J. K., Freiburger, E., & Wurm, S. (2019). Are self-perceptions of ageing modifiable? Examination of an exercise programme with vs. without a self-perceptions of ageing-intervention for older adults. *Psychology & Health, 34*(6), 661–676. <https://doi.org/10.1080/08870446.2018.1556273>
- Brothers, A., Kornadt, A. E., Nehr Korn-Bailey, A., Wahl, H.-W., & Diehl, M. (2020). The effects of age stereotypes on physical and mental health are mediated by self-perceptions of aging. *The Journals of Gerontology: Series B*. Advance online publication. <https://doi.org/10.1093/geronb/gbaa176>
- Buecker, S., Horstmann, K. T., Krasko, J., Kritzler, S., Terwiel, S., Kaiser, T., & Luhmann, M. (2020). *Changes in daily loneliness for German residents during the first four weeks of the COVID-19 pandemic*. PsyArXiv. <https://doi.org/10.31234/osf.io/ytkx9>
- FOPH. (2020a, March 6). *Coronavirus: Increased protection of particularly vulnerable persons and evaluation of the economic impact*. Federal Office of Public Health (FOPH). <https://www.bag.admin.ch/bag/en/home/das-bag/aktuell/medienmitteilungen.msg-id-78381.html>
- FOPH. (2020b, March 16). *Coronavirus: Federal Council declares 'extraordinary situation' and introduces more stringent measures*. Federal Office of Public Health (FOPH). <https://www.bag.admin.ch/bag/en/home/das-bag/aktuell/medienmitteilungen.msg-id-78454.html>
- FOPH. (2020c, April 8). *Coronavirus: Federal Council extends measures by a week and decides on gradual easing*. Federal Office of Public Health (FOPH). <https://www.bag.admin.ch/bag/en/home/das-bag/aktuell/medienmitteilungen.msg-id-78744.html>
- Hausknecht, S., Low, L. F., O'Loughlin, K., McNab, J., & Clemson, L. (2020). Older adults' self-perceptions of aging and being older: A scoping review. *The Gerontologist, 60*(7), e524–e534. <https://doi.org/10.1093/geront/gnz153>
- Heckhausen, J., Dixon, R. A., & Baltes, P. B. (1989). Gains and losses in development throughout adulthood as perceived by different adult age groups. *Developmental Psychology, 25*(1), 109–121.
- Höglinger, M., Moser, A., Carlander, M. J., Hämmig, O., Wieser, S., & Puhani, M. A. (2020). *COVID-19 social monitor*. <https://csm.netlify.app/post/trend/>
- Hummert, M. L. (2011). Age stereotypes and aging. In K. Warner Schaie & S. L. Willis (Eds.), *Handbook of the psychology of aging* (7th ed., pp. 249–262). Elsevier. <https://doi.org/10.1016/B978-0-12-380882-0.00016-4>
- Kohli, M., & Dittmann-Kohli, F. (1996). *Zweiter Zwischenbericht zum Projekt Deutscher Alters-Survey* [Second in-between report of the Germany Aging Survey]. Freie Universität.
- Kornadt, A., Hoffmann, M., Murdock, E., Nell, J., & Albert, I. (2020). Views on aging and well-being in the covid crisis – A longitudinal study in Luxembourg. *Innovation in Aging, 4*(Suppl_1), 961. <https://doi.org/10.1093/geron/igaa057.3513>
- Levy, B. R., Slade, M. D., & Kasl, S. V. (2002). Longitudinal benefit of positive self-perceptions of aging on functional health. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 57*(5), P409–P417. <https://doi.org/10.1093/geronb/57.5.P409>
- Losada-Baltar, A., Jiménez-Gonzalo, L., Gallego-Alberto, L., Pedroso-Chaparro, del Sequeros Pedroso-Chaparro, M., Fernandes-Pires, J., & Márquez-González, M. (2020). “We are staying at home.” Association of self-perceptions of aging, personal and family resources, and loneliness with psychological distress during the lock-down period of COVID-19. *The Journals of Gerontology: Series B, 76*(2), e10–e16. <https://doi.org/10.1093/geronb/gbaa048>
- Luo, M. S., Li, L. W., & Chui, E. W. T. (2020). Self-perceptions of aging and control of life in late adulthood: Between-person and within-person associations. *Journal of Aging and Health, 32*(9), 1275–1281. <https://doi.org/10.1177/0898264320917303>
- Moser, C., Spagnoli, J., & Santos-Eggimann, B. (2011). Self-perception of aging and vulnerability to adverse outcomes at the age of 65–70 years. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 66B*(6), 675–680. <https://doi.org/10.1093/geronb/gbr052>
- Ryff, C. D. (1991). Possible selves in adulthood and old age: A tale of shifting horizons. *Psychology and Aging, 6*(2), 286–295. <https://doi.org/10.1037/0882-7974.6.2.286>
- Seifert, A., & Hassler, B. (2020). Impact of the COVID-19 pandemic on loneliness among older adults. *Frontiers in Sociology, 5*, 87. <https://doi.org/10.3389/fsoc.2020.590935>
- Shahid, Z., Kalayanamitra, R., McClafferty, B., Kepko, D., Ramgobin, D., Patel, R., Aggarwal, C. S., Vunnam, R., Sahu, N., Bhatt, D., Jones, K., Golamari, R., & Jain, R. (2020). COVID-19 and older adults: What we know. *Journal of the American Geriatrics Society, 68*(5), 926–929. <https://doi.org/10.1111/jgs.16472>
- Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 56*(6), P364–P373. <https://doi.org/10.1093/geronb/56.6.P364>
- Westerhof, G. J., & Wurm, S. (2015). Longitudinal research on subjective aging, health, and longevity: Current evidence and new directions for research. *Annual Review of Gerontology and Geriatrics, 35*(1), 145–165. <https://doi.org/10.1891/0198-8794.35.145>
- Wurm, S., Diehl, M., Kornadt, A. E., Westerhof, G. J., & Wahl, H.-W. (2017). How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Developmental Review, 46*, 27–43. <https://doi.org/10.1016/j.dr.2017.08.002>