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ARTICLE

Negative ageism and compassionate ageism in news coverage of older people under COVID-19: how did the pandemic progression and public health responses associate with different news themes?

Frankie Ho Chun Wong[1,2], Dara Kiu Yi Leung[2], Edwin Lok Yan Wong[2], Tianyin Liu[2], Gloria Hoi Yan Wong[2] and Terry Yat Sang Lum[2,3]*

[1]Philip Merrill College of Journalism, University of Maryland, College Park, MD, USA, [2]Department of Social Work and Social Administration, The University of Hong Kong, Hong Kong (SAR) and [3]Sau Po Centre on Ageing, The University of Hong Kong, Hong Kong (SAR)
*Corresponding author. Email: tlum@hku.hk

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Abstract

Previous studies have found negative ageing narratives in the media during the COVID-19 pandemic. However, few have focused on compassionate ageism and how the news responded to the progression of the COVID-19 pandemic. We investigated (a) media themes of negative and compassionate ageism and (b) their relationships with COVID-19 parameters and the public health response. The sample included 1,197 articles relevant to COVID-19 and older people in Hong Kong published between January and December 2020. We used thematic analysis to identify themes from the news articles and structural equation modelling to explore these themes' relationship with the number of older people infected, effective reproduction number, number of COVID-19 deaths and public health response parallel in time. Pandemic-related variables were lagged for a day – the time needed to be reflected in the news. Two negative ageism themes portrayed older people as vulnerable to COVID-19 but counterproductive in combating the pandemic. Two compassionate ageism themes depicted older people as a homogenous group of passive assistance recipients. The theme *blaming older people* was associated with the number of confirmed infections ($\beta = 0.418$, $p = 0.002$) but *vulnerability of older people* was not associated with pandemic-related variables. The theme *helping older people* was negatively associated with the percentage of older people in confirmed infections ($\beta = -0.155$, $p = 0.019$). The theme *resources available* was negatively associated with confirmed infections ($\beta = -0.342$, $p < 0.001$) but positively associated with the Containment and Health Index ($\beta = 0.217$, $p = 0.005$). Findings suggested that negative and compassionate ageism were translated into narratives about older people in the media as the pandemic evolved but did not address the actual risk they faced. Media professionals should be aware of the potential negative and compassionate ageism prompted by the news agenda and promote adequate health behaviours and responses.

Keywords: ageing narratives; stigma; stereotype; health communication; news media

Introduction

While communicating age as an independent risk factor of COVID-19 can draw the public's attention to life-threatening risks and inspire corresponding preventive measures (Fletcher, 2021), doing so may reinforce negative ageism that portrays older people as weak, frail and a burden to society. Under the infodemic of information overabundance and misinformation, older people may perceive themselves as having higher risk of COVID-19 infection and exhibit more depressive symptoms (Liu *et al.*, 2022) and anxiety symptoms, which in turn lower their trust towards information sources (Wong *et al.*, 2021). Age-friendly communication in the community, including the delivery of appropriate and relevant information to older people, is essential in mitigating their pandemic-induced anxiety (Wong *et al.*, 2022). Nonetheless, media coverage of older people during the COVID-19 pandemic may be unduly influenced by biased societal views instead of responding to age-specific public health challenges. A recent study reviewing newspaper and magazine articles across 20 countries revealed that negative ageing narratives were not associated with the COVID-19 incidence and mortality rates (Ng *et al.*, 2021), highlighting concern about the perpetuation of ageism in and by the media. News narratives responding to public fear amid growing risks of the pandemic may spark ageist sentiments and distorted perceptions of older people in the community, which not only affect older people's wellbeing (Flett and Heisel, 2020; Morgan *et al.*, 2021) but also influence governmental policy on future resources and possible choices to triage or withhold medical treatment in this population (Fingerman and Pillemer, 2021). However, the study on ageism in media employed a negative–positive stereotypic valence (Ng *et al.*, 2021), and it remains unknown how various dimensions of ageism responded to pandemic parameters. While negative ageism has been extensively discussed in the literature, compassionate ageism has received comparatively little attention (Vervaecke and Meisner, 2021).

Negative ageism

Developed from Butler (1969), ageism nowadays generally refers to the disparity in attitudes and treatment based on individuals' age at personal, societal or structural levels (Iversen *et al.*, 2009; Officer and de la Fuente-Núñez, 2018). The 'social imaginary' approach suggests that ageism is more than the corporeal otherness between older younger bodies but a chronological 'otherness' associated with time (old age), where the imaginary of old age is separated from everyday experience (Higgs and Gilleard, 2020). Ageism can manifest in negative biases of cognition, affect and behaviour, including age-based stereotypes, prejudice and discrimination, respectively (Ayalon and Tesch-Römer, 2017). In an everyday context, older people might be subject to a wide spectrum of ageist behaviour or policies ranging from microaggression to blatant acts of harm (Reynolds, 2020). For instance, older people may receive unwanted assistance that consolidates their perceived helplessness or be overtly neglected or exploited. Ideas of ageism originate

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from and disseminate among various components of society – across individuals, groups and institutions (Reynolds, 2020). Ageist ideas can present themselves as messages that vary in explicitness and intention, and will generate diverse impacts (*e.g.* on a single older person to the whole age cohort) given the particular source, form and circumstances. It should be noted that ageism may risk being too totalising and has recently been criticised for not capturing key aspects of the corporeality of old age. However, the concept can still be helpful in identifying instances of exclusion or discrimination in the society (Higgs and Gilleard, 2020).

The negative portrayal of older people in the mass media can propagate ageist stereotypes that victimise older people with paternalistic attitudes (Koskinen *et al.*, 2014). COVID-19 exacerbated negative ageism in social media and the broader mass media environment (Fingerman and Pillemer, 2021). Older people were portrayed as homogenous populations, subjected to age-centric debates over who should be saved (Lichtenstein, 2021; Meisner, 2021). A study of Twitter data early in the pandemic found a prevalence of ageist narratives perceiving older people as less valuable and understating the effect of the virus on older people (Xiang *et al.*, 2021). Another investigation of over 2,000 news reports in the United States of America about nursing residences revealed an increase in the volume of negatively toned coverage during the early phases of the outbreak (Miller *et al.*, 2021). In China, analysis of dominant media sources revealed that older people were portrayed as an inactive and liable group spreading the virus and requiring interpersonal or institutional assistance to cope with COVID-19 (Zhang and Liu, 2021).

Compassionate ageism

Compassionate ageism stereotypes a heterogeneous 'aged' social group as poor, frail, dependent, but a 'deserving' object of discrimination (Binstock, 1983, 2010). This form of 'benevolent' ageism recognises that beyond straightforward negative age-based conceptions, older people may, at the same time, be attributed with subtler positive biases (Swift and Chasteen, 2021). A common compassionate ageist view is that older people are a homogenously endearing and amicable generation requiring external assistance (Cuddy and Fiske, 2002; Vervaecke and Meisner, 2021). Motivated by pity or goodwill, compassionate ageism can lead to unfavourable situations where older people receive unsolicited concern or assistance from others, sometimes in the form of social movements (Swift and Chasteen, 2021). For older people, the insidious effects of compassionate ageism include diminished self-esteem and drive, and other detriments to the body or mind (Meisner, 2012; Chasteen and Cary, 2015).

During the COVID-19 pandemic, compassionate ageism has been observed together with the aforementioned increase in negative ageism. Both treat older people as an outgroup by either advocating their sacrifice or needing to be saved by others (Berridge and Hooyman, 2020). In response to COVID-19, governments and media reports endorsed age-centric rhetoric and policies implying older people's weakness and need, which exemplified the key characteristics of compassionate ageism – homogenisation and paternalism (Ayalon *et al.*, 2021; Swift and Chasteen, 2021). Extensively shored up by the media, a 'caremongering' bandwagon has spread in the broader society that evokes the masses' pity for older

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people and hence a desire to help them that has effectively exacerbated the susceptibility narrative (Vervaecke and Meisner, 2021).

The current study

An evidenced understanding of how pandemic progression translated into narratives about older people is a prerequisite to encouraging communication of age-specific public health challenges, and promoting adequate health response during a health crisis, while not reinforcing ageist misconceptions of older people. As the literature review suggests, both negative and compassionate ageism were rampant as COVID-19 hit the globe. It was expected that when the pandemic worsens, ageism will emerge as the older population was treated as an outgroup to be blamed for spreading the virus (Zhang and Liu, 2021) or needs to be saved (Berridge and Hooyman, 2020). These ageist narratives may be amplified or mitigated in the media. Therefore, it is valuable to analyse the trends of ageist narratives and if they became more prominent when the pandemic deteriorated. This study aimed to: (a) investigate negative and compassionate ageist portrayals of older people in pandemic-related news coverage, and (b) examine the relationships between these narratives and objective COVID-19 parameters and public health responses.

The study contributes to existing literature regarding the associations between ageism in the media and the progression of the pandemic in two ways: (a) extending the examination of ageing narratives from a scale of positive/negative stereotypes to topical themes concerning negative and compassionate ageism, and (b) examining their association not only with COVID-19-related incidence and mortality rates but also the public health response to the pandemic as it may also shape ageist views in society. This study examines the news coverage of COVID-19 in Hong Kong because the territory is closely linked to Mainland China and its relatively free news industry was among the first to break news about the potential pandemic. Hong Kong was also affected by COVID-19 early in January 2020, when the world knew little about the virus. Its news coverage reflects the public perceptions of the unknown contagious disease. Prior experience with the SARS epidemic in 2003 also prepared the Hong Kong government to act swiftly to address the potential impact on the older population (Lum *et al.*, 2020). Officials and health experts responded quickly and frequently appeared in the mass media to prepare the public for the upcoming COVID-19 outbreak.

Methods

Dataset

News articles from five mainstream Hong Kong news outlets were obtained from the Chinese-language news database Wisenews using the Chinese keywords equivalent to ('COVID-19'/'pneumonia') + ('older people'/'elderly'/'old age'). The news outlets included *Apple Daily*, *Headline Daily*, *HK01*, *Mingpao Daily* and *Oriental Daily*, which cover the majority of news readership and encompassed different positions on social and political spectrums. *Apple Daily*, *Oriental Daily* and *Mingpao Daily* are the three most-read paid newspapers, covering 54.7, 34.2 and 14.7 per cent of the readership, respectively (Leung, 2020). *Apple Daily* and

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Oriental Daily are mass-oriented, and *Mingpao Daily* is elite-oriented. *Headline Daily* is the most-read free newspaper and *HK01* is the most-read online news portal, accounting for 32.6 and 21.2 per cent of the readership, respectively (Leung, 2020). *Apple Daily* is considered pro-democracy, *Mingpao Daily* and *HK01* are considered politically neutral, and *Oriental Daily* and *Headline Daily* are regarded as pro-establishment (Huang and Song, 2018). The search period was from 1 January 2020 to 31 December 2020. We included articles that: (a) contained information relevant to both COVID-19 and older people in Hong Kong (*e.g.* older people's life under the pandemic) and (b) were a current affairs piece, including editorials and columns. The initial search returned 2,510 news articles, of which 1,197 articles met the inclusion criteria.

COVID-19 parameters

The association between ageism and pandemic-related attributes, as the literature suggests (Ng *et al.*, 2021), was tested with five COVID-19 parameters in this study. The perceived threat of the pandemic to the public was measured by the daily number of new infections for two reasons. First, the Hong Kong SAR government has been reporting the number of new infections every day in its daily press conference since early 2020. The press conference is broadcasted live on television and radio every day and is reported in all major news outlets including major newspapers and television/radio news programmes. Second, our earlier study found that the daily number of new infections was associated with mental health risks among older adults in Hong Kong (Liu *et al.*, 2022). Perceived threat of the pandemic to older people was further calculated by the percentage of infections of those aged 60 and over. Data were obtained from government reports (Centre for Health Protection, 2021).

The actual risk of infection was operationalised as the effective reproduction number (R_t) measuring the transmissibility of COVID-19 at any given time (Liu *et al.*, 2022). Daily R data were extracted from a data portal managed by the Li Ka Shing Faculty of Medicine, The University of Hong Kong (Leung *et al.*, 2021).

Aligned with Ng *et al.* (2021), this study included daily COVID-19 death count as an independent variable. Numbers in 2020 were extracted from government reports (Centre for Health Protection, 2021). Among the 147 individuals who died after suffering from COVID-19, 95.92 per cent (N = 141) were older people. Given that older people accounted for the absolute majority of COVID-19-related deaths, the change in the proportion of COVID-19 deaths among older people was not used in the analysis.

Pandemic wave, a publicly known cycle of upsurge and decline of newly infected cases identified by health experts, was controlled in the analysis to account for the different characteristics between the event-based attention cycles in the media (Shih *et al.*, 2008). The first wave featuring individual cases followed the identification of the first case in January 2020. The second wave started on 16 March 2020 when many cases were imported (Radio Television Hong Kong, 2020a). The third wave was characterised by infections in care homes for older people, beginning on 7 July 2020 (*South China Morning Post*, 2020). The fourth wave began on 23 November 2020, following a super-spreading event in a dance studio cluster

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(Radio Television Hong Kong, 2020b). Pandemic parameters and public health responses across different waves are presented in Table S1 in the online supplementary material.

Public health response

As a legacy of the SARS epidemic (Lum *et al.*, 2020), age-specific public health responses from the government can receive significant media coverage. The Containment and Health Index from the Oxford COVID-19 Government Response Tracker evaluates daily governmental pandemic policies (Hale *et al.*, 2021). Containment policies involved eight domains, such as restrictions on gatherings and international travel controls, while health-care responses involved six dimensions, such as contact tracing and protection of older people.

Data analysis

A mixed-methods approach was adopted to address the two aims of the study. To identify negative and compassionate ageist portrayals of older people in the pandemic-related news coverage (Aim 1), we adopted a thematic analysis approach similar to previous studies on ageism in media (Marier and Revelli, 2017), public health (Kummervold *et al.*, 2017; Foley *et al.*, 2019) and COVID-19 media coverage (Thomas *et al.*, 2020; Morgan *et al.*, 2021). Authors from the field of communication (FHCW) and psychology (DKYL and ELYW) reviewed a subsample of 119 articles (systematically sampled by date; around 10% of the data) independently. They discussed the preliminary findings together to identify and group latent subtheme topics to generate a collection of themes. This approach allows researchers to develop codes from meanings emerging from the data (Guest *et al.*, 2012*a*). A codebook was developed by iteratively reviewing text segments for systematic coding of all articles until data saturation, where no new themes emerged from the articles (Guest *et al.*, 2012*b*). Next, the authors trained two undergraduate students to code the sub-themes according to the codebook. The subsample of 119 articles was coded to establish inter-rater reliability (IRR). Gwet's AC1 statistics, an IRR coefficient less affected by prevalence and marginal probability (Wongpakaran *et al.*, 2013), suggested good IRR (γ mean = 0.89, standard deviation = 0.08). Discrepancies were resolved through discussion, and the remaining sample was coded under supervision.

To examine the relationships between the ageism themes in the media and COVID-19 parameters (Aim 2), we undertook structural equation modelling (SEM), an approach similar to previous studies in the field of communication (Hernández and Madrid-Morales, 2020; Harraway and Wong, 2021). We calculated the daily occurrence of each identified news topic theme in 2020 and then used confirmatory factor analysis (CFA) to examine the thematic structure (*i.e.* the grouping of themes and sub-themes). Next, COVID-19 parameters were lagged one day to observe effects on the news. Lagged parameters were entered into SEM as exogenous factors associated with each news theme, and news outlets were entered as control variables. Both CFA and SEM utilised maximum likelihood estimation with robust standard errors and a Satorra–Bentler scaled test statistic to model the non-normal

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Table 1. Themes and news topics identified from qualitative exploratory thematic analysis

Theme	News topic
Blaming older people	Being unhygienic
	Not following containment policies
	Burden on the medical system
Vulnerability of older people	Higher risk of infection
	Severity of illness
	Higher death rates
Helping older people	Maintaining physical health
	Maintaining mental health
	Help with daily living
Resources available	Free groceries
	Free masks
	Priority resources for older people
COVID-19 risk to society	Suspected infections
	Group infections
	Unknown source of infection

continuous endogenous variables (Satorra and Bentler, 1994; Finney and DiStefano, 2006). Sensitivity analyses of news theme structure were conducted by quantitative exploratory factor analysis and examined by CFA. Poisson regressions were conducted as sensitivity analyses for each arm of the regressions in SEM to address the zero-inflated skewness in the news theme data. Quantitative analysis was conducted using R with package lavaan (Rosseel, 2012).

Qualitative results

A news theme structure comprising five themes, each with three topic codes, was identified (*see* Table 1). *Blaming older people* and *vulnerability of older people* reflected negative ageism while *helping older people* and *resources available* indicated compassionate ageism. *COVID-19 risk to society* covered broader society in the context of the pandemic.

Blaming older people

The theme *blaming older people* captured the undesirable behaviours and burdens attributed to older people. Older age was associated with *being unhygienic* in daily life by highlighting deviant behaviours. News articles described habits that helped spread the virus, such as spitting and not wearing face masks. News items quoted experts and politicians claiming that older people had a lower sense of infection prevention and were also depicted as *not following containment policies*.

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Incidents of older people disregarding social distancing and mask-wearing orders were reported. While a news article reported a large group of older people had 'ignored regulations' and gathered to gamble without wearing masks, another article cited a citizen who believed 'penalties would deter older people who refuse to wear masks to comply'. Nevertheless, a headline from the *Oriental Daily* suggests that 'HKD $5000 penalty failed to work, old men took masks off and violated distancing regulations to chat'. Older adults were considered undisciplined. Meanwhile, older people were described as a *burden on the medical system*. They were identified as increasing 'the stress of sickbeds' and 'demanding isolation facilities in hospitals', while 'an outbreak in larger care homes will deplete the medical system'. Older adults were described as counterproductive to public health efforts.

Vulnerability of older people

Higher infection risks, severe illness and higher death rates were the main components in this theme. This theme portrayed older adults as being more vulnerable *per se*. *Higher risk of infection* was associated with care home settings and the daily lives of older people. Care homes were presented as places full of 'the old and weak' where compact spaces facilitated the spread of diseases. Older people's routines of social dining and grocery shopping were regarded as 'high-risk activities', where the 'risk' lies in older age but not the daily activities themselves. For example, the headline from an *HK01* op-ed read: 'Older people at high risk, teahouse should be restricted?' The article argued that there were certain infection risks because older people dine together in teahouses. Once infected, older people were also considered to experience greater suffering from the illness. *Severity of illness* was associated with older age, implying increased complications of COVID-19 and challenges stemming from comorbidities with chronic health conditions. *Higher death rates*, as suggested from academic research and worldwide experiences, were cited in news reports. For example, a headline from the *Apple Daily* cited, 'COVID-19 death rate of people 80 years old or above is 26.8%, [people living in] care facilities are 10% higher than living at home'. Infected older people were described as 'deteriorating faster and required intensive care, associated with higher death rates'.

Helping older people

News articles covered the efforts to support older people's health and daily lives. On *maintaining physical health*, the news reported the care provided to both COVID-19-infected and community-dwelling older people. They described the necessity of and solution to sustaining physical functioning amid hospitalisation and stay-home advice. *Maintaining mental health* of older people was also highlighted. Loneliness from social distancing was identified as a major challenge given that care homes were isolated and older people living alone had reduced contact with family and friends. For instance, an *Oriental Daily* article headline writes, 'emotion, social, are homecare support plunged, survey reveals COVID-19 damages the physical and mental health of the "grey hair"'. Some articles discussed potential remedies. Technologies and social care were reported as solutions to maintain older

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people's engagement. *Help with daily living* emerged as another element in this theme, describing services and care for older people with house chores, escorting and other daily labour. Older people were described as not sufficiently physically strong to complete these tasks. Since going to markets and public spaces was considered to pose higher infection risks, older people were also advised to stay home and enlist the help of younger people with grocery shopping.

Resources available

This theme captured news about material aid for older people. Information about *free groceries* and *free masks* was common, especially early in the pandemic. While older people were reported as having to reuse face masks, the news also covered the efforts of social organisations and individuals in distributing resources. The media further reported the skyrocketing prices of necessities as demand heightened. *Priority resources for older people* were provided to the 'needy', including homeless and physically challenged people, and older people. Such news coverage also spotlighted those who donated and handed out the resources. Celebrities and organisations were often cited in the headlines of these news stories.

COVID-19 risk to society

This theme covered news that mentioned events with uncertain infections and expansion of infections to the public, including older people. *Suspected infections* reported cases of patients with COVID-19 symptoms yet to be confirmed as infected. It reflected potential infections among the public and the risk of exposure to the virus at locations where these cases left their traces. *Group infections* included reports on people contracting COVID-19 after attending certain group events or staying at the same venue, such as care homes, restaurants and workplaces. For example, a *Mingpao Daily* headline reads: 'Pandemic wave 4 dancing group [has] 250 cases, spread to clinics, care homes, and schools.' The 'dancing group' denoted the infection clusters related to patients who had participated in a super-spreading event in a dance club. Another type of case posing uncertain risks was patients with *unknown infection sources*. It was believed to be a warning sign of a community-wide outbreak. For instance, experts were cited on their worries that 'if virus source is not to be located, an infection chain could be created by invisible patients in communities'. Although this theme was not directly related to ageism, it was retained in the following analyses for two reasons. First, this theme represents one of the key themes that emerged from the qualitative analysis, suggesting a theoretical connection among other age-related themes. Second, the statistical model accounted for its relationship with age-related themes, thus controlling the effect of a general COVID-19 theme to show a robust finding for age-related themes.

Quantitative results

Table 2 shows the descriptive statistics of the consolidated dataset measuring daily news sub-theme frequencies and pandemic parameters and public health response variables. Figure 1 shows the daily trends of news themes and COVID-19 cases.

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Table 2. Descriptive statistics of pandemic-related variables, news themes and news outlets (daily)

Variables	Range (daily)	Statistics		Number of days[1]
		Mean or N	SD or %	
Pandemic development and public health responses:				
Percentage of older people in confirmed infections	0–1	0.19	0.22	–
Confirmed infections	0–149	23.99	34.16	–
R_t	0–4.54	1.00	0.92	–
COVID-19 deaths	0–6	0.40	0.93	–
Containment and Health Index	10.71–70.83	55.29	14.19	–
News themes:				
Blaming older people:				
Being unhygienic	0–2	0.08	0.31	28
Not following containment policies	0–3	0.10	0.35	31
Burden on the medical system	0–2	0.06	0.27	21
Vulnerability of older people:				
At risk of infection	0–5	0.39	0.76	103
Severity of illness	0–4	0.36	0.69	93
Higher death rate	0–5	0.38	0.78	95
Helping older people:				
Maintaining physical health	0–3	0.11	0.41	32
Maintaining mental health	0–4	0.25	0.57	70
Help with daily living	0–5	0.24	0.57	69
Resources available:				
Free groceries	0–5	0.31	0.73	76
Free masks	0–7	0.44	1.11	77
Priority resources for older people	0–6	0.33	0.85	70
COVID-19 risk to society:				
Suspected infections	0–5	0.38	0.87	83
Group infections	0–7	0.52	1.10	100
Unknown source of infection	0–4	0.34	0.74	83
Number of news articles from news outlets (%):				
Apple Daily	0–5	172	14.4	–
Headline Daily	0–2	74	6.2	–

(*Continued*)

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Table 2. (*Continued.*)

Variables	Range (daily)	Statistics		Number of days[1]
		Mean or N	SD or %	
HK01	0–8	460	38.4	–
Mingpao Daily	0–4	201	16.8	–
Oriental Daily	0–5	290	23.2	–

Notes: N = 366. 1. Number of days coded with the news theme topic. SD: standard deviation.

News themes emerged in 2020 at irregular frequencies. While the most discussed topic, *at risk of infection* under the theme *COVID-19 risk to older people*, emerged in 103 days of news coverage, the least discussed topic, *burden on the medical system* in the theme *blaming older people*, only appeared in 21 days of coverage. The daily quantity of news topics varied. *Group infections* and *free masks* reached up to seven coverages a day, yet *burden on the medical system* and *being unhygienic* only received two mentions at most per day. The number of articles from each news outlet varied. *HK01* published 460 (38.4% of the total) articles about older people

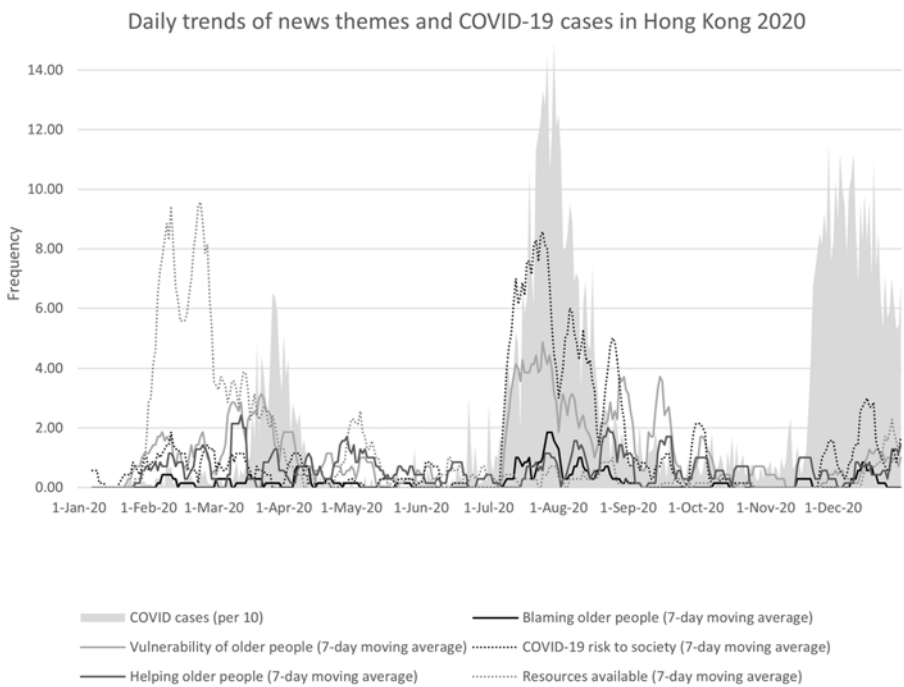

Figure 1. Daily trends of news themes and COVID-19 cases in Hong Kong, 2020.
Note: 7 per. Mov. Avg.

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Table 3. Confirmatory factor analysis results of the news theme structure from thematic analysis

	Standardised parameter estimate	Standard error	*p*
Blaming older people:			
Being unhygienic	0.925		
Not following containment policies	0.772	0.264	0.000
Burden on the medical system	0.151	0.086	0.009
Vulnerability of older people:			
At risk of infection	0.680		
Severity of illness	0.736	0.143	0.000
Higher death rate	0.667	0.167	0.000
COVID risk to society:			
Suspected infections	0.738		
Group infections	0.831	0.185	0.000
Unknown source of infection	0.806	0.153	0.000
Helping older people:			
Maintaining physical health	0.802		
Maintaining mental health	0.758	0.172	0.000
Help with daily living	0.697	0.211	0.000
Resources available:			
Free groceries	0.662		
Free masks	0.999	0.451	0.000
Priority resources for older people	0.854	0.310	0.000
Goodness-of-fit:			
χ^2 (df = 80)	128.178	*p*	0.001
CFI	0.941	RMSEA	0.041
TLI	0.922	SRMR	0.067

Notes: N = 366. df: degrees of freedom. SRMR: standardised root mean square residual. CFI: comparative fit index. TLI: Tucker–Lewis index. RMSEA: root mean square error of approximation. The criteria for a good model fit are: $2.0 \leq \chi^2/df \leq 5.0$, SRMR < 0.08, RMSEA < 0.08, CFI > 0.90, TLI > 0.90.

during the pandemic, while *Headline Daily* only had 74 articles (6.2%). The differences between news outlets were controlled in the following analyses.

Table 3 shows the CFA results of the news theme structure identified by thematic analysis. Although goodness-of-fit measures showed a stable factor structure (χ^2 (degrees of freedom (df) = 80) = 128, $p = 0.001$; comparative fit index (CFI) = 0.941; Tucker–Lewis index (TLI) = 0.922; root mean square error of approximation (RMSEA) = 0.041; standardised root mean square residual (SRMR) = 0.067), the

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Table 4. Standardised parameter estimates and their standard errors of the structural equation model

	Standardised parameter estimate	Standard error	*p*
Latent variables:			
Blaming older people			
Being unhygienic	0.862		
Not following containment policies	0.829	0.156	0.000
Vulnerability of older people:			
At risk of infection	0.718		
Severity of illness	0.699	0.121	0.000
Higher death rate	0.657	0.143	0.000
Helping older people:			
Maintaining physical health	0.777		
Maintaining mental health	0.768	0.172	0.000
Help with daily living	0.715	0.211	0.000
Resources available:			
Free groceries	0.673		
Free masks	0.983	0.364	0.000
Priority resources for older people	0.866	0.298	0.000
COVID-19 risk to society:			
Suspected infections	0.750		
Group infections	0.827	0.174	0.000
Unknown source of infection	0.799	0.133	0.000
Regression:			
Blaming older people:			
Percentage of older people in confirmed infections$_{(t-1)}$	0.077	0.061	0.140
Confirmed infections$_{(t-1)}$	0.418	0.001	0.002
$R_{t(t-1)}$	−0.009	0.012	0.695
COVID-19 deaths$_{(t-1)}$	−0.117	0.024	0.379
Containment and Health Index$_{(t-1)}$	−0.125	0.001	0.399
Pandemic wave (Ref. Wave 1):			
Wave 2	0.136	0.055	0.154
Wave 3	0.214	0.054	0.030
Wave 4	−0.100	0.102	0.402

(*Continued*)

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Table 4. (*Continued.*)

	Standardised parameter estimate	Standard error	*p*
Vulnerability of older people:			
Percentage of older people in confirmed infections$_{(t-1)}$	−0.007	0.126	0.887
Confirmed infections$_{(t-1)}$	0.072	0.002	0.526
$R_{t(t-1)}$	0.002	0.020	0.947
COVID-19 deaths$_{(t-1)}$	0.001	0.041	0.984
Containment and Health Index$_{(t-1)}$	−0.118	0.003	0.150
Pandemic wave (Ref. Wave 1):			
Wave 2	0.236	0.114	0.014
Wave 3	0.456	0.146	<0.001
Wave 4	0.079	0.200	0.481
Helping older people:			
Percentage of older people in confirmed infections$_{(t-1)}$	−0.155	0.094	0.019
Confirmed infections$_{(t-1)}$	−0.166	0.001	0.051
$R_{t(t-1)}$	−0.052	0.015	0.242
COVID-19 deaths$_{(t-1)}$	0.045	0.020	0.740
Containment and Health Index$_{(t-1)}$	0.036	0.002	0.453
Pandemic wave (Ref. Wave 1):			
Wave 2	0.153	0.096	0.272
Wave 3	0.201	0.112	0.240
Wave 4	0.176	0.143	0.206
Resources available:			
Percentage of older people in confirmed infections$_{(t-1)}$	0.034	0.134	0.576
Confirmed infections$_{(t-1)}$	−0.342	0.001	<0.001
$R_{t(t-1)}$	0.017	0.013	0.466
COVID-19 deaths$_{(t-1)}$	−0.012	0.014	0.659
Containment and Health Index$_{(t-1)}$	0.217	0.003	0.005
Pandemic wave (Ref. Wave 1):			
Wave 2	−0.443	0.118	<0.001
Wave 3	−0.605	0.140	<0.001
Wave 4	−0.216	0.141	0.015
COVID-19 risk to society:			

(*Continued*)

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Table 4. (*Continued.*)

	Standardised parameter estimate	Standard error	*p*
Percentage of older people in confirmed infections$_{(t-1)}$	0.045	0.127	0.302
Confirmed infections$_{(t-1)}$	0.176	0.002	0.046
$R_{t(t-1)}$	0.076	0.024	0.022
COVID-19 deaths$_{(t-1)}$	0.108	0.043	0.073
Containment and Health Index$_{(t-1)}$	−0.220	0.002	0.001
Pandemic wave (Ref. Wave 1):			
Wave 2	0.233	0.106	0.002
Wave 3	0.531	0.143	<0.001
Wave 4	0.167	0.215	0.099
Goodness-of-fit (robust):			
χ^2 (df = 184)	272.322	*p*	<0.001
CFI	0.960	RMSEA	0.036
TLI	0.941	SRMR	0.037

Notes: N = 366. Ref.: reference category. df: degrees of freedom. CFI: comparative fit index. TLI: Tucker–Lewis index. SRMR: standardised root mean square residual. RMSEA: root mean square error of approximation. The criteria for a good model fit are: $2.0 \leq \chi^2/df \leq 5.0$, SRMR < 0.08, RMSEA < 0.08, CFI > 0.90, TLI > 0.90.

topic *burden on the medical system* showed low factor loading at 0.151. It was excluded from the subsequent analyses and the model fitness improved (χ^2 (df = 157) = 232.105, $p < 0.001$; CFI = 0.959; TLI = 0.940; RMSEA = 0.036; SRMR = 0.039). Sensitivity analysis by exploratory factor analysis suggested an alternative factor structure largely similar to the proposed structure (Table S2 in the online supplementary material). The proposed news theme structure from qualitative thematic analysis showed superior model fitness in CFA (Table S3 in the online supplementary material).

Table 4 and Figure 2 show the SEM model (χ^2 (df = 184) = 272, $p < 0.001$; CFI = 0.960; TLI = 0.941; RMSEA = 0.036; SRMR = 0.037). Associations between news themes and pandemic progression and the public health response were tested. *Blaming older people* was positively associated with the number of confirmed infections in the previous day (β = 0.418, $p = 0.002$). *Vulnerability of older people* was not associated with any of the independent variables. *COVID-19 risk to general public* was positively associated with confirmed infections$_{(t-1)}$ (β = 0.176, $p = 0.046$), $R_{t(t-1)}$ (β = 0.076, $p = 0.022$) and the Containment and Health Index$_{(t-1)}$ (β = −0.220, $p = 0.001$). *Helping older people* was negatively associated with the percentage of older people in confirmed infections$_{(t-1)}$ (β = −0.155, $p = 0.019$). *Resources available* was negatively associated with confirmed infections$_{(t-1)}$ (β = −0.342, $p < 0.001$) but positively associated with the Containment and Health Index$_{(t-1)}$ (β = 0.217, $p = 0.005$). The emergence of news themes varied across pandemic waves.

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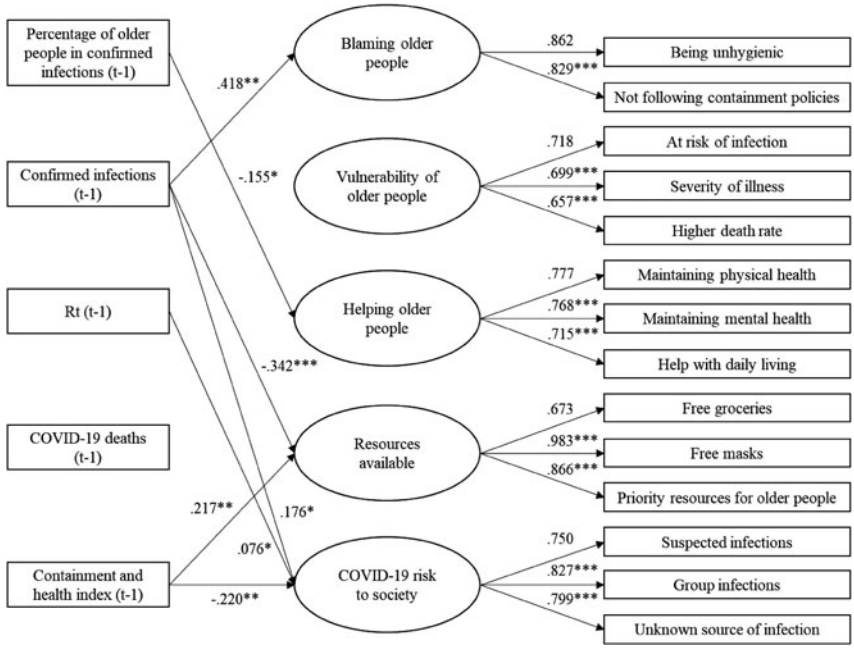

Figure 2. Structural equation model with standardised parameter estimates of significant paths. *Notes*: N = 366. Pandemic waves serve as controlled variables and are not shown. *Significance levels*: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Compared to Wave 1, *blaming older people* was more prevalent in Wave 3 ($\beta = 0.214$, $p = 0.030$). Waves 2 and 3 also saw more *vulnerability of older people* (Wave 2 $\beta = 0.236$, $p = 0.014$; Wave 3 $\beta = 0.456$, $p < 0.001$) and *COVID-19 risk to general public* (Wave 2 $\beta = 0.233$, $p = 0.002$; Wave 3 $\beta = 0.531$, $p < 0.001$). While *helping older people* showed no difference across pandemic waves, *resources available* was more prevalent in Wave 1 (Wave 2 $\beta = -0.443$, $p = <0.001$; Wave 3 $\beta = 0.605$, $p < 0.001$; Wave 4 $\beta = 0.216$, $p = 0.015$). Sensitivity analysis using Poisson regressions to address the non-normal distribution dependent variables yielded similar results with stronger statistical significance (Table S4 in the online supplementary material). The SEM result is presented in this study as it better represents the overall relationships between observed and latent variables.

Discussion

This study identified negative and compassionate ageism themes in Hong Kong news articles about older people during the COVID-19 pandemic and examined their relationships with pandemic parameters and public health responses. It extended the investigation of ageing narratives in relation to pandemic parameters from a binary negative–positive stereotypic valence to topical ageism themes and included the public health response, in addition to pandemic-related incidence and mortality rates as a predictor. We identified four themes elucidating the

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nuances of potential negative and compassionate ageism in mass media narratives, *blaming older people*, *vulnerability of older people, helping older people* and *resources available*. While the *COVID-19 risk to society* theme was generally associated with pandemic progression, the other themes were differently associated with pandemic progression and revealed a double-faced depiction of older people as vulnerable yet counterproductive in preventing the spread of COVID-19. The results are partially consistent with previous findings that negative ageing narratives were not predicted by the incidence and mortality rates of COVID-19 (Ng *et al*., 2021).

Carrying negative ageist narratives, the *vulnerability of older people* theme was not associated with pandemic progression parameters. It suggested that narratives about older people's perceived vulnerability did not reflect the actual challenges they faced in local communities but represented a common belief in early to mid-2020 that COVID-19 is an 'older adult problem' (Fraser *et al*., 2020). From a critical perspective, these news articles conveyed negative ageist stereotypes through a homogenous preconception that older people are physically jaded and hence reliant on assistance (Phelan, 2018), without considering social determinants of health besides age (Rueda, 2021), potentially leading to certain public health decisions and policies based on 'age segregation' (Lichtenstein, 2021). From a practical perspective, however, such crude blanket approaches to the entire ageing population were arguably taken to protect some members of the population from dire harm, especially when chronological age has been evident as a risk factor for the COVID-19 mortality rate (Fletcher, 2021).

Another negative ageist theme, *blaming older people*, explicitly associated age with virus dissemination and pressure on public health systems. This theme responded to the rising associated with community infection numbers but not the percentage of older people in confirmed infections. This suggests mounting fear of COVID-19 propagation led to age-based blaming that was not founded on actual health risks related to older people. Topics of *being unhygienic* and *not following containment policies* described behaviours that might spread the virus. In places like Hong Kong where the infection rate has remained relatively low and possibly attributable to the implementation of stringent measures or robust hygienic self-awareness of citizens, not following COVID-19 regulations by older people is more readily perceived as a health and economic threat to the general public (*e.g. burden on the medical system*). Blaming older people might be a coping strategy adopted by outgroups attempting to manage their apprehension of death through establishing a narrative of 'us against them' (Chonody, 2016).

Our findings suggested that compassionate ageism was implicitly conveyed in news articles. The themes *helping older people* and *resources available* highlighted assistance given to older people while marginalising their voices, resonating with previous studies revealing that media under-reported older people's autonomy and self-care capability (Morgan *et al*., 2021; Zhang and Liu, 2021). The narratives did not necessarily portray older people as physically susceptible to COVID-19 but reduced the cohort to passive recipients needing support with daily living, especially when health containment policies were stricter. The *helping older people* theme comprised practical advice for older people and their families to cope with negative impacts of social isolation on physical and mental health (*i.e. maintaining physical/mental health*), and was negatively associated with the percentage

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of older people in confirmed infections. This indicated a distracted news focus and hence reduced attention towards infection risk or the support older people needed when they were more affected by COVID-19. The *resources available* theme was positively associated with the Containment and Health Index, suggesting that public attention towards the supply of anti-epidemic resources heightened when governmental pandemic policies were enhanced. Meanwhile, coverage of *resources available* lessened with higher overall infection numbers, indicating that the media may not have adequately communicated the material aid on offer for older people when communal COVID-19 dangers were high. As a whole, the news articles that focus on helping behaviours without addressing older people's actual perspectives or needs, nor did the narratives emerged when the pandemic was more severe, which could reinforce paternalism towards pandemic risks and underlying 'benevolent' ageism (Vervaecke and Meisner, 2021). Others could more readily perceive older people as warm yet helpless, leading to misallied pity and biased desires to assist them (Cuddy *et al.*, 2007).

The media has been viewed as influential in moulding cultural perceptions on ageing and has been cited as reinforcing ageist misconceptions of older people (Morgan *et al.*, 2021). This study reveals that among various narratives, older people were often blamed, treated as weak or marginalised and needing assistance when the public faced mounting infections during the pandemic. Given the identification of both negative and compassionate ageism themes, media practitioners should be wary about their communication and hence the intensification of potentially ageist narratives. Older people are typically under-represented within the media environment, and when included, showcased as a homogenous population conforming with particular age-based biases (Loos and Ivan, 2018). This oversimplification of older people distorts society's perceptions of their self-autonomy and competence to sustain personal wellness and neglects individual uniqueness (Wiles and Jayasinha, 2013).

It should be recognised that raising awareness of people who may face a higher risk of the virus was commendable. Nevertheless, the boundary between adequate reporting and stimulating ageism is blurred. While the knowledge on age-related health risks alerts older adults to take corresponding precautions, such news coverage could also reinforce ageist perceptions by highlighting the negative aspects associated with older age (Fletcher, 2021). For example, from a practical perspective, reporting older adults having higher COVID-19 mortality rate may nudge positive health behavioural change. However, from a critical perspective, such reporting could alienate older people by reinforcing the vulnerability brought by chronological age. Ageism in the media can lead to significant adverse repercussions for older people – internally, such as feelings of social exclusion, and externally, such as being devalued by their younger counterparts (Flett and Heisel, 2020; Morgan *et al.*, 2021). Since ageism persists when older people are discriminated against or excluded from cultural participation (Higgs and Gilleard, 2020), a proper media representation is crucial. First, media organisations may create guidelines for age-related reporting, similar to those written for other social groups, despite the differences in operationalisation of the terms. For example, the Associated Press Stylebook (2022) provided guidelines for race-related coverage which define key terms and help journalists to choose the appropriate words to avoid reinforcing

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racism. Another potential solution is to diversify news sources. Not only is the inclusion of the voices of older people in the media landscape essential for sounding the alarm on their actual circumstances, but also for regaining their agency. In some rare cases, the news did demonstrate the empowerment of older adults amid the pandemic. For instance, an article in the supplement section reported a resilient older woman who walked a long way to meet her husband when care facilities were in lockdown. Unfortunately, these coverages were not significant enough to be recognised as a theme in our analysis.

Limitations

This study provides a nuanced understanding of the topical themes of news about older people but should not be generalised for other time periods as it only represented the situation in Hong Kong during 2020. The sample of media articles reflected views in major news outlets. News themes related to older people can be significantly different in alternative media, exhibiting strong ideological leanings. The positionality of the authors should also be accounted for in the progression of news themes. To uncover ageing narratives, the authors organised news themes around depictions of older people and may have underplayed the significance of other news topics. The findings only explain the depiction of the older population under the pandemic; the agenda-setting effect of such news coverage was beyond the scope of this study. For example, whether an ageist narrative was covered on the front page may suggest different levels of salience *vis-à-vis* other news topics. This study also did not differentiate between ageism and age discrimination in the new themes, based on whether implicit notions of 'unjust' are presumed, as suggested by recent research (Cavaliere and Fletcher, 2021). Adopting a fourth age social imaginary approach, which acknowledges the interplay between biological and social aspects of ageing and social categorisations, may allow a more nuanced understanding of discrimination or 'othering' of old age in contemporary society (Higgs and Gilleard, 2020).

Meanwhile, a causal relationship should not be claimed even though the pandemic progression variables were lagged in the SEM analysis. More qualitative evidence from news articles is warranted to investigate the responsiveness of news narratives. Finally, this study was mainly concerned with the representation of older people in the news in response to the pandemic parameters. Future studies should investigate the potential reciprocal relationships between such news narratives and pandemic progression as public health behaviours triggered by media may shape the virus dissemination trajectory. Furthermore, media content is also intertwined with public sentiment, in which news coverage can shape and be shaped by public sentiment. Studies in the future could investigate these potential reciprocal relationships to generate a more comprehensive picture of news coverage responds to both objective and subjective parameters under the pandemic.

Conclusion

This mixed-methods study explored negative and compassionate ageism themes in news coverage and their relationships with pandemic parameters and the public

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health response. Media narratives emphasised the irresponsibility and otherness of older people, who were homogenised as a social group that were physically susceptible or needed assistance and were counterproductive in combating the pandemic. Particularly, quantitative findings suggest the ageism theme structure was associated with pandemic progression parameters. Narratives *blaming older people* were prevalent when the pandemic was progressing, whereas news about *helping older people* was fewer when the ratio of older people in confirmed infections was higher. The potential negative ageist narratives in these themes reflected the public fear about pandemic risks. The narratives highlighting the irresponsibility and otherness of older people were suggesting one of the ways to rationalise the potential causes of disease transmission. Meanwhile, the news coverage on helping older people was not responding to pandemic developments and homogenised the cohort as a rigid social group that was physically susceptible or needed assistance. A news reporting guideline and better representation of older people in the pandemic is warranted to address age-related issues accurately.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S0144686X22001490.

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Conflict of interest. The authors declare no conflicts of interest.

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References

Associated Press Stylebook (2022) *Race-related Coverage*. Available at https://www.apstylebook.com/race-related-coverage.

Ayalon L and Tesch-Römer C (2017) Taking a closer look at ageism: self- and other-directed ageist attitudes and discrimination. *European Journal of Ageing* **14**, 1–4.

Ayalon L, Chasteen A, Diehl M, Levy BR, Neupert SD, Rothermund K, Tesch-Römer C and Wahl H-W (2021) Aging in times of the COVID-19 pandemic: avoiding ageism and fostering intergenerational solidarity. *Journals of Gerontology: Series B* **76**, e49–e52.

Berridge C and Hooyman N (2020) The consequences of ageist language are upon us. *Journal of Gerontological Social Work* **63**, 508–512.

Binstock RH (1983) The aged as scapegoat. *The Gerontologist* **23**, 136–143.

Binstock RH (2010) From compassionate ageism to intergenerational conflict? *The Gerontologist* **50**, 574–585.

Butler RN (1969) Age-ism: another form of bigotry. *The Gerontologist* **9**, 243–246.

Cavaliere G and Fletcher JR (2021) Age-discriminated IVF access and evidence-based ageism: is there a better way? *Science, Technology, and Human Values* **47**, 986–1010.

Centre for Health Protection (2021) *Archives of Latest Situation of Cases of COVID-19*. Available online at https://www.chp.gov.hk/en/features/102997.html [Accessed on15 April 2021].

Chasteen AL and Cary LA (2015) Age stereotypes and age stigma: connections to research on subjective aging. *Annual Review of Gerontology and Geriatrics* **35**, 99–119.

Chonody JM (2016) Positive and negative ageism. *Affilia* **31**, 207–218.

Cuddy AJC and Fiske ST (2002) Doddering but dear: process, content, and function in stereotyping of older persons. In Nelson TD (ed). *Ageism: Stereotyping and Prejudice Against Older Persons*. Cambridge, MA: MIT Press, pp. 3–26.

Cuddy AJC, Fiske ST and Glick P (2007) The BIAS map: behaviors from intergroup affect and stereotypes. *Journal of Personality and Social Psychology* **92**, 631–648.

Fingerman KL and Pillemer K (2021) Continuity and changes in attitudes, health care, and caregiving for older adults during the COVID-19 pandemic. *Journals of Gerontology: Series B* **76**, e187–e189.

Finney SJ and DiStefano C (2006) Non-normal and categorical data in structural equation modeling. In Hancock GR and Mueller RO (eds). *Structural Equation Modeling: A Second Course*. Charlotte, NC: Information Age Publishing, pp. 439–492.

Fletcher JR (2021) Chronological quarantine and ageism: COVID-19 and gerontology's relationship with age categorisation. *Ageing & Society* **41**, 479–492.

Flett GL and Heisel MJ (2020) Aging and feeling valued versus expendable during the COVID-19 pandemic and beyond: a review and commentary of why mattering is fundamental to the health and well-being of older adults. *International Journal of Mental Health and Addiction* **19**, 2443–2469.

Foley K, Ward P and McNaughton D (2019) Innovating qualitative framing analysis for purposes of media analysis within public health inquiry. *Qualitative Health Research* **29**, 1810–1822.

Fraser S, Lagacé M, Bongué B, Ndeye N, Guyot J, Bechard L, Garcia L, Taler V, Adam S, Beaulieu M, Bergeron CD, Boudjemadi V, Desmette D, Donizzetti AR, Éthier S, Garon S, Gillis M, Levasseur M, Lortie-Lussier M, Marier P, Robitaille A, Sawchuk K, Lafontaine C and Tougas F (2020) Ageism and COVID-19: what does our society's response say about us? *Age and Ageing* **49**, 692–695.

Guest G, MacQueen K and Namey E (2012*a*) Planning and preparing the analysis. In *Applied Thematic Analysis*. Thousand Oaks, CA: Sage, pp. 21–48.

Guest G, MacQueen K and Namey E (2012*b*) Themes and codes. In *Applied Thematic Analysis*. Thousand Oaks, CA: Sage, pp. 49–78.

Hale T, Angrist N, Goldszmidt R, Kira B, Petherick A, Phillips T, Webster S, Cameron-Blake E, Hallas L, Majumdar S and Tatlow H (2021) A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour* **5**, 529–538.

Harraway V and Wong JS (2021) Hypothetical discussion of migrant crime: an examination of news content from Canada, the UK, and the US. *Journalism Studies* **22**, 1259–1278.

Hernández M and Madrid-Morales D (2020) Diversifying voice, democratizing the news? A content analysis of citizen news sources in Spanish-language international broadcasting. *Journalism Studies* **21**, 1076–1092.

Higgs P and Gilleard C (2020) The ideology of ageism *versus* the social imaginary of the fourth age: two differing approaches to the negative contexts of old age. *Ageing & Society* **40**, 1617–1630.

Huang Y and Song Y (2018) *The Evolving Landscape of Media and Communication in Hong Kong*. Hong Kong: City University of Hong Kong Press.

Iversen TN, Larsen L and Solem PE (2009) A conceptual analysis of ageism. *Nordic Psychology* **61**, 4–22.

Koskinen S, Salminen L and Leino-Kilpi H (2014) Media portrayal of older people as illustrated in Finnish newspapers. *International Journal of Qualitative Studies on Health and Well-being* **9**, 25304.

Kummervold PE, Schulz WS, Smout E, Fernandez-Luque L and Larson HJ (2017) Controversial Ebola vaccine trials in Ghana: a thematic analysis of critiques and rebuttals in digital news. *BMC Public Health* **17**, 642.

Leung HM (2020) 中大調查：香港01讀者份額列純網上媒體第一 七成港人手機看新聞 [*CUHK Survey: HK01 Reader Share Ranks No. 1 in Pure Online Media, 70% of Hong Kong People Watch News on Mobile Phones*]. Available at https://www.hk01.com/社會新聞/465011/中大調查-香港01讀者份額列純網上媒體第一-七成港人手機看新聞.

Leung K, Wu JT and Leung GM (2021) Real-time tracking and prediction of COVID-19 infection using digital proxies of population mobility and mixing. *Nature Communications* **12**, 1501. https://doi.org/10.1038/s41467-021-21776-2.

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* **76**, e206–e212.

Liu T, Peng M-M, Au WSH, Wong FHC, Kwok W-W, Yin J, Lum TYS and Wong GHY (2022) Depression risk among community-dwelling older people is associated with perceived COVID-19

infection risk: effects of news report latency and focusing on number of infected cases. *Aging and Mental Health*. Available online doi:10.1080/13607863.2022.2045562.

Loos E and Ivan L (2018) Visual ageism in the media. In Ayalon L and Tesch-Römer C (eds). *Contemporary Perspectives on Ageism*. Cham: Springer, pp. 163–176.

Lum T, Shi C, Wong G and Wong K (2020) COVID-19 and long-term care policy for older people in Hong Kong. *Journal of Aging and Social Policy* **32**, 373–379.

Marier P and Revelli M (2017) Compassionate Canadians and conflictual Americans? Portrayals of ageism in liberal and conservative media. *Ageing & Society* **37**, 1632–1653.

Meisner BA (2012) A meta-analysis of positive and negative age stereotype priming effects on behavior among older adults. *Journals of Gerontology: Series B* **67**, 13–17.

Meisner BA (2021) Are you ok, boomer? Intensification of ageism and intergenerational tensions on social media amid COVID-19. *Leisure Sciences* **43**, 56–61.

Miller VJ, Fields NL, Anderson KA, Kusmaul N and Maxwell C (2021) Nursing home social workers' perceptions of preparedness and coping for COVID-19. *Journals of Gerontology: Series B* **76**, e219–e224.

Morgan T, Wiles J, Williams L and Gott M (2021) COVID-19 and the portrayal of older people in New Zealand news media. *Journal of the Royal Society of New Zealand* **51**, S127–S142.

Ng R, Chow TYJ and Yang W (2021) Culture linked to increasing ageism during COVID-19: evidence from a 10-billion-word corpus across 20 countries. *Journals of Gerontology: Series B* **76**, 1808–1816.

Officer A and de la Fuente-Núñez V (2018) A global campaign to combat ageism. *Bulletin of the World Health Organization* **96**, 295–296.

Phelan A (2018) Researching ageism through discourse. In Ayalon L and Tesch-Römer C (eds). *Contemporary Perspectives on Ageism*. Cham: Springer, pp. 549–564.

Radio Television Hong Kong (2020a) HK hit by "second wave" of virus infections. https://web.archive.org/web/20200403201518/https://news.rthk.hk/rthk/en/component/k2/1514791-20200316.htm.

Radio Television Hong Kong (2020b) Resume working from home and close bars, says expert. https://news.rthk.hk/rthk/en/component/k2/1561390-20201123.htm.

Reynolds L (2020) The COVID-19 pandemic exposes limited understanding of ageism. *Journal of Aging and Social Policy* **32**, 499–505.

Rosseel Y (2012) Lavaan: an R package for structural equation modeling. *Journal of Statistical Software* **48**, 1–36.

Rueda J (2021) Ageism in the COVID-19 pandemic: age-based discrimination in triage decisions and beyond. *History and Philosophy of the Life Sciences* **43**, 91.

Satorra A and Bentler PM (1994) Corrections to test statistics and standard errors in covariance structure analysis. In von Eye A and Clogg CC (eds). *Latent Variables Analysis: Applications for Developmental Research*. Thousand Oaks, CA: Sage, pp. 399–419.

Shih T-J, Wijaya R and Brossard D (2008) Media coverage of public health epidemics: linking framing and issue attention cycle toward an integrated theory of print news coverage of epidemics. *Mass Communication and Society* **11**, 141–160.

South China Morning Post (2020) Hong Kong battling third wave of coronavirus infections as city confirms 14 new cases. https://www.scmp.com/news/hong-kong/health-environment/article/3092174/coronavirus-third-wave-fears-escalate-hong-kong.

Swift HJ and Chasteen AL (2021) Ageism in the time of COVID-19. *Group Processes and Intergroup Relations* **24**, 246–252.

Thomas T, Wilson A, Tonkin E, Miller ER and Ward PR (2020) How the media places responsibility for the COVID-19 pandemic – an Australian media analysis. *Frontiers in Public Health* **8**, 483.

Vervaecke D and Meisner BA (2021) Caremongering and assumptions of need: the spread of compassionate ageism during COVID-19. *The Gerontologist* **61**, 159–165.

Wiles JL and Jayasinha R (2013) Care for place: the contributions older people make to their communities. *Journal of Aging Studies* **27**, 93–101.

Wong FHC, Liu T, Leung DKY, Zhang AY, Au WSH, Kwok W-W, Shum AKY, Wong GHY and Lum TYS (2021) Consuming information related to COVID-19 on social media among older adults and its association with anxiety, social trust in information, and COVID-safe behaviors: cross-sectional telephone survey. *Journal of Medical Internet Research* **23**, e26570.

Wong FHC, Leung DKY, Wong ELY, Liu T, Lu S, Chan OF, Wong GHY and Lum TYS (2022) The moderating role of community capacity for age-friendly communication in mitigating anxiety of older adults during the COVID-19 infodemic: cross-sectional survey. *JMIR Infodemiology* **2**, e33029.

Wongpakaran N, Wongpakaran T, Wedding D and Gwet KL (2013) A comparison of Cohen's Kappa and Gwet's AC1 when calculating inter-rater reliability coefficients: a study conducted with personality disorder samples. *BMC Medical Research Methodology* **13**, 61.

Xiang X, Lu X, Halavanau A, Xue J, Sun Y, Lai PHL and 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. *Journals of Gerontology: Series B* **76**, e190–e200.

Zhang J and Liu X (2021) Media representation of older people's vulnerability during the COVID-19 pandemic in China. *European Journal of Ageing* **18**, 149–158.

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