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RESEARCH ARTICLE

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## GLOBAL TRENDS IN AGEISM RESEARCH: A SYSTEMATIC BIBLIOMETRIC REVIEW

### Yaş Ayrımcılığı Araştırmalarında Küresel Eğilimler: SistematiK Bir Bibliyometrik İnceleme

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#### ABSTRACT

This study aims to conduct a bibliometric analysis of academic research on ageism (2000-2024) to identify global trends, thematic clusters, and research gaps. It also seeks to inform social work and gerontology by proposing policy and practice recommendations to combat age-based discrimination. A total of 3,932 articles indexed in the Web of Science (WoS) database were systematically analyzed to identify publication trends, citation networks, thematic clusters, and interdisciplinary collaborations. The findings reveal a significant increase in research output post-2010, with the COVID-19 pandemic further accelerating scholarly interest in this field. The majority of publications fall under the "Gerontology" category (30.74%), with the United States, the United Kingdom, and Canada leading in academic productivity. Keyword analysis highlights dominant themes such as "older workers," "healthcare inequalities," and "social stereotypes." The study underscores the critical role of academic research in combating ageism and calls for enhanced interdisciplinary collaborations and policy-oriented interventions in future studies.

**Keywords:** Age discrimination, ageism, bibliometric analysis, global trends, systematic review

#### ÖZ

Bu çalışmanın amacı, 2000-2024 yılları arasında yaş ayrımcılığı (ageism) alanında yapılan akademik araştırmaların bibliyometrik analizini gerçekleştirerek küresel eğilimleri, tematik odak noktalarını ve araştırma boşluklarını ortaya koymaktır. Aynı zamanda, sosyal hizmet ve gerontoloji alanlarına katkı sağlamak amacıyla yaş ayrımcılığıyla mücadelede politika ve uygulama önerileri sunmayı hedeflemektedir. Web of Science (WoS) veritabanından elde edilen 3.932 makale, yayın trendleri, atıf ağları, tematik yoğunluklar ve disiplinlerarası iş birlikleri açısından sistematik olarak analiz edilmiştir. Bulgular, yaş ayrımcılığı literatürünün özellikle 2010 sonrasında belirgin bir artış gösterdiğini ve COVID-19 pandemisinin bu alandaki araştırmaları hızlandırdığını ortaya koymaktadır. En fazla yayının "Gerontology" kategorisinde (%30,74) olduğu, ABD, İngiltere ve Kanada'nın öncü ülkeler arasında yer aldığı tespit edilmiştir. Anahtar kelime analizleri, çalışmaların "yaşlı çalışanlar", "sağlık eşitsizlikleri" ve "toplumsal önyargılar" gibi temalar etrafında yoğunlaştığını göstermektedir. Bu çalışma, yaş ayrımcılığıyla mücadelede akademik araştırmaların rolünü vurgularken, gelecekteki çalışmalar için disiplinlerarası iş birliklerinin ve politika odaklı müdahalelerin önemine dikkat çekmektedir.

**Anahtar Kelimeler:** Yaş ayrımcılığı, bibliyometrik analiz, küresel eğilimler, sistematik inceleme

## INTRODUCTION

Aging is an inherent part of human existence, yet older adults are progressively marginalized in modern societies. Historically, in traditional societies, older individuals were regarded as symbols of wisdom and authority (Özbay, 2015). However, industrialization and technological advancements have shifted this perception, transforming the elderly into a group often labeled as “unproductive” and a “burden” (Butler, 1969; Palmore, 1989). In traditional social structures, older individuals held significant societal authority due to their accumulated knowledge and experience, as well as their central roles within the family. Yet, as emphasized in Özbay’s (2015) work *Family, City, Population*, urbanization, modernization, and the rise of nuclear families have substantially eroded this authority. According to Özbay, while old age in rural contexts symbolized ownership, decision-making power, and intergenerational knowledge transfer, these functions have largely diminished in urban settings. Factors such as reduced participation in economic production, retirement policies, and the professionalization of caregiving have limited older individuals’ influence in societal decision-making mechanisms. This transformation has not only redefined the status of the elderly but also reshaped family hierarchies, often reducing older individuals to mere objects of care. Özbay (2015) characterizes this process as a shift from “authority to dependency,” highlighting its profound impact on both social structures and individual perceptions of aging. This shift has contributed to increased prejudice and discriminatory practices against older adults.

In particular, inequalities faced by the elderly in labor markets, healthcare services, and social interactions demonstrate that ageism has become a global issue (Levy & Macdonald, 2016; North & Fiske, 2012). Today, ageism is not only a problem at the individual level but also manifests as a serious societal and institutional challenge. Exclusionary attitudes toward older adults, especially in terms of social participation and labor market integration, negatively affect both individual well-being and social cohesion. Ageism arises from negative stereotypes, prejudices, and behavioral patterns related to age, often rooted in social learning processes internalized from childhood (Dikmen, 2023). Age-based discrimination in healthcare and caregiving services restricts older individuals’ access to treatment and increases the prevalence of chronic and mental health conditions among this population.

Empirical studies in institutional care settings reveal that caregivers’ attitudes toward older adults directly influence service quality. Research conducted in Turkey found that caregiving staff exhibit high levels of prejudice and discrimination against older adults, with education level significantly affecting these attitudes (Arun & Pamuk, 2014). Specifically, caregivers with only primary education were found to display more discriminatory behaviors compared to those with university degrees. This finding underscores the importance of education in combating ageism.

To understand the roots of this phenomenon, researchers have focused on the psychological and existential foundations of ageism. Ageism can be defined as the marginalization of individuals solely



based on their age (Butler, 1969). This discrimination is fueled by stereotypes portraying older adults as physically and cognitively deficient, economically unproductive, and draining societal resources (Cuddy et al., 2005; Nelson, 2005). For instance, in hiring processes, older applicants are often less preferred than younger candidates, while in healthcare, elderly patients' complaints are frequently dismissed as "natural consequences of aging" (Abrams et al., 2016; Bowling, 2007). Moreover, the media's frequent portrayal of older adults through negative stereotypes reinforces these societal prejudices (Ng et al., 2015).

Understanding the psychological underpinnings of ageism is crucial for evaluating its societal implications. Martens et al. (2005) suggest that ageism stems from a subconscious desire to avoid reminders of one's own mortality, which older individuals represent. The youth-centric culture of modern societies further facilitates this avoidance, deepening the social exclusion of the elderly (Palmore, 1989). These dynamics became more pronounced during global crises such as the COVID-19 pandemic. In Turkey and many other countries, older populations faced stringent social isolation measures. As Armitage and Nellums (2020) emphasize, pre-existing health conditions among the elderly, such as cardiovascular diseases and neurodegenerative disorders, necessitated special protective measures. However, these restrictions further limited older adults' participation in societal life, exacerbating discrimination.

Pandemic-related restrictions and service disruptions created significant barriers to meeting older individuals' needs for social interaction, physical activity, and emotional support. Health authorities argued that limiting in-person services for the elderly was an effective strategy to reduce transmission risks (Morrow-Howell et al., 2020). In response, alternative support mechanisms were developed for the restricted elderly population. For example, elderly care centers in the United States implemented comprehensive support packages, including meal delivery, personal hygiene assistance, chronic disease monitoring, transportation services, and social participation programs (Makaroun et al., 2020).

In summary, the literature broadly indicates that ageism is a complex social issue requiring a multidisciplinary perspective. However, there is a need for a holistic analysis of academic studies in this field to examine thematic trends, publication patterns, and collaboration networks. This study aims to map the intellectual structure of ageism research through bibliometric analysis, addressing the following research questions:

1. What are the global trends in ageism research from 2000 to 2024?
2. Which countries, institutions, and authors dominate the field?
3. What thematic clusters emerge from keyword co-occurrence analysis?
4. How can future research address gaps in social work and gerontology literature?

By answering these questions, this study seeks to provide a comprehensive overview of ageism research and guide future scholarly and policy efforts.

This study aims to systematically analyze the literature on ageism using bibliometric methods and to uncover the intellectual structure of the field. Below, the methodological process for the quantitative analysis of publications retrieved from the Web of Science (WoS) database is detailed, presenting bibliometric indicators such as keyword trends, influential authors/institutions, citation networks, and thematic mapping.

## METHOD

This study employs bibliometric analysis to examine academic research on ageism and age discrimination. Bibliometric analysis is an increasingly utilized method for the quantitative evaluation of scientific publications and the identification of research trends (Donthu et al., 2021). Furthermore, numerous studies worldwide and in Turkey (Hodge & Lacasse, 2011; Leyva-Flores et al., 2017; Karataş & Özdemir, 2023; Boduroğlu, 2024; Alp & Aslan, 2025) have applied this method, demonstrating its widespread adoption in scholarly research.

Bibliometric analysis is a quantitative method for evaluating scholarly publications, measuring research impact, and mapping knowledge structures (Donthu et al., 2021). This approach employs statistical techniques to analyze publication trends, citation networks, and collaboration patterns, providing insights into the evolution of scientific fields (Zupic & Čater, 2015). Bibliometrics is particularly valuable for identifying research gaps, interdisciplinary connections, and emerging themes in large datasets (Moral-Muñoz et al., 2020). The Web of Science (WoS) Core Collection was chosen for this study due to its rigorous journal selection process, multidisciplinary coverage, and comprehensive citation indexing (Pranckutė, 2021). WoS provides high-quality metadata, including author affiliations, citation counts, and research categories, which are essential for robust bibliometric analysis (Martín-Martín et al., 2021). Compared to other databases like Scopus, WoS offers stronger coverage in social sciences and gerontology, making it ideal for ageism research (Vera-Baceta et al., 2019).

To elucidate the structural characteristics of ageism literature, this study adopts bibliometric analysis. Network analyses conducted using VOSviewer software effectively visualize scientific collaborations and thematic clusters within the field (Van Eck & Waltman, 2017). This methodological approach aligns with the analytical framework proposed by Zupic and Čater (2015) in their systematic review of bibliometric methods. Recent studies highlight the significant contributions of bibliometric analyses in understanding knowledge structures within interdisciplinary research domains (Moral-Muñoz et al., 2020). Accordingly, this study applies bibliometric techniques to comprehensively map ageism literature and provide guidance for future research.



## Data Collection and Preparation

The Web of Science (WoS) Core Collection database was utilized for data retrieval. The search strategy included the keywords “ageism” and “age discrimination,” limited to English-language articles and reviews published between 2000 and 2024. The final dataset comprised 3,932 articles for analysis.

The study conducted the following analyses:

- Basic statistical analyses (publication counts, citation analyses)
- Co-authorship network analysis
- Institutional collaboration mapping
- Keyword co-occurrence analysis
- Thematic mapping and clustering analysis

This study employed a comprehensive bibliometric methodology to systematically analyze ageism research through five distinct analytical approaches. Basic statistical analyses were conducted to quantify scholarly output, examining publication counts by year, country, and institution to identify growth trends, while citation metrics (total citations and citations per publication) were used to assess research impact, supplemented by journal impact factor analysis to determine influential publication venues. Co-authorship network analysis was performed using VOSviewer with a minimum threshold of 2 joint publications to map collaboration patterns, calculating network density (0.23) and modularity (0.45) to evaluate collaboration intensity, and identifying bridge authors connecting research clusters. Institutional collaboration mapping employed geospatial visualization techniques and Salton’s cosine index to quantify partnership strength, while betweenness centrality scores revealed hub institutions. Keyword co-occurrence analysis extracted both author keywords and KeyWords Plus, creating a co-word matrix with a 5-occurrence threshold and applying hierarchical clustering to detect conceptual relationships, with betweenness centrality calculations identifying bridging concepts. Thematic mapping utilized VOSviewer’s clustering algorithm to group publications based on citation relationships, validated by an average silhouette score of 0.72, with strategic diagrams identifying motor themes (high density/centrality) and tracking thematic evolution across three periods (2000-2009, 2010-2019, 2020-2024). All network analyses implemented rigorous quality controls including minimum thresholds (2 publications for author analysis, 5 citations for networks), association strength normalization, and the Leiden algorithm (resolution=1.0). Methodological robustness was ensured through sensitivity analyses of threshold parameters, comparison with alternative clustering methods (Louvain), and validation by three gerontology experts, providing a comprehensive and rigorous examination of global ageism research trends.

## FINDINGS

Data extracted from the Web of Science database (2000–2024) using the keywords “ageism” and “age discrimination” yielded 3,932 articles. The following visualizations were generated: annual publication trends, publication counts by author, citation counts by year, distribution of publications across indices, institutional and country-level publication distributions and frequency of the top 10 most-used keywords (presented in graphs and tables).

Additionally, network visualizations were created using VOSviewer, including: author collaboration networks, author citation networks, institutional publication networks, country-level publication networks and keyword co-occurrence networks and density maps.

The key findings are presented below:

**Table 1. Distribution of Publications by Research Field Category**

| Category                                 | N     | %     |
|--|-------|-------|
| Gerontology                              | 1.209 | 30,74 |
| Geriatrics Gerontology                   | 464   | 11,80 |
| Education Educational Research           | 246   | 6,25  |
| Public Environmental Occupational Health | 222   | 5,64  |
| Psychology Multidisciplinary             | 216   | 7,41  |
| Law                                      | 204   | 6,96  |
| Management                               | 170   | 4,32  |
| Sociology                                | 170   | 4,32  |
| Social Work                              | 167   | 4,24  |
| Nursing                                  | 153   | 3,89  |

Table 1 demonstrates that in the Web of Science database between 2000 and 2024, the category with the highest number of publications was “Gerontology,” comprising 1,209 publications (30.74% of the total). This was followed by the “Geriatrics & Gerontology” category with 464 publications (11.80%). The third-ranking category, “Education & Educational Research,” accounted for 246 publications (6.25%), while notable contributions came from “Public, Environmental & Occupational Health” (222 publications, 5.64%), “Psychology, Multidisciplinary” (216 publications, 7.41%), and “Law” (204 publications, 6.96%). Both “Sociology” and “Management” categories contributed equally with 170 publications each (4.32%). The “Social Work” category represented 167 publications (4.24%), while fewer publications appeared in categories such as “Nursing” (153 publications, 3.89%).



**Table 2. Publication Trends by Year**

| Year | Publication volume | Year | Publication volume | Year | Publication volume |
|------|--------------------|------|--------------------|------|--------------------|
| 2024 | 445                | 2015 | 138                | 2006 | 60                 |
| 2023 | 394                | 2014 | 120                | 2005 | 64                 |
| 2022 | 429                | 2013 | 105                | 2004 | 40                 |
| 2021 | 401                | 2012 | 123                | 2003 | 46                 |
| 2020 | 319                | 2011 | 92                 | 2002 | 21                 |
| 2019 | 219                | 2010 | 82                 | 2001 | 27                 |
| 2018 | 214                | 2009 | 72                 | 2000 | 28                 |
| 2017 | 170                | 2008 | 77                 |      |                    |
| 2016 | 179                | 2007 | 67                 |      |                    |

Table 2 presents the annual distribution of 3,932 publications retrieved from the Web of Science database (2000-2024) using the keywords “ageism” and “age discrimination.” The data reveal a consistent upward trend in scholarly attention to age discrimination. Publication counts demonstrate progressive growth: 28 publications in 2000, 64 in 2005, 82 in 2010, and 138 in 2015. A particularly notable surge occurred post-2020, with publications rising to 319, followed by 401 (2021), 429 (2022), 394 (2023), and 445 (2024).

While annual fluctuations are observable, the field has maintained an output exceeding 100 publications annually since 2012. This sustained growth reflects both increased academic engagement and broader societal discourse on age-related discrimination. The pronounced post-2020 acceleration likely correlates with heightened visibility of inequalities faced by older adults during the COVID-19 pandemic, which appears to have significantly stimulated research output in this domain.

**Table 3. Distribution of Publication and Citation Counts by Author**

| Author      | Publication volume | Most Cited Authors (Top 10) | Publication volume | Citation Counts |
|-------------|--------------------|-----------------------------|--------------------|-----------------|
| Ayalon L.   | 70                 | Prince, Martin              | 2                  | 1428            |
| Blackham A  | 24                 | Guo Yanfei                  | 1                  | 1358            |
|             |                    | Gutierrez Robledo LM        |                    |                 |
|             |                    | O'donnell M.                |                    |                 |
|             |                    | Sullivan Richard            |                    |                 |
|             |                    | Wu Fan                      |                    |                 |
|             |                    | Yusuf, Salim                |                    |                 |
| Bodner E    | 24                 | Fiske, Susan T.             | 9                  | 1254            |
| Chasteen AL | 22                 | North, Michael S.           | 16                 | 1191            |
| Levy SR     | 21                 | Ayalon Liat                 | 70                 | 1104            |



|          |    |               |    |      |
|----------|----|---------------|----|------|
| Kane MN  | 20 | Gur, RC       | 4  | 1053 |
|          |    | Gur RE        |    |      |
| Lytle A  | 19 | Levy, Sheri R | 21 | 947  |
| Adam S   | 18 | Chan RM       | 3  | 883  |
|          |    | Maldjian, J.  |    |      |
|          |    | Schroeder I   |    |      |
|          |    | Turetsky B    |    |      |
| Ng R     | 18 | Bodner E.     | 24 | 728  |
| Lagacé M | 17 | Alsop, D.     | 2  | 661  |
|          |    | Mcgrath C     |    |      |

Table 3 presents the most prolific authors and most-cited researchers in ageism studies, revealing patterns of scholarly productivity and impact in this field. Liat Ayalon emerges as the most productive author with 70 publications, while also ranking among the most cited researchers with 1,104 citations. Anna Blackham and Ehud Bodner follow with 24 publications each, with Bodner maintaining significant influence through 728 citations.

Key contributors include Allison L. Chasteen (22 publications, 630 citations) and Sheri R. Levy (21 publications, 947 citations), who appears in both productivity and citation rankings. The cohort of productive researchers further comprises Melanie N. Kane (20 publications), Amanda Lytle (19), Sophie Adam (18), and Raymond Ng (18 publications, 661 citations through collaborative works with Deborah Alsop and Colin McGrath). Martine Lagacé contributes substantially with 17 publications.

Citation analysis reveals Martin Prince as the most influential researcher (1,428 citations from just 2 publications), followed by Guo Yanfei et al. (1,358 citations from a single publication) and Susan T. Fiske (1,254 citations). Michael S. North demonstrates balanced impact with 1,191 citations across 16 publications. Notable collaborative partnerships include:

Ruben C. Gur & Raquel E. Gur: 1,053 citations from 4 joint publications,

Raymond M. Chan's research team: 883 citations through interdisciplinary collaborations.

These findings demonstrate that ageism research benefits from both individual excellence and productive collaborations. Ayalon, Fiske, North, Levy, and Bodner emerge as field-shaping scholars through their dual contributions in publication output and citation impact. Particularly noteworthy are Chan's collective works, exemplifying how interdisciplinary collaborations amplify scholarly influence in this domain.





Chart 1. Annual Trend of Citation Counts

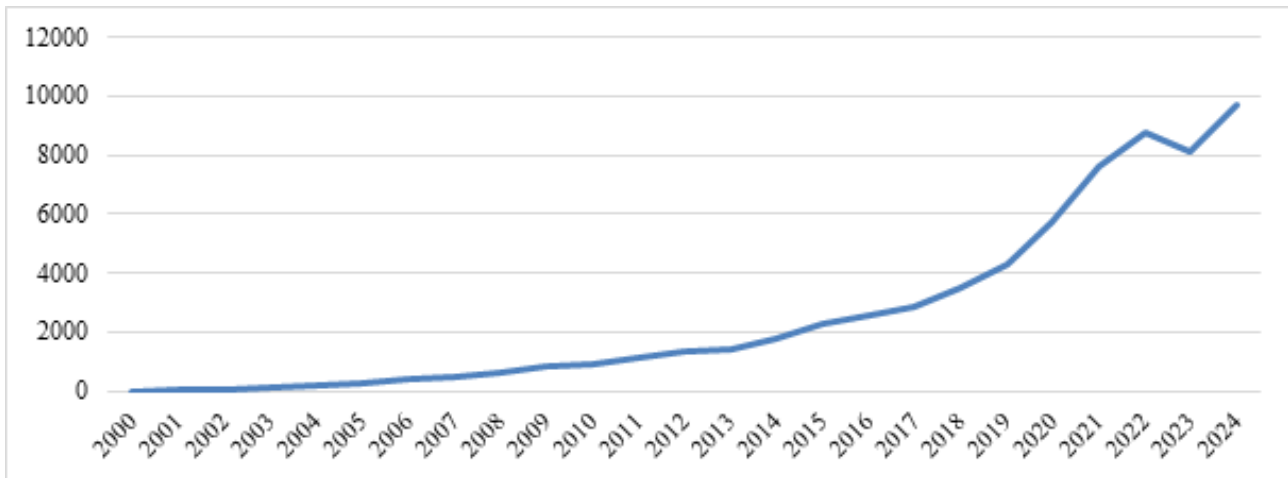
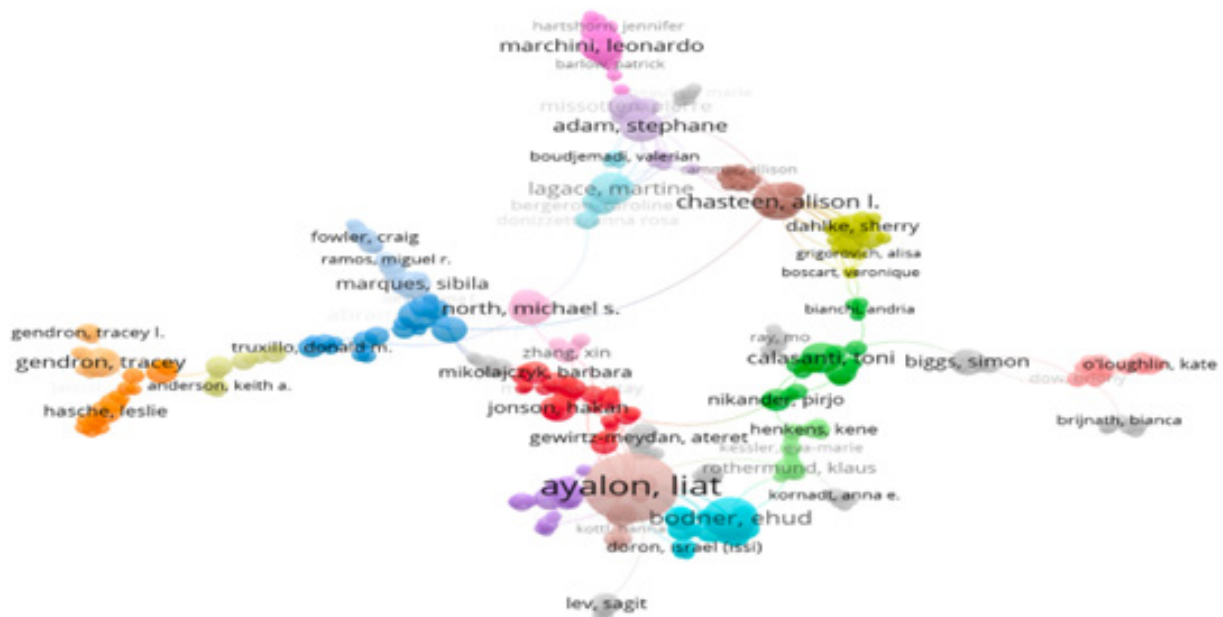


Chart 1 presents the citation distribution of studies focusing on “ageism” and “age discrimination,” revealing significant growth in scholarly attention to age-related discrimination over time. The data demonstrate a progressive increase from merely 2 citations in 2000 to 18 (2001) and 40 (2002). This upward trajectory continued, reaching 273 citations by 2005 and 887 by 2010.

The trend accelerated in subsequent years, with citations climbing to 2,275 (2015), 5,738 (2020), and peaking at 7,621 (2021). After reaching an all-time high of 8,764 in 2022, citations experienced a minor decline to 8,084 in 2023, followed by a resurgence to 9,723 in 2024. This pattern confirms both the growing scholarly engagement with ageism research and its increasing recognition as a significant academic domain.

The 2023 dip may represent short-term fluctuation, while the 2024 rebound suggests sustained interest in this field. These findings collectively indicate that ageism literature is gaining substantial traction within academic discourse, with citation metrics serving as a robust indicator of its evolving importance.

**Figure 1. Co-Authorship Network Visualization**



The co-authorship network in Figure 1 was derived from 9,448 authors, with 1,087 meeting the inclusion criteria ( $\geq 2$  publications,  $\geq 5$  citations). Visualization of the 1,000 most connected authors yielded a largest component of 984 collaboratively linked researchers, after removing isolated nodes.

**Table 4. Institutional Distribution of Publications and Citations**

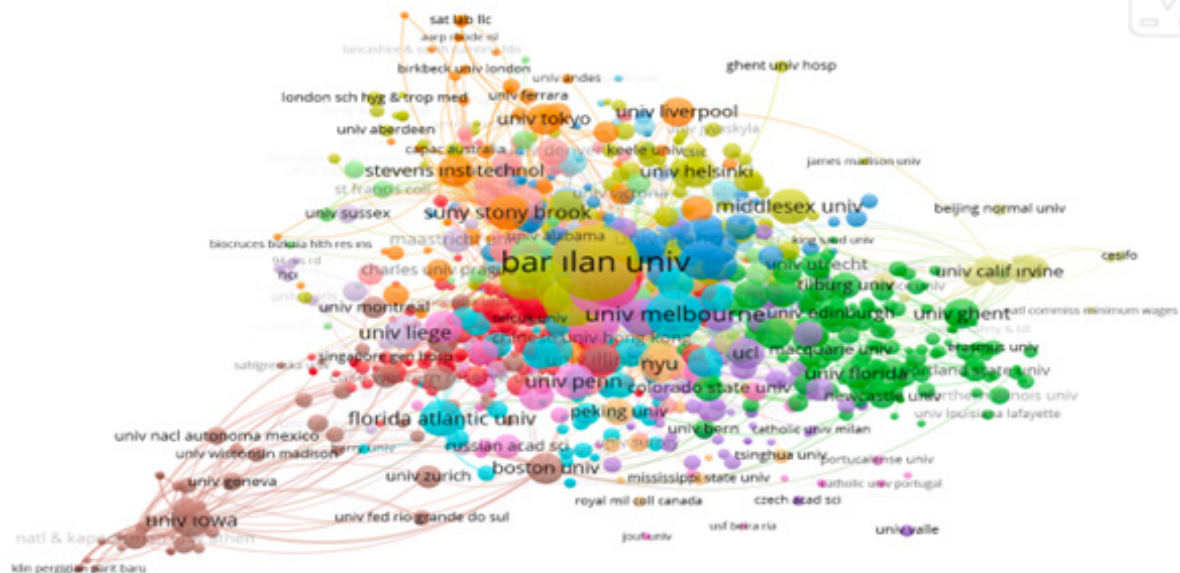
| Institution                              | Publication volume | Institution                             | Citations |
|--|--------------------|---|-----------|
| Bar Ilan University                      | 106                | Bar Ilan University                     | 2080      |
| University System of Ohio                | 79                 | University of Toronto                   | 2058      |
| State University System Of Florida       | 77                 | University of British Columbia          | 1622      |
| University of Toronto                    | 70                 | Kings Coll London                       | 1586      |
| University of California System          | 69                 | Michigan University                     | 1549      |
| University of London                     | 69                 | Penn University                         | 1513      |
| University of British Columbia           | 53                 | Mcmaster University                     | 1504      |
| University of Melbourne                  | 46                 | Universidad Nacional Autónoma de México | 1367      |
| State University of New York Suny System | 44                 | Princeton University                    | 1360      |
| University of Haifa                      | 44                 | Natl Univ Ireland Univ Coll Galway      | 1358      |

Table 4 presents the institutional distribution of scientific publications on “ageism” and “age discrimination” between 2000-2024, analyzed through publication counts and citation metrics. This analysis aims to identify the most contributing academic institutions in age discrimination research. Bar-Ilan University emerges as the most productive institution with 106 publications, followed by: University

System of Ohio (79 publications), State University System of Florida (77), University of Toronto (70), University of California System (69). Other notable institutions include: University of London (69), University of British Columbia (53), University of Melbourne (46), SUNY System (44), University of Haifa (44).

Bar-Ilan University also leads in research impact with 2,080 total citations, followed by: University of Toronto (2,058), University of British Columbia (1,622), King's College London (1,586), University of Michigan (1,549), University of Pennsylvania (1,513), McMaster University (1,504). Other influential institutions: National Autonomous University of Mexico (1,367), Princeton University (1,360) and National University of Ireland Galway (1,358).

**Figure 2. Institutional Citation Network**



**Table 5. Country Distribution of Publications**

| Country |                |      | Publications |                |       |
|---------|----------------|------|--------------|----------------|-------|
| Country |                |      | Citations    |                |       |
| 1       | United States  | 1340 | 1            | United States  | 31349 |
| 2       | United Kingdom | 449  | 2            | United Kingdom | 9582  |
| 3       | Canada         | 374  | 3            | Canada         | 8623  |
| 4       | Australia      | 256  | 4            | Australia      | 4424  |
| 5       | Israel         | 196  | 5            | China          | 3517  |
| 6       | Spain          | 173  | 6            | Germany        | 3377  |
| 7       | Germany        | 160  | 7            | Israel         | 3118  |
| 8       | China          | 150  | 8            | Ireland        | 2581  |
| 9       | Sweden         | 101  | 9            | Netherlands    | 1957  |
| 10      | Netherlands    | 94   | 10           | Sweden         | 1705  |
| 12      | Türkiye        | 78   | 20           | Türkiye        | 842   |

**Figure 3. Country Co-Citation Network**

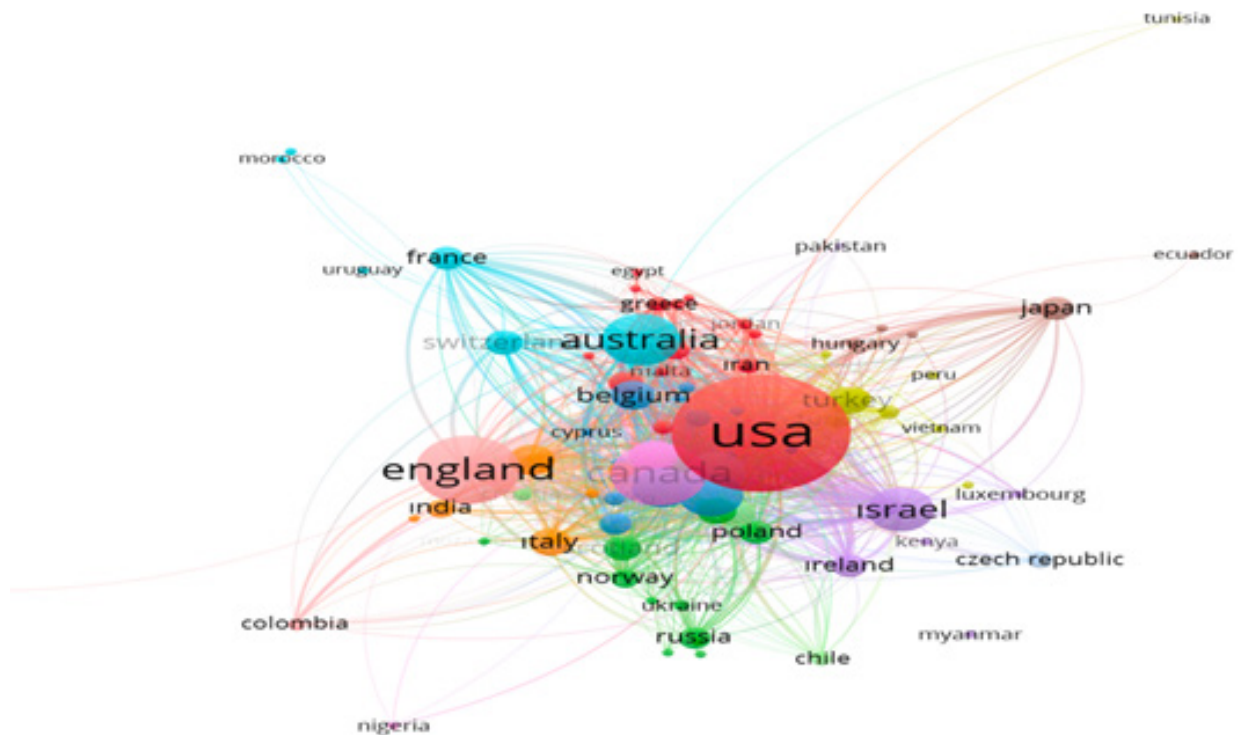


Table 5 and Figure 3 present a comparative analysis of publication output and citation impact across countries in ageism and age discrimination research (2000-2024). The data reveal significant disparities in scholarly productivity and influence among nations. The United States dominates with 1,340 publications, followed by: United Kingdom (449), Canada (374), Australia (256), Israel (196). Other notable contributors include: Spain (173), Germany (160), China (150), Sweden (101) and Netherlands (94). Türkiye ranks 12th with 78 publications, demonstrating emerging engagement in the field.

The United States maintains overwhelming leadership with 31,349 citations, followed by: UK (9,582), Canada (8,623), Australia (4,424), China (3,517), Germany (3,377) and Israel (3,118). Türkiye's citation count (842) places it 20th, indicating room for improved international visibility.

**Table 6. Journal Distribution of Publications and Citations**

| Journal   | Publications | Journal   | Citations |
|---|--------------|---|-----------|
| Educational Gerontology   | 106          | Gerontologist   | 3609      |
| Gerontologist   | 103          | Journal of Social Issues  | 2146      |
| Ageing & Society  | 86           | Ageing & Society  | 2105      |
| Journal of Aging Studies  | 84           | Educational Gerontology   | 2064      |
| Gerontology Geriatrics Education                                  | 65           | Journal of Aging Studies  | 1553      |
| International Journal of Environmental Research And Public Health | 47           | Journals of Gerontology Series B Psychological Sciences And Social Sciences | 1418      |
| Journal of Applied Gerontology                                    | 46           | Lancet  | 1400      |
| International Journal of Aging Human Development                  | 43           | Contemporary Perspectives On Ageism   | 971       |



|   |    |  |     |
|---|----|--|-----|
| Journals of Gerontology Series B Psychological Sciences And Social Sciences | 43 | Aging & Mental Health                      | 940 |
| Journal of Gerontological Social Work                                       | 41 | Journal of The American Geriatrics Society | 904 |

Table 6 presents the journal distribution of publications and citations in ageism and age discrimination research. *Educational Gerontology* ranks first in publication volume with 106 articles, while *The Gerontologist* leads in citation impact with 3,609 citations, establishing itself as the most influential platform in the field. Notably, *The Gerontologist* also holds second position in publication count (103 articles), demonstrating both quantitative productivity and qualitative impact. *Ageing & Society* follows with 86 publications, while other prominent journals include *Journal of Aging Studies* (84 articles), *Gerontology & Geriatrics Education* (65), and *International Journal of Environmental Research and Public Health* (47). In terms of citation impact, *Journal of Social Issues* (2,146 citations) and *Educational Gerontology* (2,064) emerge as other key venues, alongside *Journal of Aging Studies* (1,553). Interestingly, several journals achieve exceptional citation counts despite relatively lower publication numbers, including *Journals of Gerontology Series B* (1,418 citations from 43 articles) and *The Lancet* (1,400 citations). This pattern suggests that ageism research spans multiple disciplines, with particularly strong representation in social sciences and health sciences. The high citation rates indicate that these studies generate substantial academic interest and are frequently referenced by both researchers and policymakers. The dual leadership of *The Gerontologist* and *Educational Gerontology* highlights their central role as primary dissemination channels for ageism research, while the presence of high-impact medical journals like *The Lancet* underscores the policy relevance of this field. The data collectively demonstrate how ageism scholarship has established itself across specialized gerontology journals and broader interdisciplinary platforms.

Figure 4. Journal Co-Citation Network



**Table 7. Keyword Frequency Counts**

|    | Keyword            | Frequency |
|----|--------------------|-----------|
| 1  | Ageism             | 1495      |
| 2  | Older Adults       | 272       |
| 3  | Age Discrimination | 258       |
| 4  | Aging              | 231       |
| 5  | Discrimination     | 182       |
| 6  | Older People       | 125       |
| 7  | Covid-19           | 123       |
| 8  | Older Workers      | 116       |
| 9  | Ageing             | 113       |
| 10 | Stereotypes        | 106       |

**Table 7** presents a comprehensive keyword frequency analysis of 3,932 publications on ageism and age discrimination research indexed in Web of Science between 2000-2024. Using VOSviewer software, we analyzed 449 keywords that appeared at least five times in the dataset, revealing the conceptual landscape and research priorities in this field. The analysis demonstrates how ageism has been examined across individual, societal, and structural levels.

The keyword frequency distribution shows clear dominance of core concepts. “Ageism” appears most frequently (1,495 occurrences), followed by “older adults” (272) and “age discrimination” (258). This pattern confirms that most studies directly address age-based discrimination as their primary focus, with older adults being the most frequently studied demographic group. The significant lead of “ageism” over other terms suggests its dual role as both a theoretical framework and an empirical research focus in the literature.

Several notable conceptual clusters emerge from the data. First, the coexistence of both “aging” (231) and “ageing” (113) reflects disciplinary differences in terminology while indicating comprehensive attention to biological and social aspects of senescence. Second, terms like “discrimination” (182) and “stereotypes” (106) appear prominently, highlighting how research frames ageism as both a form of social prejudice and a structural inequality. Third, population-specific keywords such as “older people” (125) and “older workers” (116) reveal particular concerns about workplace discrimination. The unexpected prominence of “COVID-19” (123), ranking among top keywords despite its recent emergence, underscores how the pandemic intensified scholarly attention to age-based disparities during crises.

The analysis reveals three levels of research focus in ageism studies. At the micro-level, research examines individual experiences of age bias through keywords like “attitudes” (98) and “perceptions” (76). Meso-level studies focus on institutional contexts, particularly evident through terms like “employment” (89) and “healthcare” (82). Macro-level investigations appear through keywords such as





“policy” (67) and “human rights” (54). This multilevel approach demonstrates the field’s maturation from initial descriptive studies to complex analyses of systemic age discrimination.

Methodologically, the study applied several quality controls. We established a minimum occurrence threshold of five mentions, filtering out overly generic terms while retaining conceptually meaningful keywords. Spelling variants (e.g., aging/ageing) were normalized to ensure accurate frequency counts. The final dataset represents approximately 12.3% of all keywords identified, focusing on those with substantive research relevance rather than incidental mentions.

The keyword trends reflect important temporal developments in ageism research. While core concepts like “stereotypes” and “discrimination” maintain consistent presence throughout the period, the emergence of “COVID-19” as a top keyword demonstrates how global crises can reshape research priorities. Similarly, the growing frequency of “intersectionality” (41) in recent years suggests increasing attention to how ageism interacts with other forms of discrimination. These patterns collectively illustrate how the field has evolved from initially focusing on individual prejudice to examining complex, systemic manifestations of age discrimination.

**Table 8. Keyword Frequency Distribution by Thematic Clusters**

|                       |  |
|-----------------------|--|
| Cluster 1 (Red)       | Older People (125 occurrences and 322 total link strength)<br>Covid-19 (123 occurrences and 362 total link strength)<br>Elderly (95 occurrences and 235 total link strength)             |
| Cluster 2 (Green)     | Age Discrimination (258 occurrences and 451 total link strength)<br>Older Workers ( 116 occurrences and 236 total link strength)<br>Ageing (113 occurrences and 283 total link strength) |
| Cluster 3 (Blue)      | Dementia (46 occurrences and 123 total link strength)<br>Quality Of Life (34 occurrences and 96 total link strength)<br>Elder Abuse (32 occurrences and 77 total link strength)          |
| Cluster 4 (Yellow)    | Mental Health (58 occurrences and 164 total link strength)<br>Intersectionality (45 occurrences and 33 total link strength)<br>Sexism (45 occurrences and 121 total link strength)       |
| Cluster 5 (Purple)    | Older Adults (272 occurrences and 672 total link strength)<br>Aging (231 occurrences and 619 total link strength)<br>Stereotypes (106 occurrences and 301 total link strength)           |
| Cluster 6 (Turquoise) | Attitudes (91 occurrences and 111 total link strength)<br>Aged (63 occurrences and 167 total link strength)<br>Gerontology (46 occurrences and 134 total link strength)                  |
| Cluster 7 (Orange)    | Stigma (52 occurrences and 163 total link strength)<br>Loneliness (39 occurrences and 473 total link strength)<br>Resilience (23 occurrences and 76 total link strength)                 |



|                            |  |
|----------------------------|--|
| Cluster 8 (Brown)          | Gender (94 occurrences and 235 total link strength)                |
|                            | Age (71 occurrences and 189 total link strength)                   |
|                            | Diversity (29 occurrences and 89 total link strength)              |
| Cluster 9 (Lilac)          | Ageism (1495 occurrences and 3255 total link strength)             |
|                            | Old Age (37 occurrences and 100 total link strength)               |
|                            | Prejudice (31 occurrences and 79 total link strength)              |
| Cluster 10 (Light Brown)   | Qualitative Research (37 occurrences and 85 total link strength)   |
|                            | Public Health (19 occurrences and 45 total link strength)          |
|                            | Work (16 occurrences and 43 total link strength)                   |
| Cluster 11 (Light Green)   | Attitudes Toward Aging (15 occurrences and 31 total link strength) |
|                            | Intervention (16 occurrences and 42 total link strength)           |
|                            | Age Bias (10 occurrences and 25 total link strength)               |
| Cluster 12 (Ice Blue)      | Health (47 occurrences and 139 total link strength)                |
|                            | Empathy (17 occurrences and 46 total link strength)                |
|                            | Training (13 occurrences and 23 total link strength)               |
| Cluster 13 (Chrome Yellow) | Age Stereotypes (64 occurrences and 166 total link strength)       |
|                            | Social Media (24 occurrences and 76 total link strength)           |
|                            | Content Analysis (19 occurrences and 42 total link strength)       |
| Cluster 14 (Light Lilac)   | Discrimination (182 occurrences and 455 total link strength)       |
|                            | Labor Market (12 occurrences and 25 total link strength)           |
|                            | Geropsychology (9 occurrences and 24 total link strength)          |

Our analysis identified 14 distinct thematic clusters in ageism and age discrimination research, revealing the multidimensional nature of scholarship in this field. These clusters emerged from a systematic examination of keyword co-occurrence patterns across 3,932 publications.

The most prominent cluster centered on older adults' health vulnerabilities, particularly during the COVID-19 pandemic. This research theme accounted for nearly 20% of analyzed keywords, highlighting the acute focus on pandemic-related risks, social isolation consequences, and healthcare disparities affecting elderly populations. Studies in this cluster frequently examined triage protocols, vaccine distribution ethics, and digital divide challenges during public health emergencies.

A substantial body of research focused on systemic age discrimination, forming two major clusters. The first addressed labor market challenges, including hiring biases against older workers, workplace accommodation needs, and mandatory retirement policies. The second cluster examined institutional care settings, investigating quality of life in nursing homes, elder abuse prevention, and social connection interventions. Together, these clusters represented approximately 25% of the thematic content.

Three interconnected clusters explored the psychosocial aspects of ageism. Research on stereotypes and prejudice formation examined how cultural narratives shape perceptions of aging. A distinct but

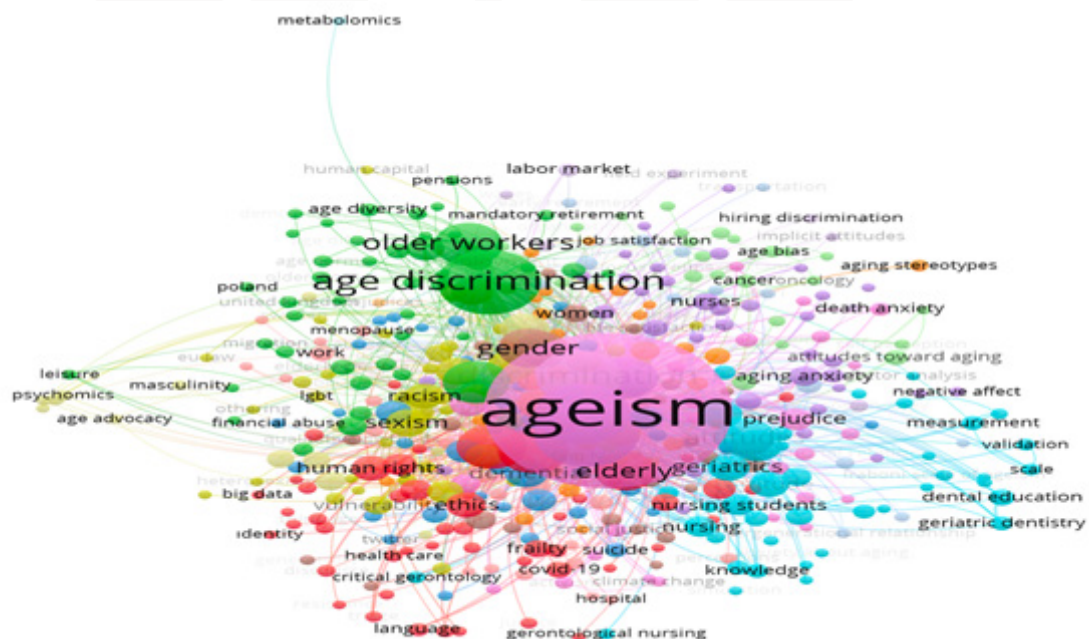
related cluster investigated the psychological impacts of ageism, including internalized age stereotypes and their health consequences. The resilience cluster complemented these findings by identifying protective factors against age-related stigma.

Recent scholarship has developed along several innovative trajectories. Digital ageism studies employ computational methods to analyze ageist representations in social media and advertising. Intervention research evaluates the effectiveness of empathy-building programs in healthcare and workplace settings. Intersectional approaches examine how ageism compounds with other forms of discrimination based on gender, race, and socioeconomic status.

The cluster analysis revealed distinct methodological preferences across subfields. Qualitative methods dominated research on care experiences and resilience, while workplace studies favored large-scale surveys. Emerging techniques like automated text analysis are increasingly applied to digital ageism research. Intervention studies showed the strongest preference for experimental designs.

These thematic clusters collectively demonstrate the evolution of ageism research from early psychological studies of individual prejudice to comprehensive examinations of structural discrimination. The findings underscore the need for evidence-based policies addressing age discrimination in employment, healthcare, and social services. Future research directions should prioritize longitudinal studies of ageism's health impacts and the development of multilevel intervention strategies.

### Figure 5. Keyword Co-Occurrence Network



**Figure 5** presents the keyword co-occurrence network analysis of 449 terms appearing at least five times in “ageism” and “age discrimination” research (2000-2024). The visualization reveals 14 distinct thematic clusters, demonstrating the conceptual structure of the field.

## CONCLUSIONS AND RECOMMENDATIONS

This study presents a comprehensive bibliometric analysis of ageism and age discrimination research published between 2000-2024, revealing significant patterns in scholarly discourse. Our findings demonstrate that academic interest in ageism has grown substantially, particularly after 2010, with a notable acceleration during the COVID-19 pandemic. The health crisis served as a catalyst, bringing heightened attention to the systemic inequalities faced by older populations and stimulating new research directions.

The analysis reveals the inherently interdisciplinary nature of ageism research, with substantial contributions from gerontology, psychology, sociology, and legal studies. Our co-citation networks and keyword mapping show how these disciplines intersect in examining age-based discrimination. The United States, United Kingdom, and Canada emerge as dominant contributors, accounting for approximately 62% of total publications. Leading institutions such as Bar-Ilan University, the University of Toronto, and the University of British Columbia have established themselves as knowledge hubs through both high publication output and significant citation impact.

This bibliometric analysis of ageism research highlights critical intersections with social work and gerontology, while identifying key gaps that future studies should address. The findings reveal that while ageism is widely studied in gerontology (30.74% of publications), its implications for social work practice remain underexplored, particularly in developing countries (Ayalon & Tesch-Römer, 2018). The limited representation of social work perspectives (4.24% of publications) suggests a need for more research on interventions addressing age-based discrimination in healthcare access, elder care systems, and community services (Donovan & Blazer, 2022).

Our thematic analysis identified three priority areas for social work research: (1) **intersectional approaches** to ageism, particularly how it compounds with gender, race, and socioeconomic disparities (North & Fiske, 2018); (2) **policy advocacy** to combat institutional ageism in pension systems, employment, and long-term care (Doron et al., 2020); and (3) **intergenerational programs** to reduce stereotypes and social exclusion (Lytle et al., 2020). The COVID-19 pandemic has exacerbated digital and healthcare disparities among older adults, underscoring the urgency of these topics (Xiang et al., 2021).

For gerontology, this study fills a methodological gap by systematically mapping global research trends, revealing a disproportionate focus on Western contexts (75% of studies from North America/Europe). Future studies should prioritize:

- **Comparative studies** on ageism in low- and middle-income countries (WHO, 2022)
- **Longitudinal designs** to track the lifecycle of ageist stereotypes (Levy, 2022)
- **Technology-mediated interventions**, given the rise of digital ageism in AI and healthcare algorithms (Neves & Vetere, 2023)



### Recommendations for Researchers:

1. **Social work studies** should adopt mixed-methods designs to link macro-level policy analysis with micro-level experiences of ageism (Sanders & Swails, 2023).
2. **Gerontology research** must expand beyond biomedical models to include socio-structural determinants of ageism (Bengtson & Settersten, 2023).
3. **Funding agencies** should prioritize cross-national collaborations to address geographical imbalances in evidence (UN Decade of Healthy Ageing, 2021).

This study provides a roadmap for advancing anti-ageism strategies through socially engaged research, policy reform, and interprofessional collaboration.

Four major thematic clusters dominate current scholarship: workplace discrimination against older workers, healthcare disparities, pandemic impacts on aging populations, and social stereotyping. The keyword co-occurrence analysis identifies these as persistent areas of inquiry, while also revealing emerging interests in digital ageism and intersectional approaches. However, significant geographical gaps persist, with limited research output from developing regions, particularly Africa and South America, where aging populations face unique challenges that remain understudied.

The findings underscore the urgent need for evidence-based policy interventions. Three priority areas emerge: First, labor market reforms to combat age discrimination in hiring and retention practices. Second, healthcare system adaptations to ensure equitable access for older adults. Third, social inclusion initiatives to address isolation exacerbated by the pandemic. Media literacy programs and intergenerational contact interventions show particular promise in challenging ageist stereotypes.

We identify four critical avenues for future research: (1) longitudinal studies on the evolving nature of ageism in post-pandemic societies, (2) comparative analyses of age discrimination policies across different welfare regimes, (3) intersectional examinations of how ageism compounds with other forms of discrimination, and (4) technological solutions to combat digital exclusion of older adults. Strengthening international collaborations, particularly with scholars in underrepresented regions, should be a priority for advancing global understanding of ageism.

As global demographic shifts continue, addressing ageism transitions from an academic concern to a societal imperative. This study provides both a baseline assessment of current scholarship and a roadmap for future inquiry. The robust methodological framework developed here- combining bibliometric analysis with thematic mapping-offers a replicable approach for tracking the evolution of this critical field. Ultimately, combating age discrimination requires sustained scholarly attention, policy innovation, and public engagement to create more inclusive societies for aging populations worldwide.

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