

## AGEISM DURING THE COVID-19 PANDEMIC

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**Abstract:** *In 2021, five decades after it was first defined, ageism was declared by World Health Organization to be a global challenge that needs to be addressed. This article reviews the potential ageist elements in social media, the mass media, and healthcare practices directed towards older adults during a recent global context, the COVID-19 pandemic. Evidence indicates that some presentations relating to older adults in the mass media and in social media contained ageist elements ranging from the more subtle forms of ageism to more explicit forms, such as nicknames given to the COVID-19 pandemic in the social media (e.g. ‘Senior Deleter’). Evidence also reveals that during the pandemic some medical practices were ageist.*

**Key words:** *ageism, pandemic, older adults, social media.*

### 1. Introduction

The term ageism was coined by Butler (1969) to refer to the feelings, beliefs, and behaviors directed towards people based solely on chronological age. These relates especially to feelings, beliefs, and behaviors directed towards older age groups, with a special highlight on discrimination, negative beliefs (stereotypes) and negative feelings (prejudice) (Ayalon & Tesch-Römer, 2018; Nelson 2005). According to a recent study that took into consideration the content of magazines, newspapers and literature over the last 210 years, ageism directed towards older adults has increased since the 19th century. The analysis reports that the general description of older adults in today’s society is more negative than that which existed in the 19th century (Ng & Chow, 2021). According to the World Health Organization, one in two people have feelings, beliefs, or behaviors toward older adults that can be framed as ageist (World Health Organization, 2021a). This is a worrying aspect since ageism is associated with many negative outcomes. For instance, ageism is related to decreased older adults’ emotional well-being (Kang & Kim, 2022), worse physical health (Chang et al., 2020; Levy et al., 2014; Meisner, et al., 2013, Wurm et al., 2017), older adults’ decreased speed (Ginsberg et al., 2014), decreased longevity (Levy et al, 2002), increased loneliness (Ribeiro-Gonçalves et al., 2023) and so on. Another important aspect is that negative beliefs (negative stereotypes) exert an effect three times larger than positive beliefs (Meisner, 2012) on

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older adults' performance.

Studies related to a recent context, namely the COVID-19 pandemic, revealed that there were visible signs of increased ageism in many areas of society (Ayalon et al., 2021; Lichtenstein 2021). This article reviews the literature concerning the attitudes and behaviors directed toward older adults that may be considered markers of ageism.

## **2. Method**

This article is structured as an overview review according to the typology of Grant and Booth (2009). According to the previously mentioned authors, this type of review may not include a comprehensive searching method, or a quality assessment of the literature.

## **3. Ageism on social media during the COVID-19 pandemic**

During 2020, since the early stages of the pandemic, older adults as a group were placed by medical authorities in the high-risk category (Onder et al., 2020; Yanez et al., 2020; Zhou et al., 2020). This depiction of older adults as a group of risk elicited reactions on online social media. Social media incorporates widely-used platforms on which to share content, beliefs, feelings, and information. In 2019 in the European Union, 54% of persons between 16-74 years of age used social media platforms (Eurostat, 2020), so it has become an important source of information about social perception. Consequently, it is an important source of information for investigating beliefs and feelings with regard to older adults.

Some of the early reactions that emerged on social media during the COVID-19 pandemic can easily be considered ageist, due to the offensive, ridiculing and humiliating descriptions of older adults. One study (Jimenez-Sotomayor et al., 2020) took into account the content of tweets in the first ten days of the pandemic, when, as was mentioned, older adults were presented as the risk group among adults, and revealed that a high proportion of tweets were offensive towards older adults in many ways. For instance, one tweet stated "Calling #Covid19 the Boomer remover should not make me giggle, but it does" (Jimenez-Sotomayor et al., 2020, p. 1662). The tweets were also ageist because in the content the lives of older adults were considered not as valuable as those of younger ones. Up to 21% of the tweets may be in this situation (Jimenez-Sotomayor et al., 2020). Reducing the importance of the lives of older adults, considering them expendable, or considering that death and illness are natural for older adults, is a disturbing and an alarming aspect (Fraser et al., 2020). There were voices on social media that even called for generational sacrifice. For instance, the Texas governor, Dan Patrick, suggested that older adults should sacrifice their lives in the pandemic for the younger generation's benefit. It is interesting that the reactions to this call on Twitter also express support for this position (5% of the tweets expressed support) whereas 90% expressed opposition (Barrett et al., 2021).

In another study it was found that an average of 18% of daily tweets that referenced older adults in the first months of the pandemic incorporated ageist elements (Xiang et

al., 2021). However, cultural differences may exist. An analysis of Weibo, a Chinese social media platform, revealed less ageist content during COVID-19 pandemic, with less than 10% of the content analyzed having ageist elements. Weibo had a more positive characterization of older adults than Tweeter (Xi et al., 2021).

Other ageist examples are the trending hashtag on Twitter and TikTok - *#OK, Boomer* or the *#Boomer Remover* (Meisne, 2020; Ng & Indran, 2022; Sipocz et al., 2021). These two hashtags were offensive towards older adults and ridiculed them. It is worth mentioning also the ageist nicknames introduced by younger adults for the COVID-19 virus on Tweeter. Among the nicknames were: *Boomer Doomer*, *Senior Deleter* or *Elder Repeller* (Meisne, 2020). These nicknames reflect some of the younger generations' negative beliefs, feelings, and behaviors directed toward older adults.

An analysis performed in 20 countries comparing the characterization of older adults before and during the pandemic found that the ageist elements increased during the pandemic, not only on social media, but also in online newspapers and magazines (Ng et al., 2021). Mass media analyses during the COVID-19 pandemic also revealed ageist tendencies such as infantilized depictions of older adults (Lichtenstein, 2021) or extensive presentation of older adults as a group of vulnerable adults. In a way, media extended the medical authorities' depiction of older adults as being vulnerable (Zhang & Liu, 2022).

#### **4. Ageism during the covid-19 pandemic in healthcare practice**

Healthcare practitioners were on the front line during the COVID-19 pandemic, and many actions were coordinated by them. Consequently, it is also necessary to assess if the interventions of the health practitioners present any signs of ageism.

Scholars argue that the way medical authorities handled the pandemic indicated that they engaged in some ageist behaviors that raised some ethical concerns (Jecker, 2022; Martínez-Sellés et al., 2020; Pawlikowski, 2020; Sahebi et al., 2020; Satomi et al., 2020). For instance, one act of discrimination was the prioritization of medical resources based on chronological age criteria as happened in Italy in the early stages of pandemic (Rosenbaum, 2020; Vergano et al., 2020). This decision was based on the incorrect assumption that all adults who have the same chronological age also have the same biological resources and limitations, and that they are a homogenous group of adults (Farrell et al., 2020; Martínez-Sellés et al., 2020). Older adults also reported that they felt that their individuality was diminished by the medical measures during the COVID-19 pandemic (Derrer-Merk et al., 2022). This homogenization of older adults reinforces the negative stereotype found in society prior to the pandemic, namely that old age is implicitly linked to illness or fragility (Bai, 2014; Hummert, 1990; Hummert, Garstka, Shaner & Strahm 1994; Nelson, 2005).

Other ageist attitudes may be related to insufficient attention being paid to prevention and care in living facilities (Monahan et al., 2020), reduced attention to medical problems not related to COVID-19 (Pujolar et al., 2022; Zhu et al., 2022), or stricter quarantine measures based on age criteria (Barth et al., 2021). However, healthcare practitioners had been no strangers to ageism before the COVID-19

pandemic. Studies reveal different discrimination behaviors toward cancer patients based on the patient's chronological age (Derbey, 1991), while the same can be said with regard to stroke intervention (Hadbavna & O'Neill, 2013 ) or cardiology (Bowling, 1999). Studies also revealed that ageism prior to the pandemic was predictive of the behavior of nurses during the pandemic. Ageist attitudes were associated with less willingness to help older patients (Lytle et al., 2022).

## 5. Discussions

The results reveal that during the COVID-19 pandemic were multiple markers of ageism on social media and healthcare practice. The results are in line with other studies that revealed ageist attitudes in mass media (Ayalon et al., 2021; Bravo-Segal & Villar, 2020), in governmental statements (Naughton et al., 2023), and in public policies to approach COVID-19 pandemic (Vergano et al., 2020). The ageist manifestations during the pandemic may be considered a big setback in the effort to reduce age discrimination and age stereotypes (Morrow-Howell & Gonzales, 2020) to such extent that in 2021 the World Health Organization (World Health Organization, 2021 b) called ageism a global problem and a challenge, expressing concern relating to its frequency and costs for both older adults and society. This call from the World Health Organization also comes after mass media and social media representation of older adults during the early stages of the COVID-19 pandemic, but also after the attitudes of medical authorities during the early stage of the pandemic, when older adults were homogenized as a vulnerable age group and medical decisions started to be taken using cut-off points based on chronological age. Due to the many implications of ageism related to older adults' emotional well-being (Kang & Kim, 2022), physical health (Chang et al., 2020; Meisner, et al., 2013), longevity (Levy et al, 2002), or loneliness (Ribeiro-Gonçalves et al., 2023), more efforts are needed to reduce it.

As compared to other forms of discrimination, ageism directed towards older adults is unique because it also has the chance to affect those adults who have an ageist attitude as he/she progresses through age. Consequently, if the negative depiction of older adults in social and mass media is not a problem for younger adults that use these outlets, or who create the content on mass media, the answer may be that while this is not yet a problem for them, it may become as they get older. This makes ageist attitudes with regard to older adults a potential problem for all, since the chances of reaching older adulthood are higher than in the previous centuries (Dobriansky et al., 2007).

## 6. Conclusions

This article reveals that during the COVID-19 pandemic, social media posts were to some extent ageist. Healthcare professionals exhibited also behaviors that can be considered ageist. The approach of the COVID-19 pandemic may be considered a setback in the effort to combat discrimination and negative stereotypes related to old age and older adults.

## References

- Ayalon, L., Chasteen, A., Diehl, M., Levy, B. R., Neupert, S. D., Rothermund, K., Tesch-Römer, C., & Wahl, H. W. (2021). Aging in times of the COVID-19 pandemic: Avoiding ageism and fostering intergenerational solidarity. *The Journals of Gerontology. Series B, Psychological Sciences and Social Science*, 76(2), e49-e52. <https://doi.org/10.1093/geronb/gbaa051>.
- Ayalon, L., & Tesch-Römer, C. (2018). Introduction to the section: Ageism—Concept and origins. In: L. Ayalon, L. and C. Tesch-Römer, (eds) *Contemporary Perspectives on Ageism. International Perspectives on Aging*, vol 19. Springer. [https://doi.org/10.1007/978-3-319-73820-8\\_1](https://doi.org/10.1007/978-3-319-73820-8_1)
- Bai, X. (2014). Images of Ageing in Society: A Literature Review. *Journal of Population Ageing*, 7(3), 231–253. <https://doi.org/10.1007/s12062-014-9103-x>
- Barrett A. E., Michael C., & Padavic I. (2020). Calculated ageism: Generational sacrifice as a response to the COVID-19 pandemic. *The Journals of Gerontology: Series B*, 76(4), e201-e205. <https://doi.org/10.1093/geronb/gbaa132>
- Barth, N., Guyot, J., Fraser, S. A., Lagacé, M., Adam, S., Gouttefarde, P., Goethals, L., Bechard, L., Bongue, B., Fundenberger, H., & Célarier, T. (2021). COVID-19 and Quarantine, a Catalyst for Ageism. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.589244>.
- Bowling A. (1999). Ageism in Cardiology. *British Medical Journal*, 319(20), 1353-1355. <https://doi.org/10.1136/bmj.319.7221.1353>.
- Bravo-Segal, S., & Villar, F. (2020). La representación de los mayores en los medios durante la pandemia COVID-19: ¿hacia un refuerzo del edadismo? *Revista Española de Geriatría y Gerontología*, 55(5), 266–271. <https://doi.org/10.1016/j.regg.2020.06.002>
- Butler, R. N. (1969). Age-ism: Another form of Bigotry. *The Gerontologist*, 9(4), 243–246. [https://doi.org/10.1093/geront/9.4\\_Part\\_1.243](https://doi.org/10.1093/geront/9.4_Part_1.243)
- Chang, E.-S., Kanno, S., Levy, S., Wang, S.-Y., Lee, J. E., & Levy, B.R. (2020). Global reach of ageism on older persons' health: A systematic review. *PLoS ONE*, 15(1): e0220857. <https://doi.org/10.1371/journal.pone.0220857>
- Derrer-Merk, E., Reyes-Rodriguez, M.-F., Salazar, A.-M., Guevara, M., Rodríguez, G., Fonseca, A.-M., Camacho, N., Ferson, S., Mannis, A., Bentall, R., & Bennett, K. M. (2022). Is protecting older adults from COVID-19 ageism? A comparative cross-cultural constructive grounded theory from the United Kingdom and Colombia. *Journal of Social Issues*, 78, 900–923. <https://doi.org/10.1111/josi.12538>
- Dobriansky, P. J., Suzman, R. M. & Hodes, R. J. (2007, March). *Why population aging matters-a global perspective*. National Institute of Aging, National Institutes of Health, US Department of Health and Human Services. <http://www.nia.nih.gov/sites/default/files/WPAM.pdf>
- Eurostat, (2020, January, 31). *Are you using social networks?* <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20200630-2>
- Fraser, S., Lagacé, M., Bongué, B., Ndeye, N., Guyot, J., Bechard, L., Garcia, L., Taler, V., CCNA Social Inclusion and Stigma Working Group, Adam, S., Beaulieu, M., Bergeron, C. D., Boudjemadi, V., Desmette, D., Donizzetti, A. R., Éthier, S., Garon, S., Gillis, M., Levasseur, M., Lortie-Lussier, M., Marier, P., Robitaille, A., Sawchuk, K., Lafontaine, C., & Tougas, F. (2020) Ageism and COVID-19: what does our society's response say about

- us? *Age Ageing*, 49(5):692-695. <https://doi.org/10.1093/ageing/afaa097>.
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91–108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>
- Hadbavna, A., & O'Neill, D.(2013). Ageism in interventional stroke studies. *Journal of the American Geriatrics Society*, 61(11):2054-2055. <https://doi.org/10.1111/jgs.12537>.
- Hummert, M. L. (1990). Multiple stereotypes of elderly and young adults: A comparison of structure and evaluations. *Psychology and Aging*, 5(2), 182-193.
- Hummert, M. L., Garstka, T. A., Shaner, J. L., & Strahm, S. (1994). Stereotypes of the elderly held by young, middleaged and elderly adults. *Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, 49, 240-249. <https://doi.org/10.1093/geronj/49.5.p240>. PMID: 8056949.
- Jecker, N. S. (2022). Too old to save? COVID-19 and age-based allocation of lifesaving medical care. *Bioethics*, 36(7):802-808. <https://doi.org/10.1111/bioe.13041>.
- Jimenez-Sotomayor, M. R., Gomez-Moreno, C., & Soto-Perez-de-Celis, E. (2020). Coronavirus, ageism, and Twitter: An evaluation of tweets about older adults and COVID-19. *Journal of the American Geriatrics Society*, 68(8):1661-1665. <https://doi.org/10.1111/jgs.16508>.
- Kang, H., & Kim, H. (2022). Ageism and psychological well-being among older adults: A systematic review. *Gerontology and Geriatric Medicine*, 8:23337214221087023. <https://doi.org/10.1177/23337214221087023>.
- Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Sciences*, 18(6), 332-336. <https://doi.org/10.1111/j.1467-8721.2009.01662.x>.
- Levy, B. R., Pilver, C., Chung, P. H., & Slade, M. D. (2014). Subliminal strengthening: improving older individuals' physical function over time with an implicit-age-stereotype intervention. *Psychological Science*, 25(12):2127-2135. <https://doi.org/10.1177/0956797614551970>.
- Levy, B. R., Slade, M. D., Kunkel, S. R., & Kasl, S. V. (2002). Longevity increased by positive self-perceptions of aging. *Journal of Personality and Social Psychology*, 83(2), 261–270. <https://doi.org/10.1037/0022-3514.83.2.261>
- Lichtenstein, B. (2021). From "coffin dodger" to "boomer remover": Outbreaks of ageism in three countries with divergent approaches to coronavirus control. *Journals of Gerontology, Series B, Psychological Sciences and Social*, 76(4):e206-e212. doi: 10.1093/geronb/gbaa102.
- Lytle, A., Apriceno, M., Macdonald, J., Monahan, C., & Levy, S. R. (2022). Pre-pandemic ageism toward older adults predicts behavioral intentions during the covid-19 pandemic. *Journals of Gerontology. Series B, Psychological Sciences and Social*, 77(4):e11-e15. doi: 10.1093/geronb/gbaa210.
- Morrow-Howell, N., & Gonzales, E. (2020). Recovering from Coronavirus Disease 2019 (COVID-19): Resisting Ageism and Recommitting to a Productive Aging Perspective. *Public Policy & Aging Report*, 30(4), 133–137. <https://doi.org/10.1093/ppar/praa021>
- Martínez-Sellés, D., Martínez-Sellés, H., & Martínez-Sellés, M. (2020). Ethical issues in decision-making regarding the elderly affected by coronavirus disease 2019: An expert opinion. *European Cardiology*, 18:15:e48. doi: 10.15420/ecr.2020.14.
- Meisner, B. A. (2012). A meta-analysis of positive and negative age stereotype priming

- effects on behavior among older adults. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 67(1), 13–17, doi:10.1093/geronb/gbr062. A
- Meisner, B. A. (2020). Are you OK, Boomer? Intensification of ageism and intergenerational tensions on social media amid COVID-19. *Leisure Sciences*, 43(1-2), 56–61. <https://doi.org/10.1080/01490400.2020.1773983>
- Meisner, B. A., Weir, P. L., & Baker, J. (2013). The relationship between aging expectations and various modes of physical activity among aging adults. *Psychology of Sport and Exercise*, 14(4), 569–576. <https://doi.org/10.1016/j.psychsport.2013.02.007>
- Monahan, C., Macdonald, J., Lytle, A., Apriceno, M., & Levy, S. R. (2020). COVID-19 and ageism: How positive and negative responses impact older adults and society. *American Psychologist*, 75(7), 887–896. <https://doi.org/10.1037/amp0000699>
- Naughton, L., Padeiro, M., & Bueno-Larraz, B. (2023). Vulnerability in context; hard numbers, tricky words and grey areas for gerontology. *Journal of Aging Studies*, 65, 101131. <https://doi.org/10.1016/j.jaging.2023.101131>
- Nelson, T. D. (2005). Ageism: Prejudice against our feared future self. *Journal of Social Issues*, 61(2), 207–221. <https://doi.org/10.1111/j.1540-4560.2005.00402.x>
- Ng, R., Allore, H. G., Trentalange, M, Monin, J. K., & Levy, B. R. (2015) Increasing negativity of age stereotypes across 200 years: Evidence from a database of 400 million words. *PLoS ONE*, 10(2), e0117086. <https://doi:10.1371/journal.pone.0117086>
- Ng, R., & Chow, T. Y. J. (2021). Aging narratives over 210 years (1810-2019). *The Journals of Gerontology: Series B*. 76(9), 1799-1807. <https://doi.org/10.1093/geronb/gbaa222>
- Ng, R., Chow, T. Y. J., & Yang, W. (2021). Culture linked to increasing ageism during covid-19: Evidence from a 10-billion-word corpus across 20 countries. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 76(9):1808-1816. doi: 10.1093/geronb/gbab057.
- Onder, G., Rezza, G., & Brusaferro, S. (2020). Case-fatality rate and characteristics of patients dying in relation to covid-19 in Italy. *JAMA*, 323(18):1775–1776. doi:10.1001/jama.2020.4683
- Pawlikowski, J. (2020). The ethical dimension of prioritization and allocation decisions within the context of the coronavirus disease 2019 pandemic. *Polish Archives of Internal Medicine*, 30(5):466-472. doi: 10.20452/pamw.15334.
- Pujolar, G., Oliver-Anglès, A., Vargas, I., & Vázquez, M. L.(2022). Changes in access to health services during the covid-19 pandemic: A scoping review. *International Journal of Environmental Research and Public Health*, 19(3):1749. doi: 10.3390/ijerph19031749.
- Reuben, N., & Indran, N. (2022). Hostility toward baby boomers on TikTok. *The Gerontologist*, 62(8): 1196–1206, <https://doi.org/10.1093/geront/gnac020>
- Ribeiro-Gonçalves, J. A., Costa, P. A., & Leal, I. (2023). Loneliness, ageism, and mental health: The buffering role of resilience in seniors. *International Journal of Clinical and Health Psychology*, 23(1):100339. doi: 10.1016/j.ijchp.2022.100339.
- Rosenbaum, L. (2020). Facing Covid-19 in Italy - Ethics, logistics, and therapeutics on the epidemic's front line. *The New England Journal of Medicine*, 382, 1873–1875. <http://dx.doi.org/10.1056/NEJMp2005492>
- Sahebi, A., Moayedi, S., & Golitaleb, M. (2020). COVID-19 pandemic and the ethical challenges in patient care. *Journal of Medical Ethics and History of Medicine*, 19:13:24. doi: 10.18502/jmehm.v13i24.4955.

- Satomi, E., Souza, P. M. R., Thomé, B. D. C., Reingenheim, C., Werebe, E., Troster, E. J., Scarin, F. C. C., Bacha, H. A., Grunspun, H., Ferraz, L. J. R., Bueno, M. A. S., Barros Filho M. T. L., & Borges, P. C. M. (2020). Fair allocation of scarce medical resources during COVID-19 pandemic: ethical considerations. *Einstein*, 30(18):eAE5775. doi: 10.31744/einstein\_journal/2020AE5775.
- Sipocz, D., Freeman, J. D., Elton, J. (2021). A toxic trend?": Generational conflict and connectivity in Twitter discourse under the #BoomerRemover hashtag. *The Gerontologist*, 61(2):166-175. doi: 10.1093/geront/gnaa177.
- Vergano, M., Bertolini, G., Giannini, A., Gristina, G. R., Livigni, S., Mistraletti, G., Riccioni, L., & Petrini, F. (2020). Clinical ethics recommendations for the allocation of intensive care treatments in exceptional, resource-limited circumstances: the Italian perspective during the COVID-19 epidemic. *Critical Care*, 24(1):165. doi: 10.1186/s13054-020-02891-w.
- World Health Organization, (2021a, March, 18). *Global report on ageism*. <https://www.who.int>
- World Health Organization (2021b, March, 18). *Ageism is a global challenge*: UN. Retrieved from: <https://www.who.int/news/item/18-03-2021-ageism-is-a-global-challenge-un>
- Wurm, S., Diehl, M., Kornadt, A. E., & Westerhof, G. J. (2017). Wahl HW. How do views on aging affect health outcomes in adulthood and late life? Explanations for an established connection. *Development Review*, 46:27-43. doi: 10.1016/j.dr.2017.08.002.
- Xi, W., Xu, W., Zhang, X., & Ayalon, L. (2021). A thematic analysis of Weibo topics (Chinese Twitter Hashtags) regarding older adults during the COVID-19 outbreak. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 76(7):e306-e312. doi: 10.1093/geronb/gbaa148.
- Xiang, X., Lu, X., Halavanau, A., Xue, J., Sun, Y., Lai, P. H. L., & Wu, Z. (2021). Modern senicide in the face of a pandemic: An examination of public discourse and sentiment about older adults and covid-19 using machine learning. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 76(4):e190-e200. doi: 10.1093/geronb/gbaa128.
- Yanez, N. D., Weiss, N. S., Romand, J. A., & Treggiari, M. M. (2020). COVID-19 mortality risk for older men and women. *BMC Public Health*, 20, 1742. <https://doi.org/10.1186/s12889-020-09826-8>
- Zhang, J., & Liu, X. (2021). Media representation of older people's vulnerability during the COVID-19 pandemic in China. *European Journal of Ageing*, 18(2), 149–158. doi:10.1007/s10433-021-00613-x
- Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., Xiang, J., Wang, Y., Song, B., Gu, X., Guan, L., Wei, Y., Li, H., Wu, X., Xu, J., Tu, S., Zhang, Y., Chen, H., & Cao, B. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*, 395(10229):1054-1062. doi: 10.1016/S0140-6736(20)30566-3.
- Zhu, Y., Liu, Y., & Jiang, H. (2022). Geriatric health care during the COVID-19 pandemic: Managing the health crisis. *Clinical Interventions in Aging*, 17:1365-1378. doi: 10.2147/CIA.S376519.