

Climate Change and Aging: A systematic Review

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Abstract

In this systematic review, we analyze the literature through Web of Science's SCI-Expanded containing the words "aging" or "aged" and "climate change" and receiving at least four citations per year since publication ($n = 607$ articles). After discarding irrelevant articles (ie, "aging infrastructure"), the 176 remaining articles overwhelmingly (61%) fall into two categories: temperature/mortality ($n = 85$; 48%) and temperature/morbidity ($n = 22$; 12%). However, many other important climate topics related to aging remain underdeveloped. Notably, adaptation ($n = 8$; 6%), vulnerability ($n = 5$; 4%), emissions/mitigation ($n = 4$; 3%), drought and mortality ($n = 1$; 0.7%), food security ($n = 1$; 0.7%), and climate perceptions ($n = 0$) remain understudied. Furthermore, more than half of the studies were conducted in the United States ($n = 31$; 18%), China ($n = 35$; 20%), Globally ($n = 20$; 11%), and Australia ($n = 12$; 7%), suggesting a paucity of information in the Global South ($n = 11$) where climate impacts will be greatest. There were more studies specifically on Spain ($n = 5$) than specifically on the entire African continent ($n = 4$). Finally, 18 articles (13%) offered projections in some form, most to the middle of the century. Gerontologists and aging scientists should look beyond the relationship between heat and mortality to offer a more holistic view of aging and climate change. [Sentence about Geography]. Prospective analyses, as opposed to retrospective, could shed additional light on the link between aging and climate change.

Keywords: 3 to 6 keywords, that do not appear in the title

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1 Introduction

Two seemingly immutable trends will crash head-on during this century: the global populace will continue to age and global climate change impacts will worsen as the century progresses. By the end of the century, when climate change impacts will be considerably more intense than today, the Global populace exposed to these impacts will be decidedly older, amplifying climate change impacts. Many of the anticipated impacts from climate change disproportionately impact the elderly versus younger, more vigorous age groups making these two trends particularly potent when taken together.

Para: Focuses on Climate Change

Para: Focuses on Aging processes

Para: Gap bringing together (Climate Change and Aging)

Para: Research Questions with brief methods

2 Methods and Materials

We use a systematic literature review to assess the literature on climate change and aging.

2.1 Document selection

We used a keyword search on Clarivate’s Web of Science-expanded search engine using the Boolean operator “TS=(aging OR aged OR elderly) AND TS=(“climate change”).” We selected Web of Science due to its comprehensive scientific coverage of peer-reviewed literature. We conducted the search on September 7, 2022. This search retrieved an initial universe of 16,828 articles. We filtered these results to include articles of relatively high impact, defined subjectively as those articles with at least four citations per year ($n = 3,852$). To further isolate those articles pertaining to aging and climate change, we further restricted our search to those articles containing the words (aging or aged or elderly) in the abstract ($n = 607$).

We then reviewed these articles for relevance, discarding articles concerning “aging infrastructure” or “aging forests” to isolate articles on human aging and climate change. This yielded a total of 176 articles included in this systematic review (**Figure 1**).

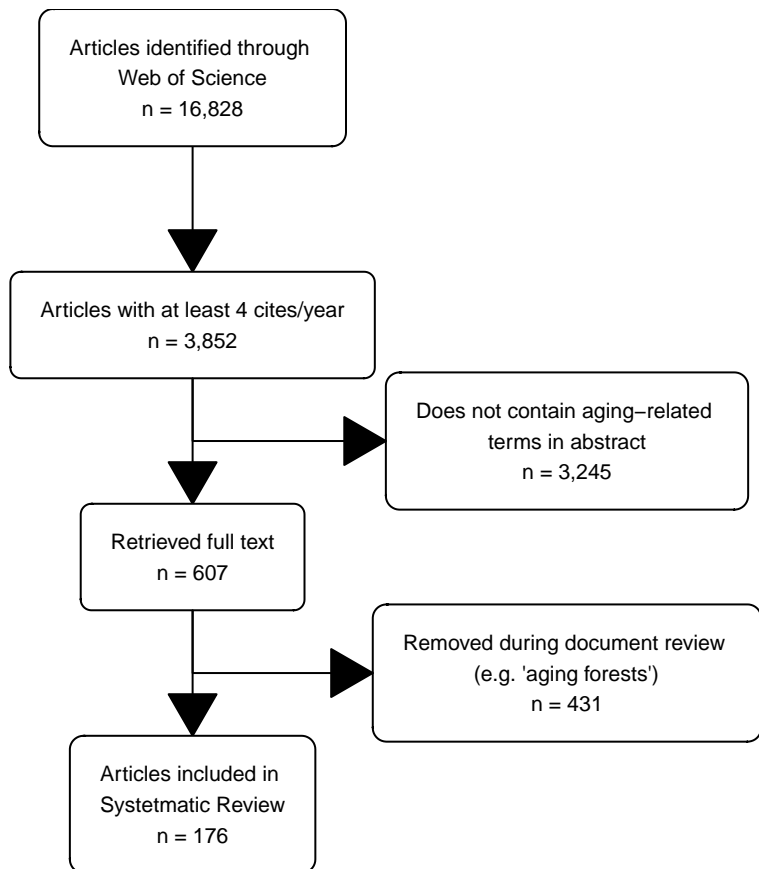


Figure 1: PRISMA Flow Diagram.

3 Data Availability

The underlying computer code and data that support the findings of this study are available in the Supplementary Material and have been deposited in Zenodo (DOI).